

ANNUAL REPORT

OF THE DIRECTOR

1965

PAN AMERICAN HEALTH ORGANIZATION

Pan American Sanitary Bureau, Regional Office of the

WORLD HEALTH ORGANIZATION



**The Pan American Sanitary Bureau
is the secretariat of the
Pan American Health Organization;
the Bureau is also the
Regional Office for the Americas
of the
World Health Organization**

*Pan American Health Organization
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ANNUAL REPORT OF THE DIRECTOR

of the

PAN AMERICAN SANITARY BUREAU

REGIONAL OFFICE

of the

WORLD HEALTH ORGANIZATION

1965

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PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION

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**To the
Members
of the
Pan American Health Organization**

I have the honor to transmit herewith the Report on the work of the Pan American Sanitary Bureau, Regional Office for the Americas of the World Health Organization, in the year 1965. This Report provides a description of activities at Headquarters and in the countries, together with a summary of the projects carried out by the Governments of the Americas in collaboration with the Bureau and with other international organizations. The Financial Report for the year is submitted separately.

Respectfully,

A handwritten signature in cursive script, appearing to read 'A. Horwitz', with a long horizontal flourish extending to the left and a large loop at the end.

**Abraham Horwitz
Director**

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ACRONYMS AND CORRESPONDING AGENCIES

AID	Agency for International Development (United States of America)
AIDIS	Inter-American Association of Sanitary Engineering
ADA	American Dental Association
ALAFO	Latin American Association of Dental Schools
CIAP	Inter-American Committee of the Alliance for Progress
CREFAL	Community Development Training Center
ECLA	Economic Commission for Latin America (UN)
ESAPAC	Central American School of Higher Education in Public Administration
EXIMBANK	Export-Import Bank of Washington, D.C., U.S.A.
FAO	Food and Agriculture Organization (UN)
IADB	Inter-American Development Bank
IA-ECOSOC	Inter-American Economic and Social Council (OAS)
IBRD	International Bank for Reconstruction and Development (World Bank)
ICAITI	Central American Institute of Investments and Industrial Technology
ILO	International Labor Office
INCAP	Institute of Nutrition of Central America and Panamá
KF	W.K. Kellogg Foundation
MARU	Middle America Research Unit (NIH, USPHS)
MEIC	Medical Education Information Center
NIH	National Institutes of Health (U.S.A.)
OAS	Organization of American States
PAHO	Pan American Health Organization
PASB	Pan American Sanitary Bureau
RF	Rockefeller Foundation
UN	United Nations
UN-SF	United Nations, Special Fund
UN-TA	United Nations, Technical Assistance Program
UN-TAO	United Nations Bureau of Technical Assistance Operations
UNESCO	United Nations Education, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund
WHA	World Health Assembly
WHO	World Health Organization

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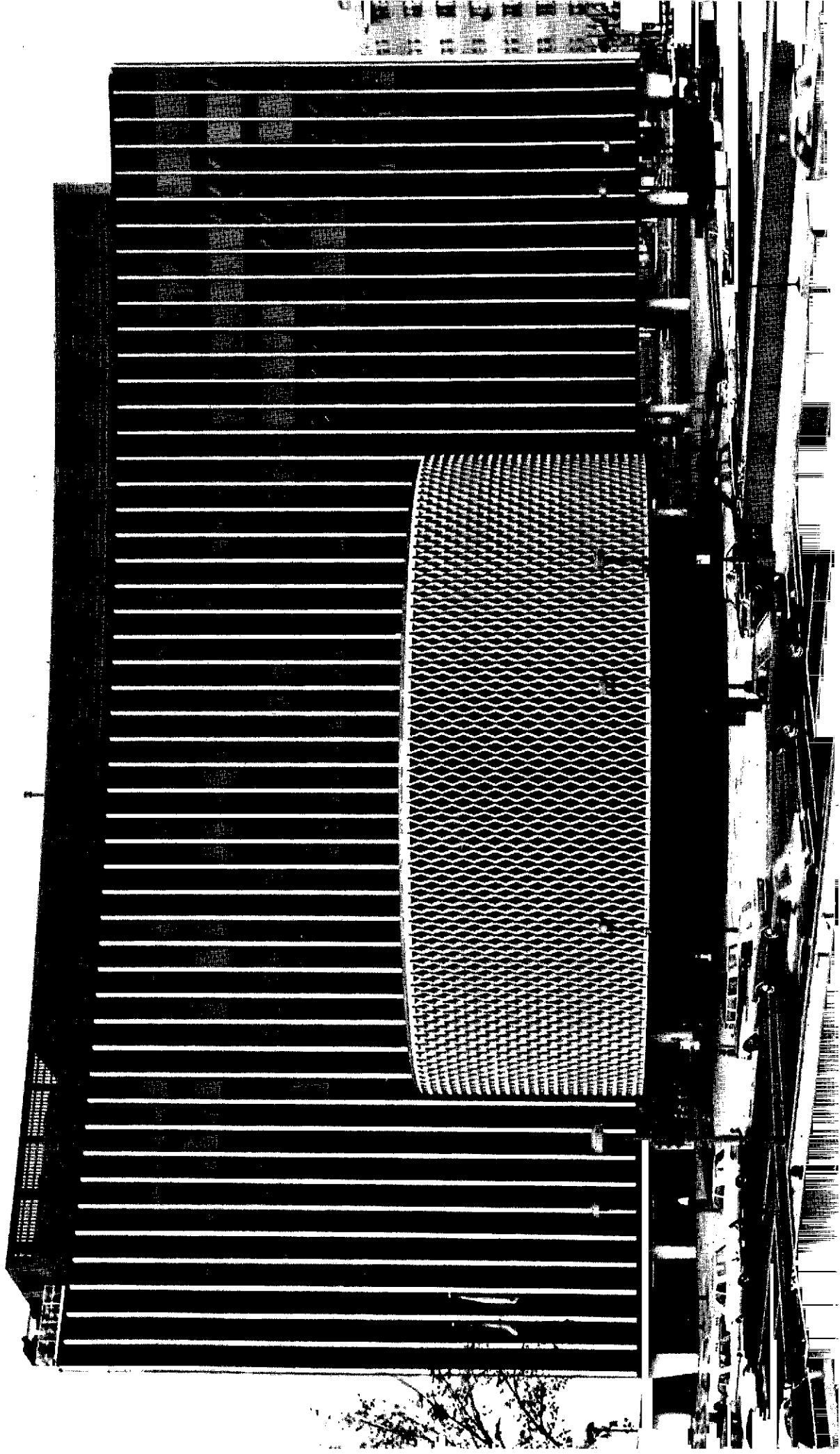
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INTRODUCTION

AMONG THE events of major importance in the life of our Organization in 1965 the most outstanding was the **inauguration of the building** that serves as Headquarters of the Pan American Health Organization and the Regional Office for the Americas of the World Health Organization. In keeping with the grandeur of the occasion, the ceremony was a simple one. The distinguished personalities who took part in the ceremony praised the work done on behalf of health in the Americas and stressed the modern trends of this social function. They expressed their gratitude to the Government of the United States of America for the gift of the land and to the W. K. Kellogg Foundation for the grant of \$5 million, repayable in programs, which made the building possible.

Admirable though its sober and elegant lines may be, it is rather what it stands for and its future that we see, for it is there that resides the humanitarianism that imbues all our activities. And these are based, in form and content, on the postulates of the Constitution. It has been our responsibility in the past, and it will continue so to be in the future, to translate those ideals into convictions, those purposes into concrete realities. The spiritual legacy we have received was conceived 63 years ago. Time has shown the nobility of that vision; its strength is reflected in the continuity of our undertaking which has survived the vicissitudes the countries of the Continent have undergone. Its flexibility has been demonstrated in its ability to adapt itself to the dominant social trends of each period. For all the activities of the Organization in the course of the century have been concerned essentially with human beings and their culture, the latter being used here as "the way of life of a people—their social, economic, and political organization, and their characteristic patterns of thought, emotion, and interpersonal relations."¹ People are more than the sum of their needs, wants, and fears. If there is no respect for their spiritual qualities, no enterprise, no matter what

¹ Report of the Scientific Group on Mental Health Research. Geneva, Switzerland; 6-10 April 1964. WHO/MHO/PA/75.64.

its purposes, can be lasting and its success, if any, will be short-lived.²

Among the events accompanying the inauguration of the new Headquarters was the first in a series of PAHO/WHO **Scientific Lectures**. Their aim is to deal with health in the widest sense of the word, including all its repercussions in modern society, so as to "enrich [the knowledge of] the specialists in the various fields concerned with the origin of diseases, their prevention and treatment, and the adaptation of human beings to their environment." In explaining this, I said ". . . it is clear, to our way of thinking, that of all branches of biology, health care, as a social function, is the one that requires a greater association between sciences and humanities, a veritable dialogue. We have to deal with the most vital activities of every society. We have to accomplish it, adjusting knowledge and techniques to the dominant conduct, attitudes, and beliefs. We must perform our task as part of a process of interaction of ecological, economic, and cultural factors. We must motivate and persuade and not impose and coerce. It has been rightly said that the humanism of our time comprises science, technique, and action; and the dialogue of the Humanities, as knowledge and formation of the cultural world, with the Sciences, as knowledge of the natural world, and with the Techniques, as training to use it, is produced most intensely and effectively in action."³

The lecture was given by Dr. Rene Dubos and dealt with "Man and his Environment—Biomedical Knowledge and Social Action." It was a fresh testimony to the universality of his thought and corresponds to modern ideas of health, as a reflection of individual attitudes and social behavior. In referring to the biomedical sciences and the human condition, Dr. Dubos said: "I have emphasized in this discussion the adaptive responses of man to his environment, not only because of the immense practical problems that they pose, but also because they illustrate so well the complex interplay between

² Speech on occasion of the Inauguration of the PAHO new Headquarters building, 27 September 1965.

³ Horwitz, A. *PAHO Scientific Publication* 131, p. 2-3. Issued in March 1966.

human health, social action, and biomedical knowledge. Admittedly, all aspects of man's life including his health are linked to his history and his social structures. Ortega y Gasset went as far as claiming that 'Man has no nature, what he has is history.' But it is also true that man's social history is conditioned by his biological responses to his total environment."⁴ Later, Dubos added: "In [the] final analysis, health depends upon successful adaptation to the physical and social environment. The very use of the word adaptation, however, points to the immense conceptual difficulties faced by those who are concerned with human health. As we have seen, the concept of adaptation can hardly be applied to human beings in a simple way, with a purely biological meaning, because this would often imply the acceptance of a state not desirable in the long run. Neither fitness to the conditions of the present, nor comfort or survival of the person concerned, will encompass the goals of man and the richness of his nature. Man lives of course in the present, but he also wants to preserve the past and he is concerned with the future. These are not empty words. They refer to complexities of the human condition that must be faced by all physicians, public health officers, and scientists who are really concerned, not only with the physico-chemical operations of the body machine, but with the welfare of human beings."⁵

These ideas are in accord with the general spirit of the work of the Governments and the Organization on behalf of the health of the peoples of the Americas. They point up the difficulties of the undertaking, the stimulus that comes from carrying it on, and the deep spiritual satisfaction accompanying every such act. The work is as varied and diversified as the nature of human beings and their behavior in society. Without denying the importance of any health problem, for everyone of them represents personal suffering or danger, the tragic fact is that what should be done in each country is greater than what can be done. An order of priority must be assigned to the programs, based on their measurable effects in terms of the prevention or cure of disease and of social welfare. The programs, moreover, can be either direct or indirect, that is to say, either intended to prevent deaths or diseases, limit their spread or prevent their occurrence, or else to improve both the quality and quantity of the essential human resources—through education and training and the organization and administration of services.

⁴ Dubos, R. *Ibid.* p. 16.

⁵ *Ibid.* p. 17-18.

THESSE are the ideas that underpinned the work of PAHO/WHO in the Americas in 1965. This work comprises a total of **488 projects**, which in turn are grouped in programs listed in the program budget. Analysis of them shows that the largest investments were for those health programs to which the Governments and the Directing Bodies of the Organization have assigned priority. As in the past, and as will continue to be the case in the future, certain specific activities are included that are necessary for the Government, university, institution, or society for which they are intended. It must be remembered that development and progress in the Americas, as in other regions of the world, has not taken place in a uniform or simultaneous manner. Thus, there has been a gradual rise, with peaks of relatively high economic growth and advanced technology, surrounded by large areas, particularly rural ones, where the dominant picture is one of underdevelopment, again irregular in nature. The nature of health problems, the natural history of disease, and the progress made in the health field during the century, explain to some extent why this contrast is not so marked in this social aspect. Nevertheless, it is to be seen in the quantity and quality of resources and their distribution in each country, and it is the reason for the diversity of the functions and programs of the Governments, and, consequently, of international organizations. I repeat that the largest sums are devoted to the most prevalent disorders while a small part of the total sum is spent on certain specialized activities. What was done by the Governments in 1965 with assistance from the Organization constitutes the subject matter of this REPORT.

BECAUSE it is a symbol of the progress made by the Americas in the health field, I would like to refer to the control of **quarantinable diseases**. Table 25 shows the position with regard to jungle yellow fever, smallpox, plague, and classic exanthematic typhus.

Seventy-nine cases of jungle **yellow fever** were reported in 6 South American countries. In all of them, the diagnosis was reached by pathological examination of the liver. The cases occurring in Brazil seem to indicate a spread of the virus from the Amazon Basin to the southern and eastern parts of the country. During the year, a large amount of 17D vaccine was produced in the Oswaldo Cruz Institute, Rio de Janeiro, and at the National Institute of Health of Colombia, which, by agreement with PAHO, are responsible for providing the countries of the Continent with this vaccine as well as

with diagnostic services. The urgent need to vaccinate in good time both the inhabitants of the regions where the virus is prevalent, and workers whose occupation takes them into the forest, is becoming increasingly evident in the Americas. There are some who maintain that full development of the Region will not be possible unless satisfactory communications are established between the eastern and western parts of South America. In practice, it is necessary to develop, populate, and link up the communities in the large basins of Orinoco, Amazon and Plate rivers. This is an undertaking calling for huge investments of skill, experience, and capital, but the potential riches which exist seem to be great enough to justify any economic effort. However, it is the importance of such development works for the real cultural and humanitarian integration of the Continent which should promote and stimulate the genuine feeling of regional purpose in undertaking them. Works involving health risks for the workers carrying them out should be given priority; that is the lesson of history, in which connection we need only mention the construction of the Panamá Canal. Scientifically planned epidemiological studies are essential to ascertain the nature of the diseases which may be encountered and to determine ways of preventing them. Clearly, jungle yellow fever must be taken into consideration in this connection.

With regard to the urban vector of yellow fever, *Aedes aegypti*, the REPORT describes the status of the eradication program at the end of 1965. The reinfestation of San Salvador and certain surrounding localities is a matter of regret and has made it necessary to resume the program. The vector is still present in the northern part of South America, the Caribbean Area and the United States of America. In certain countries and territories it has developed resistance to chlorinated insecticides although it appears to be susceptible to some of the organic phosphorus ones. The programs have proceeded with varying intensity and over varying areas, as explained in the REPORT. It is hoped that new insecticides now being tested will prove effective against the resistant forms so as to give a new impetus to the program and eradicate the vector all over the Continent.

In 5 countries of South America 1,547 cases of **smallpox** were reported. In 1964, 3,218 cases had been reported by 8 countries in the same region. From the information given in the REPORT it is evident that Governments are genuinely interested in coordinating their activities through the Pan American Sanitary Bureau so as to rid the Continent of smallpox. This aim was clear from the discussion of the problem at the XVI Meeting of

the PAHO Directing Council, XVII Meeting of the WHO Regional Committee for the Americas (Washington, D.C., U.S.A.; 1965)⁶ and was approved in Resolution XXX. This Resolution reaffirms the priority given by the Organization to the program and specifies the measures recommended to Governments, as well as the instructions given to the Secretariat for that purpose. These instructions include the estimation of the national and international investments necessary to eradicate the disease. A scheme was drawn up covering all the factors involved in making this estimate, which will be undertaken by a group of consultants.

Although in the decade beginning in 1960 the number of known smallpox cases has been significantly lower than in the previous decades of the century, the program aims at absolute eradication of the disease. Smallpox seems to be confined to South America which, from the epidemiological viewpoint, can be regarded as a single region. Every outbreak reveals a geographical link between the patients and proves once more that health knows no frontiers. In addition, it is clear either that the gravity of the disease has greatly decreased, as revealed by the fall in the number of deaths, or that, for unknown reasons, there is a predominance of mild smallpox or alastrim. It is also not easy to explain the absence of smallpox from the Central American Isthmus where the immunity levels are low. In any event, all the necessary conditions are present and joint efforts are justified for the virtual eradication of smallpox in the Americas, followed by measures to prevent its reintroduction from outside.

The incidence of **plague** increased in 1965, thus continuing the trend that began in 1960. During the year, 848 cases were reported in 5 countries, that is, 10% more than in 1964 (Table 18). Those countries of South America where the disease exists at present appear to be connected by the Amazon Basin which acts as a natural means of communication for the carriers of the causative agent.

Without considering the ecological aspects, it is impossible to understand the epidemiology of plague or to establish adequate control measures. In the forest and rural areas of the countries affected and, to a certain extent, in the slum districts of the respective cities, the traditional mode of social life facilitates the spread of the disease. This fact points up the difficulties involved in preventing it and the urgency of concentrating efforts on the large urban centers, particularly those, like ports, which are essential for the national economy. Ecological investigations have become essential for an adequate in-

⁶ PAHO Official Document 66. Issued in April 1966.

terpretation of the epidemiology of the disease and the institution of preventive measures. Such studies are all the more necessary since, thanks to modern treatment, the mortality rate has fallen substantially.

Four hundred and twenty-seven cases of exanthematic, or louse-borne, **typhus** were reported by 5 South American countries. The frequency of the disease is relatively low in this Continent, a fact which, in view of the method of transmission, may be attributed, to some extent, to improved living conditions.

AMONG the general activities of the Organization in 1965 the program that accounted for the greatest expenditure was **malaria** eradication.

Of the total funds, 17.1% were devoted to carrying out 23 projects in 20 countries and territories and 9 inter-country or inter-Zone projects, by means of 113 consultants. Assistance comprised direct advice, training, and the provision of certain supplies, particularly drugs, for mass prophylactic medication. In the latter connection we may mention the treatment in Haiti of more than 1,250,000 persons with a combination of chloroquine-pyrimethamine in areas with definite extradomiciliary transmission.

The details of activities in each malarious area of the Continent are given in the REPORT. The results are, of course uneven, since the factors governing the program and its progress vary from country to country and also within each country or territory. It is unfortunate that malaria eradication, which was approved by the Governments at the XIV Pan American Sanitary Conference (Santiago, Chile; 1954), did not commence and proceed simultaneously all over the Americas. Because of this, it will be necessary to intensify vigilance in all areas in the consolidation and maintenance phase until the disease has been virtually eradicated, and all this will be correspondingly expensive.

The factors governing the problem to which we have referred are ecological, political, administrative, and economic in nature. With regard to the last mentioned, it is worthwhile stressing the interest expressed by several Governments in 1965 in reviewing the program and its tendency, in determining, as far as possible, the total financial resources necessary, including even foreign capital in the form of loans. In this regard, the United States Agency for International Development deserves great praise for its policy of granting loans, on very favorable conditions, for malaria eradication, including

payment of local personnel costs. The approach to rural welfare programs, and malaria eradication is one of them, was advocated by the Inter-American Economic and Social Council in Resolution A-11/M62 of its First Meeting at the Ministerial Level (México, D.F., México; 1962).⁷

Worthy of mention is the decision of the Ministers of Health of Central America and Panamá to closely coordinate the malaria programs of their countries, with the advice of the Organization. To this end a meeting of the Ministers and their advisers was held in Washington in April 1965 at which a detailed analysis was made of procedures for such joint action and financing with both domestic and foreign sources, as well as through international assistance. The decisions taken served as a basis for organizing the 1966 program.

Regarded as a whole, the results of activities in 1965 call for the following comments:

There was a 5% reduction in the total number of confirmed cases as compared with 1964. In the Caribbean Area there was an almost 50% drop which reflects the mass treatment in Haiti to which I have referred. In Cuba and the Dominican Republic the number of cases was reduced by more than 75%, and an area of the latter country was shifted into the consolidation phase. In the other islands in the Caribbean (countries and territories) with antimalaria programs underway, all of which are in the consolidation or maintenance phase, only 5 cases were confirmed.

In South America, excluding the Guianas, the total reduction in malaria cases was 3%. In Brazil some areas reached the consolidation phase, but the local number of cases recorded remained practically unchanged because the national campaign was extended to new areas. If Brazil is excluded, the fall in South America was 9%, the biggest drop occurring in Bolivia.

In the Guianas there was an increase in the number of cases, from 1,954 in 1964 to 4,361 in 1965. This surprising rise is a consequence of a pronounced increase in case-finding in the interior of Surinam and not a real increase in the prevalence of the disease. In French Guiana and in British Guiana⁸ even fewer cases were notified than in 1964. In the latter country all the interior has been included in the consolidation phase and no *problem areas* have been reported.

There was no real advance in the eradication program in Central America, México, and Panamá, apart from a slight drop in the number of confirmed cases in 1965 as compared with 1964. In El Salvador there was a marked increase, although smaller than in other countries, but in

⁷ OEA Ser.H XII.A.

⁸ Guyana, since 26 May 1966.

the same period there were decreases in Guatemala, México, and Nicaragua. The number of inhabitants in the problem areas was much higher than in 1964, most of them being in México. Important progress was made in the administration, coordination, and financing of the programs.

Naturally, the results achieved depend on the particular phase of the program in each area of the various countries. The achievements were greater in inverse proportion to the number of problem areas and in direct relation to the size of the area in consolidation or maintenance phase, the efficiency of administration, and the regularity of supply of funds.

In 1965 a PAHO Advisory Committee, composed of distinguished authorities with great knowledge of the malaria problem and experience in eradication held its first meeting. It stated its views on how malaria eradication could be speeded up and suggested the investigations essential for this purpose as well as changes in technique or procedure deemed advisable. Some of its members visited specific countries before the meeting, in order to obtain direct information to add to the data in on-hand documentation. The report of the meeting endorsed what had been done by the Organization and made a forecast based on an analysis of the problem in each country. The Committee will meet periodically, in view of the value of its opinion for the program in the Americas.

The Second Seminar on the Role of General Health Services in Malaria Eradication was held at Cuernavaca, México. Organized along the same lines as the First Seminar, held for the countries of South America and held at Poços de Caldas, Brazil, in 1964, the Second Seminar likewise defined the mutual and complementary responsibilities of malariologists and health administrators. It is hoped that their recommendations will gradually be put into practice with assistance from consultants specially appointed for the purpose.

IN 1965 there was renewed interest in **tuberculosis** and its control in accordance with the orientation decided upon at international meetings in 1964 (*PAHO Scientific Publication 112*). Interest was expressed in bacteriological diagnosis, the training of auxiliary personnel, indiscriminate BCG vaccination, i.e., without prior tuberculin testing, and BCG vaccination in conjunction with other types of immunization. *Verification areas* were established in several countries for the purpose of instituting standards and procedures and trying out techniques for ensuring adequate coverage of the population and reduc-

ing the incidence of tuberculosis. It is hoped that it will be possible to gradually enlarge these areas in each country.

Despite the series of activities described in the **REPORT**, it is clear that progress in tuberculosis control has slowed down in recent years, in comparison to the fall in mortality achieved in the previous 15 years. The fact is that today the rates in Central and South America are at least 8 to 10 times higher than those of the United States and Canada. Both general and specific activities should be reinforced, for which there is no lack of knowledge or experience. It is essential, above all, to improve the organization and administration of the services and increase the yield of resources, and also to supplement them so as to achieve the targets laid down for each stage of the program.

FOURTEEN countries reported 152,189 cases of **leprosy**, of which about 70% were under control. Details concerning age, sex, clinical form, treatment, and contacts are to be found in Tables 8 and 9. Bearing in mind the total population of the countries affected, it would seem that the prevalence should be considerably higher. The incompleteness of the information is reflected in the organization of the control programs. This situation led to the Seminar at Cuernavaca in 1963, whose recommendations have been gradually put into practice. Mention should be made of the advisory services provided to the Governments of Argentina, Ecuador, and Venezuela in 1965 in connection with the setting up of systems for data registration analysis of working methods, their cost and productivity, and the determination of reasonable quantitative objectives to be achieved within specified time limits. These procedures will make it possible to program leprosy control in an appropriate manner and increase the yield of the resources available. The Organization will communicate the results achieved to Governments so that they can put them into practice.

In 1965 special attention was paid to the rehabilitation of leprosy patients with the aim of avoiding the development of deformities, as a first priority, and of preventing existing disabilities from becoming worse, as well as curing them. Experience shows that 45% of all leprosy patients suffer from some type of disability. A course for physicians was organized in Caracas, emphasizing nonsurgical methods, both because these benefit a larger number of patients and because they can be applied by technicians with various degrees of training and not exclusively by physicians. The course lasted

2½ months and was sponsored by the Government of Venezuela and the Pan American Sanitary Bureau with the cooperation of the American Leprosy Mission, the Department of Physical Medicine of New York University, the World Rehabilitation Fund, Inc., and the International Society for the Rehabilitation of the Disabled.

The interest of Governments in this problem is gauged from the information given in the pertinent sections of Chapters I.A. and VIII of the REPORT and by the extent of the control programs. The number of patients discovered has increased and will no doubt continue to do so in future. We are far from a systematized, nationwide effort in every country, covering cases and contacts, and tending in this way to decrease the incidence of leprosy.

BECAUSE of its importance, we should like to emphasize the Seminar on **Veneral Diseases** held at Headquarters in October 1965 with the valuable assistance of experts of the Communicable Disease Center of the United States Public Health Service. The aim of the Seminar was to enable the health authorities of the Continent to exchange ideas and experiences with a group of international experts. The epidemiology, diagnosis, and control of these diseases were examined in detail. Since their incidence is rapidly increasing all over the world, it is hoped that the report of this Seminar will be of assistance in programs being sponsored by Governments.

THE Organization provides advice on rabies, brucellosis, hydatidosis and bovine tuberculosis control programs through the Pan American **Zoonoses** Center and specialized consultants. The REPORT describes the work of the Governments and of international agencies in this field in 1965. The ever-increasing importance of **rabies** is shown by loss of life and its economic consequences. There is ample room for research to improve the quality of vaccines for human and animal use. The problem of rabies on the México-United States border calls for special attention. By agreement between the Secretary of the Ministry of Health and Social Welfare of México and the Surgeon General of the United States Public Health Service, PAHO has been asked to coordinate control activities. Ten countries of the Continent reported a total of 2,056 cases of **brucellosis** (Table 13). This fact, serious in itself, added to the harm caused by the disease to the economy of those countries, justifies the work the Organization describes in the REPORT. An Agreement was

signed with the Government of Argentina covering a nationwide program, directed basically towards the elimination of the reactors and the vaccination of calves. Of comparable importance is **bovine tuberculosis**, which is believed to be widespread, although the available data make any accurate evaluation impossible. Worthy of mention is the achievement of Venezuela where, in less than 6 years, the infection rate in 5 states and the Federal District has been reduced from 3.39% to 0.34%.

Full details of the work of the Pan American Zoonoses Center are given in the REPORT, covering research, advisory activities, education and training, diagnostic and reference services and publications. From the outset, the contribution of the Government of Argentina has been essential for the progress of the Center. A further expression of its generosity was the donation of laboratories and offices for the Center in the buildings of the National Institutes of Health in greater Buenos Aires. Although the Center retains the farm and the buildings in Azul for experimental purposes, the move to the Capital is of great importance for the future work of the Center, and coincides with an application to the United Nations Special Fund for a sum of \$1.5 million to be spent over 5 years in expanding direct assistance to Governments, training of technicians, and research on problems connected with the prevalent zoonoses.

NORTH and Central America as well as the Caribbean Area remained free of **foot-and-mouth disease** in 1965. The REPORT gives details of epidemic outbreaks in South America but at the same time stresses the activities of Governments, with assistance from the Pan American Foot-and-Mouth Disease Center, all of which indicate a fresh determination to reduce progressively the incidence of the disease. A considerable factor in this connection has been the importance assigned all over the Continent to this problem in view of its influence on nutrition—because of the enormous loss of animal protein—and on the national economy, since it affects the general agricultural policy of the Governments. Concrete expression was given to this feeling in the pertinent Resolutions of the last 3 Meetings of the Inter-American Economic and Social Council at the Ministerial Level and the statement made in April 1965 by the Inter-American Committee of the Alliance for Progress, pointing out the need for foreign capital to supplement domestic resources in order to finance systematic vaccination programs and transmitting the decision of the Inter-American Development Bank

and the International Bank for Reconstruction and Development to entertain requests for loans for coordinated control measures against foot-and-mouth disease. The advisory activities of the Center vis-a-vis Governments have thus acquired a new dimension since it is possible to draw up comprehensive plans for the control of the disease based on a continuing analysis of its trend in each country, special attention being paid to the characteristics of the causative viruses.

The REPORT contains plentiful data on the work of the Center in the fields of diagnosis, research, education, and advisory services. It should be mentioned that "in its 14 years of operation [1952-1965] the Center has typed 6,642 specimens of epithelium, and provided useful information on the types and subtypes of foot-and-mouth disease virus existing in the Hemisphere" (Zoonoses, Chapter I). The Center has of course been engaged in the preparation and use of vaccines made from inactivated or attenuated virus as well as in studies on virus carriers and food technology, all of which activities are referred to in the REPORT.

The Center is administered by the Pan American Sanitary Bureau and financed by the Technical Cooperation Program of the Organization of American States. Today, it is a veritable *focal point* to which Governments can apply for assistance in connection with the analysis of, and recommendations concerning, the complex biological, ecological, economic, and organizational problems centering round foot-and-mouth disease. The continuous interest and support of OAS from the very start of the Center should be underlined. We feel that the time has arrived substantially to increase the funds necessary to ensure an adequate investment of external capital and of domestic resources, while at the same time stabilizing the financial situation of the Center. In 1965, delicate negotiations were initiated with this aim in view.

THE Technical Discussions of the XVI Meeting of the PAHO Directing Council, XVII Meeting of the WHO Regional Committee, were devoted to "Methods of Improving **Vital and Health Statistics.**" The very fact that this topic was selected shows the interest of the Member Governments in establishing a satisfactory system for obtaining health information in the widest sense of the term. Despite the progress made, statistics in the Latin American countries and the Caribbean Area suffer from important shortcomings in regard to accuracy, completeness, and timeliness of publication. This applies notably to morbidity and mortality rates but also to data

on facilities and services and their performance in the prevention and treatment of disease. Analysis of health activities as a component part of development calls for demographic and socioeconomic information in each country; such data include those concerning nutrition, housing, education, clothing, real income per capita and other relevant facts.

The Technical Discussions were organized and carried on within this frame of reference. A group of 6 distinguished experts analyzed the problem from various angles, stressing those aspects to which the 3 discussion groups into which the participants were split up should pay special attention. All the participants were representatives of Governments to the Directing Council. During the deliberations, the functions and responsibilities of professional workers, technicians, and health auxiliary workers as producers and consumers of statistics were stressed in the light of special characteristics of the problem in the Americas. While reaffirming the role of statistics at all levels, emphasis was given to the importance of full and timely information for administrative purposes for improving principles, establishing standards, and taking the decisions entailed by every preventive or curative action. The bearing of this process on education and training programs and the improvement of statistical systems is evident.

The final report of the Technical Discussions includes a scheme in 4 steps intended to improve vital and health statistics in any country and specific recommendations for each of the branches into which the subject is traditionally divided, as well as for the organization of the respective services, education, and international assistance.

The working papers and the final report are to be found in *PAHO Scientific Publication 127*,⁹ which we feel is of value for all the Governments of the Continent, whatever the stage of development of their statistical services. Statistics have rightly been referred to as the technology of science.

In 1965, two new activities were outstanding in the statistical work: the training of auxiliary statisticians, and the development of plans for education and research on population dynamics. In addition, a hospital statistics training program was begun. Within the context of its usual work, the Organization continued to collect, analyze, and distribute morbidity and mortality statistics as well as to provide advisory services and assistance in education and training. The details of the considerable amount of work done are given in Chapter III of the REPORT.

⁹ Spanish; issued in January 1966. Only the final report, in English, was published in *PAHO Scientific Publication 128*.

WITH reference to **water supply** the REPORT shows that loans approved or signed during 1965 amounted to more than \$93 million (Table 22) or more than double the amount provided by international credit agencies during any other year, with the exception of 1962 (Table 23). The figure, according to the information available, was matched by national funds. Although the amount is an impressive one, an increase in the rate of investment will be needed to attain the sum of \$371 million a year considered necessary to achieve the water supply goals laid down in the Charter of Punta del Este.

A Regional Conference on Water Supplies in the Americas held in October 1965 dealt with "Water, the key to progress and a better life," and was attended by a distinguished group of experts from 14 countries. Its aim was to assess the work done, analyze the methods used, and suggest new lines of action to attain the goals set by the countries of the Continent. The Conference coincided with the First International Symposium on Water Desalinization, cosponsored by the U. S. Departments of State and Interior, the Agency for International Development, and UNESCO, in which scientists and industrialists from 58 countries all over the world participated. The International Hydrological Decade, under the auspices of UNESCO, was also begun. In the latter undertaking, men of science from more than 70 nations are pooling their knowledge and coordinating essential research on climatic conditions, rainfall, ground water levels, measurement of the self-purification power of water, and other subjects.

All these efforts show how understanding of the need to provide present and future generations with water has grown. Clearly there is no barrier which can stop man in his endeavors to dominate nature and increase his well-being. In the Americas, a situation has developed which encourages a comprehensive approach to the water problem, that takes into account the many and complex factors involved. There is a gratifying feeling about what has already been achieved but also an awareness of the magnitude of what still remains to be done. The origin and consequences of the situation are now analyzed with daring rather than with anxiety. The trend of requirements and of possibilities for satisfying them are forecast with a confidence based essentially on the new attitude of the peoples of the Continent and of the Governments. For they have realized that, although water remains a natural product, its supply for human well-being and development calls for the systematic application of knowledge and technology, as well as investments, and that they must contribute towards this undertaking.

During the Conference it became clear from the sta-

tistics of the number of persons who are already benefiting or who will benefit from projects commenced in 1961 that urban water supply is more advanced than had been foreseen in 14 of the 19 Latin American countries that signed the Charter. In the rural communities, on the other hand, only 2 countries had exceeded expectations. The general and justifiable opinion of the participants in the Conference was that, while not decreasing the rate of progress of the urban programs, much more attention should be paid to the rural programs, to those concerning peripheral metropolitan areas, and those of medium-size towns. *PAHO Scientific Publication 132*¹⁰ contains the final report and the working documents of the Conference.

The REPORT deals in detail with the work done by the Governments in 1965 in both the urban and rural communities, and compares it with the data collected since 1961 and the aims of the Alliance for Progress. Advice took on new forms, since it included—in addition to assistance in planning specific projects or in the solution of isolated problems—cooperation in establishing institutions; improvement of the organization and administration of national or local water supply bodies; promotion of the application of the principles of self-help and, in general, of the financial aspects of water supply systems; development of projects which are practicable and acceptable by international credit agencies; and the expansion of education and further training programs, as well as national and regional planning.

The REPORT points out that, up to the end of 1965, approximately \$70 million of outside aid had been advanced in the form of loans, while the local contribution had possibly been about the same. This sum has been devoted to the extension of existing **sewerage** services or the construction of new ones (Chapter I.B). Details are given of the advisory services rendered to various Governments, but it is recognized that the priority given to water supply has led to less being spent on hygienic disposal of sewage, despite the importance of this for the health of the countries of the Continent.

The importance of the problem of **air and water pollution** in Latin America was recognized by the Directing Council at its XVI Meeting which approved Resolution XXXV recommending control activities in the large metropolitan and industrial areas of the Continent, with international assistance when deemed necessary. This Resolution is an encouragement to continue the work the Organization has been performing in recent years, details of which are given in the REPORT. This work is closely related to the occupational health program, which during 1965 was considerably extended, especially in the Latin

¹⁰ Issued in March 1966.

American Institute of Occupational Health and Air Pollution Research. In addition to advisory services, important educational and research projects were carried out, the latter covering exposure to heat and pulmonary function, radioactive contamination of the atmosphere and radiation dosimetry, and effect of gaseous exchange on pulmonary ventilation in silicosis patients.

A consultant on the health aspects of **housing and urbanization** was assigned to the technical missions which the Economic Commission for Latin America makes available to Governments. During 1965 he assisted in drawing up programs for housing and for training of technicians. At the request of the Government, an architect specialized in rural planning and development was appointed to Venezuela. His presence is the result of reports by 3 experts sent to Venezuela in previous years.

Rural society has certain traditional cultural characteristics which must be carefully considered before any attempt is made to improve the living conditions of the inhabitants. Customs cannot be changed by merely improving the physical conditions of the environment. In other words, the introduction of modern methods to promote well-being should not violate traditions, certainly not those that do not imperil and do not directly interfere with the aims pursued. The general approach should be an ecological one, based on persuasion and explanation so as to encourage the inhabitants to take an active part in the establishment of their own institutions and social life. It has rightly been pointed out that, rather than being biological, adaptation is essentially cultural and is founded on behavior.

A distinguished ecologist has defined an *artifact* as "a structural product of animal behavior"¹¹ and he points out that it is a function of the organism rather than a mere physical structure in the environment. This notion applies to human beings insofar as an artifact is the result of the spirit governing the manners and customs of a community and especially its moral, practical, and idealistic attitudes. The institutions and edifices they give rise to reflect behavior in their structure.

These considerations are closely related to the improvement of rural life, and it is essential to approach this problem from a general, holistic viewpoint, based inevitably on the relationship of continuity between attitudes and customs on the one hand, and the environment and its physical content on the other. We believe that centers for the training of experts on rural welfare embodying these ideas should be organized in Latin America. The work of the consultant of the Organization in Venezuela is an attempt at this.

THE EXPERIENCE of recent years justified the evaluation of **nutrition** programs in 1965. In view of the multidisciplinary nature of nutrition it was deemed essential to create a methodology which would include, in a comprehensive manner, health indices, as well as educational and agricultural ones, making it possible to show what had been done and the effects achieved. The planning of nutrition was considered in close relationship to this aim.

Two meetings were held at Headquarters to accomplish these purposes: the first, on evaluation, was held in collaboration with FAO, ILO, UNESCO, UNICEF, and OAS. The corresponding guidelines were drawn up and will, it is hoped, be used to determine the status of, and improve or expand as need be, the applied nutrition programs being carried on in 16 countries and territories with the advice of the Organization. A special technical conference on the formulation of nutrition plans made it possible to lay the foundation for a manual whose contents will help nutrition technicians to determine problems and needs so as to be able to incorporate them in the national health plans.

Mention should be made of the important activities represented by the preliminary studies to organize an institute of nutrition in the Caribbean Area, in collaboration with FAO, and of the nutritional surveys carried on jointly in the Central American countries by the Governments, the Institute of Nutrition of Central America and Panamá, and the Nutrition Department of the Office of International Research of the United States National Institutes of Health. In view of the different variables included, these surveys are real cross-sections of the nutritional status of every country and supply very valuable information for planning to meet the nutritional needs of the countries. During 1965 the survey was carried out in Guatemala and El Salvador, and arrangements went ahead for making the one in Nicaragua at the beginning of 1966.

A seminar on the iodization of salt, attended by industrialists and health technicians from 13 countries of the Continent, made it possible for the first time to establish satisfactory relationships between them which, it is hoped, will encourage programs for the prevention of endemic goiter. As an example of what it is possible to achieve, it may be mentioned that in Guatemala the prevalence of the disease fell to 5% in the space of 5 years.

In Guatemala and Colombia the production and consumption of Incaparina increased by 95% as compared with 1964. Acceptability tests were carried out in the other countries of the Isthmus and in Brazil, in preparation for planning large-scale production. In Panamá and

¹¹ PAHO Scientific Publication 123, p. 6.

Venezuela, marketing trials were commenced. Laboratory work continued in INCAP to improve the stability of this formulation, whose nutrition value has been amply proven. It is not a medicine but a food, and, although it cannot be regarded as a substitute for animal proteins, nevertheless, wherever production of the latter is very much lower than requirements, the use of vegetable proteins with the characteristics found in Incaparina is fully justified. The INCAP investigations have stimulated similar studies in other countries, leading to the preparation of products based on indigenous vegetables with a high protein content.

The studies of INCAP are described in the REPORT. They are devoted to the improvement of food production or to food enrichment; to factors causing the unsatisfactory assimilation of foods because of the condition of the consumer, an example of which is the epidemiology of diarrheal ailments; to nutritional deficiencies existing in the Central American Isthmus, with special attention to practical methods for measuring states of protein depletion; and to the effect of moderate but prolonged deficiencies on the growth and development of children as well as the work capacity of adults. To these must be added investigations on anemia in the undernourished and the mechanism of poor intestinal absorption in children suffering from protein-calorie malnutrition.

Table 26 refers to the 91 fellowship holders who studied various fields of nutrition in INCAP during 1965. The Training Division which was established in 1965 is a real school covering the whole field of nutrition. It was attended by students from a large number of countries all over the world, and it is hoped that this will continue.

The need became evident in 1965 to stabilize the financing of the institute by increasing the contributions of Member Governments and of PAHO. The former agreed to increase their contributions from \$25,000 to \$62,500 annually, as of 1967. For its part, the Directing Council at its XVI Meeting approved an increase of \$200,000, so that the contribution of PAHO from 1966 on will be \$395,000. Both decisions reflect the prestige of INCAP with Governments and in the scientific world as a result of its contribution to our knowledge of malnutrition problems and to their solution. In Resolution XIV, the Directing Council at its XVI Meeting congratulated the countries of Central America and Panamá on having founded the Institute and having supported it throughout the period of organization and development.

Analysis of the problem in Latin America reveals the lack of a national nutrition and food policy based on the present and future needs of the inhabitants of each country. Without such a policy it is impossible to pro-

gram the production, import, and export of the foods necessary to arrive at rational and effective solutions. The most serious consequences are the effects in human beings, who are essential for the development of all these countries. It is along these lines that should be directed the activities of the Ministries of Agriculture, Education and Health, and of other official bodies responsible for the nutrition of the population, as well as voluntary efforts. This policy should, by extension, serve as a basis for the work of the international organizations.

THE Directing Council resolved, by Resolution III of its XV Meeting, that a study should be made of "the incidence and distribution of epilepsy in the Americas, and the legal and other types of discrimination to which sufferers from this condition are subject and which impede programs directed toward the solution of the problem of epilepsy."¹² For this purpose the Organization convened a group of experts¹³ to consider the appropriateness of epidemiological studies of **mental illness** in Latin America in the light of the possibility of using uniform nomenclature and definitions as well as standardized techniques, the value of transcultural studies in one country and in several countries, and criteria for establishing priorities in epidemiological research. Special attention was paid to the problem of epilepsy.

In opening the meetings of that group, I mentioned that "we are conscious of the difficulties of carrying out epidemiological investigations in the field of mental health, difficulties associated with the selection of population samples, the methods for distinguishing between the factors governing each condition and the definition and classification of mental disease." The empirical character of modern psychiatry is due in large measure to the fact that there is no general agreement concerning the nature of the findings, the manner of recording and presenting them, and the definition and classification of what is regarded as pathological. In the absence of precise causes for identifying morbid conditions, the epidemiological method has proved to be a very valuable instrument and there is notable evidence of this in the history of medicine.

The report reviews the aims of the meeting and gives definite recommendations in regard to each of them. Special attention is paid to the problem of epilepsy, and various stages of epidemiological investigation are sug-

¹² PAHO Official Document 58.

¹³ Washington, D.C., 29 March-3 April 1966.

gested on the basis of provisional definitions. The experts stressed the need to improve communications between specialists by reviewing the terms in use in psychopathology. They pointed out that whatever the conceptual and methodological approach adopted, it should employ operational definitions so that the meaning of the terms used was unambiguous and reproducible by other investigators. From this viewpoint they considered the empirical descriptive method, centered principally on symptomatic criterion for mental disorders, and the hypothetic-deductive method, related to psychopathological structural and pathogenic hypotheses about mental disorder.

Investigations based on the recommendations of the meeting commenced in Chile, while others connected with the epidemiology of mental illness continued in Argentina. The REPORT also describes other advisory activities of the Mental Health Information Center on Latin America.

At its XVI Meeting, the Directing Council in Resolution XL, considered the document submitted by the Pan American Sanitary Bureau and decided that a program of epidemiological research on epilepsy be developed and the study of the legal and social aspects of the disease be continued.

AMONG dental health activities we should like to stress two because of their significance for the Continent. In Venezuela, the Organization advised the Government in preparing a comprehensive dental care plan, covering dental problems, human and institutional resources, and training. The study will serve as a basis for a national policy of dental education and practice, and for establishing methods which can be applied, making allowance for local characteristics and conditions, to other countries.

In Colombia, 2 consultants cooperated with national technicians in order to incorporate dental problems in a study on health manpower.

The general dental health program of the Organization is oriented towards those aspects which are of national or regional importance, such as the ones mentioned, and others referred to in the REPORT. These activities supplement the work of previous years and are intended, by means of seminars and direct assistance, to extend the scope of training by introducing the principles and techniques of prevention and comprehensive treatment, and to improve the services, both quantitatively and qualitatively, as well as their structure and organization. Gener-

ous contributions have been made by the W. K. Kellogg Foundation for the activities.

As regards radiation hazards, the lack of protection against X-rays in the hospitals of Latin America constitutes a serious risk to the health of professional and auxiliary staff working in the services concerned, as well as to the health of the patients. In 1965 a radiation physicist joined the staff of the Organization and advised 9 countries on the establishment of protection programs and on the training of personnel for the same purpose. Furthermore, the Institute of Occupational Health and Air Pollution Research continued its research on X-ray dosimetry.

Samples were sent from the 6 stations set up to study radioactive contamination of the air for analysis by the United States Public Health Service Laboratories in Rockville, Maryland, and Montgomery, Alabama. Two of the stations are also collaborating in the examination of milk samples. The Organization is coordinating these investigations as part of its general work on radiation and isotopes.

A new edition of *Las radiaciones ionizantes y sus efectos en la poblacion*¹⁴ was published in view of the continuing demand for this manual.

IN compliance with Resolutions XXV and XL of the XV Meeting of the PAHO Directing Council, XVI Meeting of the WHO Regional Committee, 2 study groups were convened: one on the Planning of Hospitals and Other Health Facilities, and the second on the Coordination of Medical Care in Latin America. The latter was convened jointly with OAS, thus symbolizing the complex nature of the problem as well as its economic and social importance for the whole Continent.

For the purposes of the discussion, coordination was taken to cover all the medical-care services available in a country, regardless of the institution providing them. By reasons of its mere extent, the question must center on the Ministries of Health and the Social Security Services. Although lack of coordination was recognized, the experts' appraisal was a positive one, guided as they were by the community well-being and social welfare. They felt that the causes of this lack of coordination were not only the conventional ones, arising from the absence

¹⁴ PAHO Scientific Publication 34.

of a precise legal definition of the field of action of each institution, but that it also had deeper roots connected with the economic and social characteristics of the developing countries. In order to make it easier for the State to fulfill its obligation to provide health care for the whole community, as far as possible, the group recommended integrated planning with the participation of all public and private bodies responsible for the prevention and treatment of disease. As a preliminary step, it suggested a survey to collect information on available facilities, their cost, and their utilization by the population having access to them.

The first group dealt with the problem of the planning of hospitals and other establishments at the continental level, including their construction, equipment, and satisfactory functioning so as to fulfill the real need of the inhabitants. It was recognized that the present number of beds available for both acute and chronic disease cases is less than required, no matter what index is used to measure them. On the other hand, they are not put to proper use because of inadequate organization and administration of the services. Although the domestic funds now being invested are enormous, there is a need for outside capital, which is justified by the social nature of this investment and its importance for the economy. The group agreed on all these points, and its opinion was supported by distinguished representatives of the Inter-American Development Bank, who expressed the interest of that body in programs concerning health care and medical care in Latin America.

The group recommended that the Pan American Sanitary Bureau strengthen and expand its present organization, so as to be able to advise Governments on: planning and organization; administration of hospitals and other health services; study of manpower needs; costs and financing of the various systems, including the participation of social security institutions; finally, the incorporation of modern concepts of patient care into the curricula of medical schools. To carry out these functions the group suggested that a branch be set up and that working relations be maintained with the organizations of the Inter-American System, the United Nations agencies, and the Inter-American Development Bank.

At its XVI Meeting, the Directing Council took note of the reports of both groups and approved Resolution XXIX, on coordination of services and programs of Ministries of Health and Social Security institutions, and Resolution XXXVII, relating to planning of hospitals and other health facilities. In these Resolutions the Directing Council adopted the recommendations of both groups and gave instructions to the Secretariat on how

they were to be put into practice. As a sign of its interest in this problem, the Directing Council selected the following topic for the Technical Discussions of the XVII Pan American Sanitary Conference, XVIII Meeting of the Regional Committee of WHO for the Americas: "Means for Promoting and Making Effective the Coordination between the Services and Programs of Ministries of Health, Social Security Institutes, and Other Institutions that Conduct Activities Related to Health."

Administration of Medical Care Services: New elements for the formulation of a continental policy,¹⁵ contains the working papers and reports of both study groups and adds to the ideas and methods expounded in previous documents concerning this problem.

The REPORT summarizes the assistance to programs implemented in 1965 in a number of countries and territories.

In 1965 the number of **general health projects** had risen to 31 in 27 countries or territories and their aims had been extended, from the initial demonstration areas, to programs at the national level in 20 countries or territories, while those in the other 7 were of a regional character.

The integration of prevention and cure, regionalization of the services, and continuing education are accepted as a basis for the organization and administration of the services. It must be recognized that application of these principles is not uniform and the tendency is still for dissociated action to prevail within each country and each institution. This question is continuing to stimulate extensive assistance to Governments, which is facilitated by the formulation of health plans with measurable objectives. This does not mean that there has been no sustained progress in improving structures, methods, and practices. Because of the wide range of functions now being performed by the Ministries of Health of the Americas the advisory assistance of the Organization has been very varied, as is shown in the REPORT in Chapter II, General Services and Specific Programs.

In this connection we would again emphasize that all phases of disease control and eradication activities should proceed jointly with those of the local health services, since such activities are not mutually exclusive, but, on the contrary, complementary. Similarly, it is essential to increase the coverage of the rural areas by minimal units, particularly in those areas where communicable diseases are very prevalent. As we have pointed out on other oc-

¹⁵ PAHO Scientific Publication 129. Issued in June 1966.

casions, there can be no antagonism between *vertical and horizontal approaches* in the development of health programs; rather should they be coordinated, in view of the fact that both systems are applied in accordance with the special features of each problem and of the society in which it occurs, as well as the available resources. Social well-being should be the dominant factor in deciding what should be done in each particular situation.

As is pointed out in Chapter III, on Education and Training, the problem posed by the lack of adequate **nursing services**, because of its very nature, is possibly the most serious one in regard to the number of professional and auxiliary workers, as compared with the numbers available of other health technicians, for all immediate care given to human beings requires the direct or indirect presence of a graduate nurse or an auxiliary. In addition to nursing, the nurse must give basic health instruction. As we have repeatedly said, if each act of health care does not impart knowledge which can be spread to others by the beneficiaries, then the fate of the nursing services will remain very uncertain and the number of personnel required will increase beyond any reasonable national budgetary possibilities.

In 1965 the Organization made an analysis of nursing activities with the aim of incorporating the pertinent principles and methods into planning. As we have pointed out, the lack of human resources in relation to needs is obvious. This fact calls for a review of the techniques employed and a search for new, more efficient ones, in accordance with health problem priorities, followed by incorporation of the findings in nursing education. This explains the importance of improving the administration and organization of the services, personnel supervision, and the training of auxiliaries. Bearing this in mind, during 1965 assistance was provided through 18 nursing advisers assigned to projects within countries, 6 assigned to Zone Offices, and 1 nurse-midwife assigned to give advice on an intercountry basis. To these must be added 9 short-term nursing consultants. The REPORT shows the variety of the work carried on, which was guided in general by the considerations set out above.

IMPORTANT health planning work was carried out in 1965. It took the form of advisory assistance to 13 countries in various stages of the process of formulating or implementing their national plan, as well as of courses organized for officials from 8 Governments, re-

sponsible for collecting information for the diagnosis of problems and resources as well as for preparing and implementing the respective programs. The Fourth International Course was organized in conjunction with the Latin American Institute for Economic and Social Planning and was attended by 29 health administration technicians. The Third International English-Language Course was held at the Johns Hopkins University and attended by 25 officials, among them 6 WHO staff members. The faculty included 1 staff member of the Organization.

By the middle of 1965, 16 countries had Health Planning Units in operation—11 had reached the diagnosis stage; and 11 had already formulated plans, 4 of them in accordance with the method proposed by the Organization and the Center for Development Studies.¹⁶ In 8 countries, activities commenced in accordance with plans approved and in 12 a program budget had been drawn up.

Despite the progress, planning must be organized in each country as a continuous process of evaluation and harmonization of objectives with resources, population increase, and changes in the problems involved. It is in this way that we interpret the pertinent resolutions of the Directing Council, among them Resolution XX, approved at the XVI Meeting. This aim is shown by the recommendations to study the advances that would accrue from the establishment of a Pan American Health Planning Center, which would act as a focal point for health planning activities in the Hemisphere, and to explore all possible sources of financial assistance for the Center. The corresponding project has been prepared.

The above-mentioned Resolution points out the need "to promote research for the improvement of planning theory and practice and the international exchange of research findings." Experience acquired in this field during the last 4 years has been very valuable for singling out those aspects of health planning which require operational studies in order to improve or change the method in use.

The Organization was represented at the meetings of the Inter-American Committee of the Alliance for Progress (CIAP), held with the aim of reviewing the investment programs of each Government in regard to both domestic resources and outside capital. These discussions also bore, to some extent, on the social sector, including health. All forms of assistance to Governments were examined, so as to determine those annual activities and services for which international funds are

¹⁶ Central University of Venezuela.

indispensable. As is known, these reviews, sponsored by CIAP, are made with the participation of representatives of the chief international credit agencies.

THE Organization continued in 1965 to give assistance in **administrative methods and practices**—by means of advisory services, seminars, and training. Noteworthy in this connection was the decision of the Ministry of Health and Housing of Trinidad and Tobago to reorganize its Services as a prelude to health planning. In addition to giving results directly benefiting the Government concerned, this methodological approach to planning could be of value to other countries. Three consultants—specialized in fiscal, personnel, and supply problems—worked in close cooperation with the planning expert.

The Second Seminar on the Organization and Administration of Health Services in the Caribbean was held in November, in Port-of-Spain, Trinidad, and in December the Second Seminar on the same subject for the countries of South America was held in Buenos Aires, Argentina. Both seminars made a detailed analysis of the role of administration and its various subdivisions in the formulation of health plans.

The REPORT gives details of advisory services extended to other Governments in both general and specific fields, including malaria and sanitation, and of the international courses, one of them held in Santiago, Chile, sponsored by the University of Chile, the National Health Service and the Organization, and the other held in San José, Costa Rica, by the Central American School of Higher Education in Public Administration, with assistance from advisers provided by the Organization.

THE problem of the quality of drugs was specially considered by the Eighteenth World Health Assembly¹⁷ and its Resolution WHA18.36 served as a basis for Resolution XII of the XVI Meeting of the PAHO Directing Council on **quality control of pharmaceutical preparations**. The Council had before it the report of a special consultant, recommending the setting up of an International Laboratory for the Analysis of Pharmaceutical Products, which would also serve as a training and research reference center in this field for the Member Countries. In 1965, studies concerning the establishment of such a center were begun.

¹⁷ Geneva, Switzerland; 4-21 May 1965.

At the X Meeting of Ministers of Health of Central America and Panamá, held in Panamá City in August 1965, 320 **health standards for food products** exchangeable through the Central American Common Market were approved. These are in addition to 80 drawn up previously, thanks to the assistance of the Adolfo Lutz Institute, São Paulo, Brazil. To examine these standards a Seminar on Food and Drug Control for the countries of the Central American Isthmus was held in Guatemala City. The participants also considered the report of a consultant on Minimum Standards for Departments of Food and Drug Registration at Health Ministries. So as to cover all aspects of the complex process of control and registration, the Ministers agreed that INCAP should set up a Division to act as a reference laboratory for foods appearing on the Common Market lists. As regards the control of drugs, they decided that the laboratories of the University of Panamá should act at the regional level. The Organization has given these laboratories advisory help from the outset. Furthermore, during the year, the Governments of Argentina and Chile were given assistance in improving their services for the control of drugs and pharmaceutical preparations.

IMPORTANT work was also carried out in connection with **public health laboratories**, such as the adoption of techniques for the diagnosis of communicable diseases, the examination of products of public health significance, laboratory organization, administration, training of technicians, the preparation of biological products, and the distribution of reference antigens and antisera. The details of all these programs, and the countries where they were carried out, are given in the REPORT.

AS PART of its **education and training program**, during 1965, the Organization awarded 103 fellowships for advanced training to faculty members of 43 **schools of medicine**, and 25 consultants and 2 staff members provided advisory services in 28 medical schools and 6 national associations of medical schools in 18 countries. This assistance covered the improvement of the curriculum in a specific branch of medical teaching, the inclusion of a new subject, or the complete modernization of the curriculum in a specific branch of medical teaching. Assistance was also given in the integration of the teaching of preventive and social medicine, the development of laboratory and library services, research activities,

and the introduction of medical pedagogy. The latter aspect merits attention because, in the last two decades, there has been increasing interest in the science and art of teaching. It has been realized that the process of learning, whatever its biological or psychological nature may be, warrants special consideration to ensure that educational aims are fulfilled. In other words, it has been found that teaching is not synonymous with learning and that the transmission of ideas, of knowledge and techniques, apart from calling for specific methods, represents essentially a form of human relationship between teacher and students. To express these ideas on the subject, Dr. Edward M. Bridge, who has acted as consultant to the Organization, used the term *medical pedagogy*, in the book of the same title. In continuation of his work during previous years, he conducted in 1965, at the Universities of Venezuela and El Salvador, veritable seminars on the science and art of teaching as applied to medicine.

Among all the activities which took place, we should like to mention also the study of **health manpower** and medical education, which commenced in 1965 for a period of 2 years and is sponsored by the Government of Colombia, the Colombian Association of Medical Schools, the Milbank Memorial Fund, and our Organization. In addition to the information it is hoped to collect, which will be of enormous value for the health programs of the country and for revision of the curriculum, a methodology will be developed that can be used in other countries of the Continent.

At its XVI Meeting, the Directing Council recognized the **Pan American Federation of Associations of Medical Schools** as a nongovernmental organization and authorized the PASB to develop with it cooperative activities of mutual interests aimed at strengthening medical education programs in the Americas.

"The Teaching of Epidemiology at **Schools of Public Health**" was the topic discussed by the IV biennial Conference of the public health schools of Latin America. The deans and professors concerned reported and discussed the situation in this field. Without good epidemiology there can be no efficient health planning and therefore no systematic campaigns for gradually overcoming the health problems most frequently encountered. This statement applies to epidemiology whether it is regarded as an analytical, inductive, speculative science or is used for the measurement of resources or evaluation of programs. For all organized activities for the protection, promotion and restoration of health must, in the final analysis, be based on epidemiological principles. We agree with Morris when he says that "epidemiology is

today the Cinderella of the medical sciences" and that "the proposition must be advanced that public health needs more epidemiology; so does medicine in general, and, it may be said, society at large."¹⁸ In our time this still applies to the countries of the Americas, since the task they have set themselves for the immediate future calls for a knowledge of things as they are and not as we would like them to be, a knowledge expressed in objective and not idealistic terms, applicable to concrete activities for the well-being and social progress of the peoples. In the field of health this will be all the more obtainable, the better the training of the technicians, particularly those who have now assumed, and will assume in the future, the major responsibilities.

During 1965, various types of advisory assistance were given to the public health schools of the Hemisphere, as is explained in the REPORT.

The Organization collaborated in 25 **nursing education** projects. This included projects at the basic and advanced levels, as well as others for the training of auxiliaries, and covered 14 countries and 2 Territories. Assistance to other Latin American countries took the form of advisory services, the award of fellowships, distribution of literature in Spanish, and participation in seminars. These activities were carried out by 15 nursing educators and 6 short-term consultants.

The most serious shortage of human resources for health activities is that existing in the field of nursing. In Central and South America there are approximately half as many graduate nurses per 10,000 inhabitants as there are doctors. This fact indicates the serious nature of the position, and, apart from revealing the need for a much larger number of nurses, justifies the use of auxiliaries, particularly in the rural areas. According to the available information, in South America only 25% of nursing auxiliaries have been trained for their work, a figure which reaches 49% in Central America. The total number in the Region is 135,000, which is nearly the same as that of physicians. This illustrates our statement regarding the enormous lack of nursing personnel.

In 1965 the Organization took the first steps towards applying the technique, known as *programed instruction*, which is a process of self-training by means of texts and materials prepared specifically for the purpose. A workshop on programed instruction held at Columbia University, New York, was attended by 5 nursing education advisers and 10 nurse educators coming from 8 countries. The group discussed the methods of this teaching technique and its application to the training of nursing

¹⁸ Morris, J. N. *Uses of Epidemiology*. E. and S. Livingstone, Ltd., Edinburgh and London, 1957.

auxiliaries. It is hoped that in coming years instructors will be able to deal with a much larger number of students, since the latter will be able to increase their knowledge by their own efforts.

Several intensive courses were organized for graduate midwives and others were arranged for lay midwives in various countries. In Brazil a seminar attended by nurses, nurse-midwives, and midwives examined the role of each group in the maternal care program of the country.

The outstanding advances made in the Americas in water supply as well as in other fields concerned with improvement of the physical environment have made very evident the shortage of experts in the various branches of environmental sanitation. For this reason, the Organization gave considerable assistance in this field during 1965 to **schools of engineering** in the Hemisphere. There were 25 programs underway, 18 of which commenced during the year. These programs were aimed at improving teaching methods and at promoting the continuing education of graduates. In this latter connection, mention must be made of the 40 intensive and specialized courses held in 16 countries and attended by some 1,000 technicians, the great majority of them engineers. The subjects were chosen by the engineering schools, in consultation with governmental agencies and other interested institutions, and included water supply, housing, solid waste disposal, industrial hygiene, food inspection, and maintenance of hospital equipment, among other topics. A manual was prepared for each course and distributed, constituting a means of communication between the universities and the corresponding government agencies. This education program made use of 35 consultants who came from 11 countries, thus representing a real interchange of experts.

Part of this huge educational program is being carried on by the Superintendency of Urbanization and Sanitation (SURSAN), an authority of the state of Guanabara, Brazil. The aim is to provide a center for research, for giving technical advice to government agencies, and for informational and educational activities. This project is being financed by the state and the United Nations Special Fund, with our Organization acting as executive agency of the latter. Of the same nature is the project in Venezuela, in which the engineering schools of 4 universities are cooperating. Details of the work of the Organization in both centers, as well as in sanitary engineering, will be found in the REPORT.

In Latin America there is 1 veterinarian to every 58,000 animals, whereas the corresponding ratio in North America is 1 to 9,600. When it is remembered that preventable diseases, such as foot-and-mouth disease,

brucellosis, bovine tuberculosis, and paralytic rabies cause the loss in Latin America of more than \$500 million annually, with serious effects on the economy of these countries, the importance of introducing the ideas and techniques of preventive medicine at all levels in the teaching of veterinary medicine will be realized. There are 43 **schools of veterinary medicine** in Latin America, 8 of which were established in the last 2 years. The Organization assisted in the planning of some of them and will continue to cooperate in their development as part of the efforts to improve teaching in the Americas. Brief details of this assistance are given in the REPORT and include the important work being done by the Pan American Zoonoses Center and the Foot-and-Mouth Disease Center.

In 1965, some 125 courses provided training for more than 4,000 health personnel, both professional and auxiliary, with the advice of consultants and other personnel from the Organization. The chapter on Education and Training includes details of the type, duration, and content of these courses as well as the number of students in the various specialties. Mention is also made of advanced training programs, both of an academic nature and in the form of seminars, in a number of branches.

THE total number of **fellowships** awarded in 1965 rose to 830, an increase of 29.9% over the 639 awarded in 1964. The average duration of the fellowships was 5 months, which may be regarded as very satisfactory in view of the size of the program. Actually, 1,325 applications from the Americas were considered, and 243 of them were transferred to 1966. In addition, 296 applications for fellowships for professional workers were received from other Regional Offices of WHO. In regard to the fields of study, the largest increases concerned communicable diseases and the organization of health services, with the latter including planning, medical education, and related sciences. It is interesting to note that 52% of all the fellows attended courses organized or sponsored by our Organization.

To the large number of fellows considered above must be added those who commenced their studies in 1964 and completed them in 1965, which raises the total number to 1,054 as compared with 962 in 1964. The program for each fellow had to be arranged in one or more institutions or services, and their allowances and traveling expenses had to be taken care of throughout their period of training. As in previous years, assistance was given to the Organization of American States, for which

244 requests for fellowships were processed, and to the Government of Venezuela by assisting in the training of 69 fellows. Finally, during 1965 the fellowship program was evaluated in 2 countries of the Americas on the basis of a representative sample, and it was shown that the majority of former fellows were holding posts connected with the studies they had made.

In stressing the increasing importance assigned to this aspect of our activities, we should like to express our conviction that it is one of the most effective means for promoting individual and collective health as well as improving teaching methods and practices, and that the progress seen in the Americas is closely related to the presence of those who were afforded opportunities to improve their training and qualifications.

THE inter-relationship of health, population, and development was a subject to which the Organization devoted its attention in 1965. In 1964, the Directing Council, at its XV Meeting, had approved Resolution XXXI, recommending studies on medical demography, epidemiology, and human reproduction in relation to socioeconomic development. The Second Conference on Population Dynamics, convened in January 1965, was attended by representatives of public and private organizations in the United States which were assisting programs in the Americas. The activities underway dealing with family planning and research on various aspects of the reproductive process were considered. It was agreed that it was important to set up a system for the collection and processing of all useful information, for dissemination to the participating Governments and institutions. It was suggested that the Pan American Sanitary Bureau should be responsible for this. The Conference also recommended the establishment of research training centers concerning population dynamics and health, and during 1965 the Organization developed plans for the establishment of such centers at the School of Hygiene and Public Health of the University of São Paulo, Brazil, and the School of Public Health of the University of Chile.

In considering this problem, the Eighteenth World Health Assembly based its discussions on the report of the Director-General on "Program activities in the health aspects of world population which might be developed by WHO".¹⁹ This document surveys the problems that must be solved in order to fill the large gaps which exist in our knowledge of the biology of reproduction and the

medical aspects of fertility control. Various lines of research in this connection are suggested.

While approving the Director-General's report, in Resolution WHO18.49,²⁰ the World Health Assembly accepted that "it is not the responsibility of WHO to endorse or promote any particular population policy" and that "it is a matter for national administrations to decide whether and to what extent they should support the provision of information and services to their people on the health aspects of human reproduction." In regard to advisory services, the Assembly decided that such services should be "related, within the responsibilities of WHO, to technical advice on the health aspects of human reproduction and should not involve operational activities."

At its third meeting, in June 1964, the PAHO Advisory Committee on Medical Research recommended systematic studies on population dynamics, covering the various factors which have influenced population growth or decline in the past. These studies, the Committee felt, should be linked with epidemiological investigation of problems of immediate importance, such as the improvement of maternal and child care, town-planning, and natural resources.

While reaffirming the principles of Resolution WHA 18.49, the PAHO Directing Council, in Resolution IX, approved at the XVI Meeting, requested of the Secretariat to "cooperate with the Inter-American Committee of the Alliance for Progress in studies assigned to it by Section 1, paragraph 16, of the progress report on the Alliance (adopted at the Third Annual Meeting of IA-ECOSOC at the Ministerial Level).

The number of children in a family has for centuries been controlled by various methods, depending on social customs and culture, in different periods. The decision in this respect has been taken by individual families, since there has been no national policy on population growth, merely prohibition of a number of practices, especially abortion, except in certain closely specified circumstances. The possibility is now being discussed, and this has given rise to the Resolutions mentioned above, of establishing such a policy and defining the responsibility of Governments and voluntary organizations. It has been pointed out that there are large gaps in our knowledge of the complex process of human reproduction and that the biological, psychological, economic and cultural implications should be investigated in order to facilitate the decisions of every family and every society. We believe that these studies, and particularly the uses made of their results, should be the

¹⁹ *Wld Hlth Org.* A18/P&B/4, 27 April 1965.

²⁰ *Off. Rec. Wld Hlth Org.* 143, p. 35.

responsibility of Health Services, for, by the very nature of their functions, these are the social organs in most continued contact with persons, families, and communities. They are therefore in a position to initiate the delicate and essential process of motivation which will lead to conscious and firm decisions. Clearly, education, regarded as the ability to form a judgment, is essential for such motivation; it is also essential to give everyone an opportunity to explain his problems and to understand the solutions at his disposal.

FROM an examination of the report of the fourth annual meeting of the PAHO Advisory Committee on **Medical Research**, held in Washington, D.C., in June 1965, it can be deduced that research is gradually tending to become institutionalized in PAHO. The various studies in progress, which deal primarily with health problems of importance to the Americas, support this statement. Closely linked to these studies are the professional training programs which contribute, in good measure, to the promotion of scientific research. As a result, the finding of good *centers for teaching* purposes and their extension is one of the responsibilities assigned to the Organization. Some of these centers are in full activity and are mentioned in the REPORT.

Among the studies of a general nature we should like to make special mention of the inter-American investigation on mortality; the determination of health manpower; and the studies on nutrition, the zoonoses, foot-and-mouth disease, and anemia.

The Committee paid particular attention to the report of a Study Group on Science Policy in Latin America.²¹ We feel its contents—substance, structures, and processes—are of great value to all those interested in the advance of science. Its recommendations include extremely concrete ones, such as setting as a goal the investment in research of 0.5 to 1% of the gross national product, depending on the relative wealth of the nation; and more abstract ones, such as the expansion of the international *intellectual common market*, building upon the excellent steps already taken. All these recommendations as well as the document as a whole, are worthy of consideration by universities, Governments, and private institutions.

The special session of the Committee dealt with "Deprivation in Psychobiological Development," a problem which was considered in relation to the learning process, nutrition, and psychosocial and cultural influences. The

²¹ PAHO Scientific Publication 119.

communications of the participants, as well as the comments, form part of *PAHO Scientific Publication 134*, which is an excellent contribution to our knowledge in this field. Although any generalization concerning such a complex problem is dangerous, it would seem to follow from the ideas put forward that the retarding effects of deprivation are at their peak in childhood, so that our efforts to prevent or limit the causative factors should be concentrated on the children. Of course, this viewpoint is not accepted by all research workers, but it seems reasonable to agree, as was pointed out during the meeting, that young organisms are generally more adaptable than older ones.

THE *Boletín de la Oficina Sanitaria Panamericana* completed its 44th year of unbroken publication. We feel it safe to say that the journal has a larger circulation than any other Spanish-language publication dealing with health and that its contents have made it a real forum for transmitting the experience of experts in this field. The average monthly pressrun was 11,000 and this shows how wide is its circulation, for it is distributed to a large number of institutions. The increasing number of original articles, amounting to some 70% of the total published during the year, is an indication of how the experience of health technicians in Latin America is increasing, as well as their desire to share it and the value they attribute to the *Boletín* for this purpose.

The Organization issued a total of 39 publications during the year and a list of them appears in the REPORT. It is gratifying to observe that some of them are in their second edition.

The official opening of the new Headquarters building gave rise to great activity on the part of the Public Information Office, which kept in close touch with radio and television systems, as well as with the press and other bodies. The publicity resulting from all this work was sober, informative, and of high quality.

THERE was intense activity by the administrative departments and units. The staff members responsible for matters relating to the construction of the new building saw their efforts reach their culmination. Indicative of the efficiency of their work is the fact that all the staff were installed in the Headquarters building 23 months after the ceremony at which the first stone was laid. Furthermore, throughout the course of building opera-

tions no obstacles or problems of any importance were encountered. Our thanks are due to the architect, Mr. Román Fresnedo Siri, to the firm of architects Justement, Elam, Callmer & Kidd, and to the building contractors, the American Construction Co., above all to its President, Mr. William Finglass.

The goal of administrative rationalization was reached in 1965, and this has brought with it savings and increased efficiency. Application of electronic techniques to certain administrative activities continued and the extension of these modern methods to other fields likely to benefit thereby was studied.

The total staff strength of the Organization on 31 December 1965 was 1,033, or 126 more than in 1964. Of the regular staff members, 249 were stationed at Headquarters and 727 in the field. During 1965, 684 persons were appointed, two thirds of them being highly specialized short-term consultants who worked on specific problems of interest to the Governments.

The REPORT gives details of the financial position of the Pan American Health Organization, which is sound, thanks to the application of long-range policies on expenditure, the Working Capital Fund and reserves for terminal costs. The 1965 income from all sources was 100.91% of the appropriations authorized in the regular budget. The funds obligated amounted to 99.99% of those authorized in the budget.

At the end of the year, 5 countries were in arrears in excess of 2 years; most of them have adopted a plan for payment of their arrears within a definite period.

The administration of the general activities of the Organization was greatly facilitated by the system of *program budgeting* which is further improving as more experience is acquired.

RELATIONS with the Organization of American States and its various agencies, as well as with the organizations of the United Nations family, through WHO Headquarters, were made more effective thanks to the work of the Liaison Office set up in 1964 for this purpose. Particular attention was paid to projects financed with outside capital provided by the IADB. The same spirit of mutual understanding and cooperation was shown in the already traditional relations with the W. K. Kellogg Foundation, the Milbank Memorial Fund, the Rockefeller Foundation, the Nutrition Foundation, the Williams Waterman Fund, and others. In this connection, special mention must be made of the United States Agency for International Development, whose voluntary contributions have made it possible to carry out some very important programs, such as those for malaria eradication and for water supply. A considerable number of research projects were financed by the National Institutes of Health of the United States Public Health Service.

We share with all these institutions the common aim of improving the social well-being of the Americas. On this basis, joint work and complementary activities have been carried on, and financial aid given, under the best possible conditions.

“**EXPERT** knowledge, however indispensable, is no substitute for a generous and comprehending outlook upon the human story with all its sadness and with all its unquenchable hope.”²² Churchill’s words could not have described more aptly the principles and substance of health care and its social and spiritual implications.

²² Churchill, Winston. Speech delivered at the University of Miami, Miami, Florida, on 26 February 1946.

I. PROTECTION OF HEALTH

A. ERADICATION OR CONTROL OF DISEASES

MALARIA

Significant steps were taken toward eliminating hindrances which have been hampering the progress of malaria campaigns in many countries of the Hemisphere. In many programs, activities were primarily devoted to the making of essential preparations for hard-hitting, thorough campaigns on a scale greatly superior to that previously carried out. Technical, financial, and administrative steps were taken to bring programs to levels from which full-scale attack on transmission and adequate protection of regions in consolidation phase can be put into operation in 1966. But not all programs shared in this preparatory surge; some continued to be under-financed or poorly organized and unable to make satisfactory gains, others continued progressing at a moderate rate (Figure 1 and Table 1).

The countries extending from México to Panamá—most beset by technical problems of insecticide resistance, excito-repellency, and behavioral difficulties of vector anophelines—made major advances toward finding solutions to their most difficult problems: financing and coordination.

In order to insure complete coverage of areas of persistent transmission, using combined attack measures, and at the same time provide adequate protection of cleared areas already in the consolidation phase, the Government of México announced, in March, the approval of a 6-year malaria eradication budget at the level requested by the program. New professionals were trained and large numbers of field staff were re-trained for their responsibilities in connection with the augmented attack and evaluation activities planned for 1966. With this prospect, the program was reorganized to permit closer control over smaller unit areas.

The Central American countries and Panamá sought external sources to solve their financing problems. Loans

to cover up to 50% of local costs over the next 3 years (1966-1968) were negotiated or were in process of negotiation with the Agency for International Development (AID) of the United States of America, to permit, for the first time, adequate attack tailored to suit the needs of individual districts and striking at several points in the chain of malaria transmission.

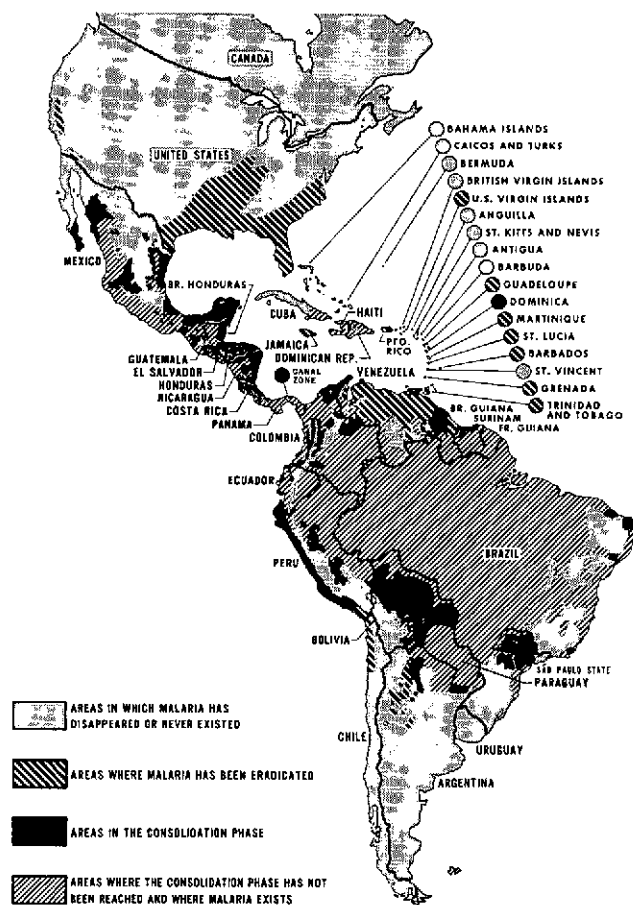


FIG. 1. STATUS OF MALARIA ERADICATION IN THE AMERICAS, DECEMBER 1965.

TABLE 1. STATUS OF MALARIA ERADICATION IN THE AMERICAS, BY POPULATION, 1965
Population in thousands ^a

Country or other political unit	Total population of country or other political unit	Population in areas where malaria was never indigenous or disappeared naturally	Population in originally malarious areas				
			Total	Eradication claimed	Consolidation phase	Attack phase	Preparatory phase or program not begun
Argentina.....	21,860	19,072	2,788	1,356	449	783	200
Bolivia.....	4,373	2,985	1,387	—	1,173	214	—
Brazil.....	80,932	50,271	30,661	—	10,469	10,270	9,922
Canada.....	19,571	19,571	—	—	—	—	—
Chile.....	8,656	8,555	101	101	—	—	—
Colombia.....	17,872	8,579	9,293	—	7,071	2,017	205 ^b
Costa Rica.....	1,438	997	441	—	263	178	—
Cuba.....	7,390	5,094	2,296	—	—	2,296	—
Dominican Republic.....	3,573	643	2,930	—	346	2,584	—
Ecuador.....	4,957	2,265	2,692	—	1,288	1,404	—
El Salvador.....	2,918	467	2,451	—	—	2,451 ^c	—
Guatemala.....	4,411	2,467	1,944	—	887	1,057	—
Haiti.....	4,500	1,000	3,500	—	—	3,500	—
Honduras.....	2,122	271	1,851	—	1,518	333	—
Jamaica.....	1,791	359	1,432	1,432	—	—	—
México.....	40,707	20,222	20,485	—	12,995	7,490	—
Nicaragua.....	1,783	70	1,713	—	730	983 ^d	—
Panamá.....	1,244	50	1,194	—	—	1,194	—
Paraguay.....	2,144	363	1,781	—	—	—	1,781
Perú.....	11,107	7,228	3,879	46	2,334	1,499	—
Trinidad and Tobago.....	990	144	846	846	—	—	—
United States of America.....	194,300	147,200	47,100	47,100	—	—	—
Uruguay.....	2,715	2,715	—	—	—	—	—
Venezuela.....	8,579	2,177	6,402	6,028	132	242	—
Antigua.....	63	63	—	—	—	—	—
Bahamas.....	140	140	—	—	—	—	—
Barbados.....	245	4	241	241	—	—	—
Bermuda.....	49	49	—	—	—	—	—
British Guiana ^e	638	—	638	602	26	10	—
British Honduras.....	105	—	105	—	105	—	—
Dominica.....	64	49	15	—	15	—	—
Falkland Islands.....	2	2	—	—	—	—	—
French Guiana.....	38	—	38	24	11	3	—
Grenada and Carriacou.....	95	63	32	32	—	—	—
Guadeloupe.....	300	33	267	267	—	—	—
Martinique.....	319	121	198	198	—	—	—
Montserrat.....	13	13	—	—	—	—	—
Netherlands Antilles.....	210	210	—	—	—	—	—
Panama Canal Zone.....	50	—	50	—	49	1	—
Puerto Rico.....	2,626	54	2,572	2,572	—	—	—
St. Kitts, Nevis, Anguilla.....	63	63	—	—	—	—	—
St. Lucia.....	102	15	87	87	—	—	—
St. Pierre and Miquelon.....	5	5	—	—	—	—	—
St. Vincent.....	88	88	—	—	—	—	—
Surinam.....	328	128	200	—	134	66	—
Virgin Islands (U.K.).....	8	8	—	—	—	—	—
Virgin Islands (U.S.A.).....	43	—	43	43	—	—	—
Total.....	455,527	303,873	151,653	60,975	39,995	38,575	12,108

— None.

^a Figures have been rounded to the closest thousand.

^b Area in which the program is not yet started.

^c 199,550 inhabitants were under mass-drug program, 706,535 were living in areas where the spraying was suspended due to financial difficulties, and 1,545,258 were living in areas where the spraying was in recess but with epidemiological vigilance.

^d Includes inhabitants in areas in recess from spraying.

^e Guyana, as of 26 May 1966.

During a meeting sponsored by the Pan American Health Organization (PAHO) in Washington, D. C., U. S. A., in April, the Ministries of Health studied adequate financing and the problem of coordinating the programs of the countries of the Central American Isthmus. The Ministers recommended the use of loans to finance investments in malaria eradication, and established the Working Group of Coordination, which is formed by the directors of the individual programs and representatives of PAHO, United Nations Children's Fund (UNICEF), and AID; the PAHO Zone III chief malaria consultant acts as secretary and is in charge of the monthly and quarterly exchanges of operational information. A general outline of proposed activities for 1966 and the responsibilities of each program with respect to border areas in particular was adopted by the Group, which began functioning immediately after its inception.

Plans of operations for the 1966-1968 period were worked out by each of the six campaigns and thoroughly reviewed by the Organization. While 1965 field operations were so restricted in all these programs (and also in México) that no progress toward eradication could be expected, available data indicated that no deterioration in the situation had occurred, and the base-lines for the plans made will prevail at the beginning of 1966.

Because of increased responsibilities in this area, PAHO reinforced the Zone III malaria advisory team with the addition of an epidemiologist. Now the team has four professionals.

The campaign of Brazil made important achievements in reorganization and planning, and executed the first stage of a new plan. Gradual inclusion of additional areas will bring the last area into attack phase at the beginning of 1968. Meanwhile, areas which have been in attack phase, some since before the new plan was established, will progressively enter consolidation phase, some in 1966 and the last in 1972.

The new plan is based upon a law passed on 6 July 1965 creating a Campaign for the Eradication of Malaria, which replaces the previous National Malaria Service law in effect since 1941. The new law provides the campaign with greater autonomy and flexibility and permits an improved administrative structure.

The 1965 Brazilian budget for the malaria program, somewhat smaller than foreseen, restricted eradication activities and, as a result, only a fifth of the resources available from the \$6.5 million loan previously negotiated with AID for 1964-1965 was used. At the end of the year, renegotiation was in process to make the

remaining funds available for 1966-1968; these funds cover purchase of imported equipment and supplies.

The Ecuadorean program prepared a six-year plan of operations to attack persistent transmission from multiple angles, and was seeking sources of adequate funds. This program suffered heavily during 1965 from lack of financial support.

Paraguay sought external resources to supplement those of the Government to permit application of the provisions of the new plan of operations completed in 1964, which calls for initiation of attack phase in late 1966. Geographical reconnaissance lagged behind schedule because of restricted funds and the need to expand resources on emergency attack in the Caaguazú area, which suffered serious epidemics of malaria in 1964 and 1965.

PAHO Advisory Committee on Malaria

The first meeting of the PAHO Advisory Committee on Malaria, which is intimately linked to the increased planning and financing developments in the Hemisphere, took place in Washington, D. C., from 31 August to 3 September. Seven of the eight malariologists of the Committee were present. The proceedings were further aided by observers from the Communicable Disease Center of the United States Public Health Service, AID, and National Institutes of Health.

After a study of the malaria situation in the programs of the Americas, particularly with respect to causes of persistent transmission, operations in problem areas, policies for the protection of cleared areas, amount and possible sources of funds and essential administrative requirements needed for eradication, the committee made a number of recommendations. Foremost among them were that continued priority be given to malaria eradication programs; that problem areas be handled as an integral part of the whole operational program, mobilizing the full resources of the malaria service to deal with them, using combined attack measures whenever required; that to facilitate early recognition of technical problems, epidemiological operations be expanded in all phases; that more effective and economical patterns of field work be continuously sought; that each country establish a high-level Malaria Eradication Council to ensure that activities are sustained at the appropriate degree of efficiency and intensity; that governments provide adequate and timely funds from the national budget and ensure flexibility in their expenditure; that the malaria services be given a free hand

in the recruitment and transfer of personnel; and that PAHO conduct and stimulate research in the solution of problems arising directly from eradication programs and also basic research, increasing the number or strength of Epidemiology Teams if necessary, and investigating the present distribution of drug-resistant *Plasmodium falciparum* in the Americas, the development of regimens of mass treatment with minimal side-effects and the definition of the interaction of the factors associated with the persistence of transmission.

Epidemiological Evaluation and Assessment

The inadequacy of 1965 budgets in many of the programs depressed the level of evaluation far below established norms. The actual malaria situation can therefore only be estimated in much of México, Central America and Panamá, parts of Brazil, and portions of the territory of other programs. Available information indicates that the holding operations carried out in some programs succeeded in preventing increases of incidence. In Bolivia the outbreaks of the previous year were controlled in 1965 and incidence fell sharply. In Perú some slight progress was made. British Guiana¹ and Surinam improved their evaluation procedures.

The technical staff of the Organization made detailed evaluations of the programs of Costa Rica, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, and Paraguay and—jointly with AID staff—of the Ecuador and Haiti programs. Brazil used the findings of a 1964 evaluation, also made by a Pan American Sanitary Bureau (PASB)-AID team, to draft a new plan of operations.

Operational Highlights

The largest program of collective treatment with anti-malarial drugs undertaken so far in the Hemisphere was carried out in Haiti. It was based on the results of the annual program evaluation, which divided the malarious area into three categories—areas in which transmission had been apparently halted by residual spraying and were placed under passive surveillance; areas with low-level continuing transmission or inadequate information, receiving one annual cycle of DDT, active and passive surveillance and, when necessary, focal collective treatment; and areas with frank transmission, which were

given collective treatment in 3-week cycles of chloroquine-pyrimethamine, according to the preliminary plans described in last year's *Report*. Initiated in May 1965 for a population of 220,000 the antimalarial program covered over 1 million persons by the end of the year. Results appeared to be good, and an evaluation was planned for 1966. In the light of the good results obtained it may be possible to terminate treatment in many of the areas included in the 1965 drug program, and because the program did not include areas for which the epidemiological data available was inadequate but which nevertheless were suspected of containing parasite reservoirs, a short drug-treatment course was planned for the latter areas in order to prevent reinfection of the neighboring cleared areas.

The program in the Dominican Republic, briefly interrupted by the political events in the spring, resumed operations rapidly and had excellent prospects of entering the consolidation phase soon.

In Bolivia, in a mountain river valley which had continued producing cases—despite shortened DDT cycles, weekly supplementary spraying, daily active case detection and immediate radical cure of cases, and the distribution of mosquito nets among the population—the 3 localities of highest incidence were finally cleared by administration of collective treatment with 2-week cycles of chloroquine-primaquine. The other 4 of the 7 major areas of transmission delimited in the program continued under attack, and toward the end of the year changes were made in the southern zones to overcome deficiencies in operational standards. In very remote and isolate areas it was found useful to administer radical-cure treatment through voluntary collaborators.

Experiments were made in Colombia during 1964-1965 with intensive use of seasonal spraying cycles supplemented with intercycle spraying of new or altered surfaces. Comparison of villages so sprayed with control villages given normal spraying coverage indicated that transmission was greatly reduced by the more intensive coverage; however, complete interruption was not achieved. The vectors involved were *Anopheles nuñeztovari*, *A. darlingi*, and *A. albimanus*.

In British Guiana, 2 of the 3 interior districts were placed in consolidation phase. Medicated salt distribution was discontinued in these districts early in the year, but was continued in the remaining Rupununi district, together with DDT-spraying of houses and plantation huts. In the Rupununi, medicated salt was distributed free of charge since March, which improved the coverage. Through November, only 21 cases were found, 2 of them being imported.

¹ Guyana, as of 26 May 1966.

Meetings

In addition to the Conference of the Ministers of Health of Central America and Panamá (Washington, D.C., 28-29 April) and the meeting of the PAHO Advisory Committee on Malaria (Washington, D.C., 31 August-3 September), the Second Seminar on the Role of General Health Services in Malaria Eradication was held in Cuernavaca, México, from 4 to 13 March. Among the 60 persons who attended were directors of health services and of malaria eradication programs of 17 countries and territories—including México, Central America, Panamá, and the Caribbean—and observers from interested international organizations. The fruits of this and the preceding seminar (Brazil, 1964) were beginning to be reaped in the systematic programs of Honduras, Nicaragua and Perú, among others, where the participation of the General Health Services was increasing and was preparing them for their eventual duties in the maintenance phase.

The XIII Meeting of Directors of National Malaria Eradication Services of the Caribbean, Central America, México, and Panamá was held from 9 to 12 August in Panamá City and the V Meeting of Directors of National Malaria Eradication Services of South America was held in Buenos Aires, Argentina, from 6 to 11 December.

Several intercountry meetings to study common problems were held with PASB collaboration (Table 2).

Advisory Services

Nearly all malaria eradication programs in the Hemisphere continued to receive technical services from advisers stationed in the countries, from Zone advisory teams, from the interregional advisory team, and from Headquarters personnel.

TABLE 2. MALARIA ERADICATION PROGRAM: INTERCOUNTRY MEETINGS STIMULATED BY AND/OR HELD WITH ASSISTANCE FROM THE ORGANIZATION, 1965

Dates	Countries	Place of meeting
27-29 March	Brazil-Perú	Manaus, Amazonas, Brazil
5-6 April	El Salvador-Guatemala-Honduras-Nicaragua	San Salvador, El Salvador
8-10 April	Guatemala-México	Campeche, México

The strengthening of the Zone III team was already mentioned. In Zone I, in which several programs had already achieved certification as having eradicated malaria, two more—Jamaica and Trinidad and Tobago—received certification during 1965. Dominica was slated for final assessment toward this end in early 1966. Therefore, the malaria advisory team in this Zone was discontinued. Technical advice and supervision of country-level personnel in programs in the Guianas will be undertaken by Headquarters personnel.

The Zone IV malaria adviser continued to fulfill this function as well as that of chief consultant of the Colombian program.

The epidemiology team stationed in México and working with the Pilot Project of Integrated Attack in Oaxaca was strengthened by one entomologist.

YELLOW FEVER CONTROL AND AEADES AEGYPTI ERADICATION

Yellow Fever

Seventy-nine cases of yellow fever were notified in the Americas in 1965 (Figure 2 and Table 3). All the cases were of the jungle type, and the diagnosis was made by histopathological examination.

In Bolivia the number of cases reported was larger than in the previous year; the cases occurred in the departments of La Paz and Santa Cruz.

The cases in Brazil occurred in the states of Mato Grosso, Goiás, and Minas Gerais and in the territory of Roraima.

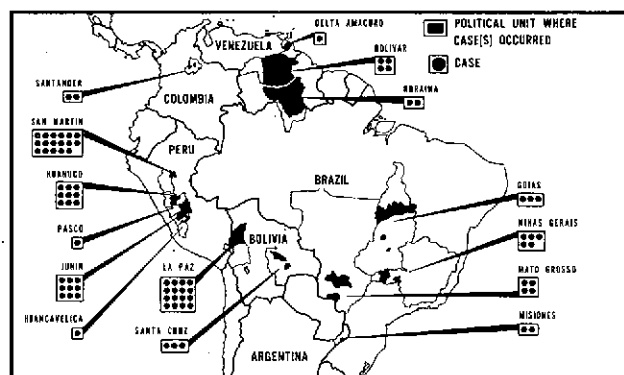


FIG. 2. REPORTED CASES OF JUNGLE YELLOW FEVER IN THE AMERICAS, 1965.

I. PROTECTION OF HEALTH: DISEASES

TABLE 3. REPORTED CASES OF JUNGLE YELLOW FEVER IN THE AMERICAS, 1964 AND 1965 ^a

Country	1964	1965
Argentina.....	—	2
Bolivia.....	13	19
Brazil.....	13	14
Colombia.....	10	2
Perú.....	60	37
Venezuela.....	2	5
Total.....	98	79

^a Based on official reports received at PASB through 19 May 1966.

of the states of Mato Grosso and Goiás and in that of Minas Gerais represents a spillover of the yellow fever virus from the Amazon basin into the southern and south-eastern areas of Brazil. According to ecological factors, the virus travels in a southerly direction to Paraguay, the province of Misiones in Argentina and the state of Rio Grande do Sul in Brazil, and/or southeasterly into the states of São Paulo and Paraná, Rio de Janeiro, and Espírito Santo. Since the occurrence of the first cases in Mato Grosso, Goiás, and Minas Gerais, the Organization repeatedly alerted the Brazilian health authorities to this fact and suggested the intensification of vigilance, through viscerotomy and isolation of the virus in animals in those areas, and through vaccination of the population living in or going to forest areas.

The cases in Colombia occurred in San Vicente de Chucurí (department of Santander), an old endemic focus located in the Magdalena valley.

In Perú the cases occurred in the departments of San Martín, Pasco, Huancavelica, Junín, and Huánuco, in valleys of tributaries of the Amazon which flow through the central part of the eastern slope of the Andean Cordillera.

The cases in Venezuela occurred in the state of Bolívar (eastern part) and the federal territory Delta Amacuro.

The Organization continued to cooperate with the Oswaldo Cruz Institute of Brazil and with the National Institute of Health of Colombia, both of which produce 17D yellow fever vaccine and provide free diagnostic services to other countries of the Americas and other parts of the world. Annual vaccine production amounted, in Brazil, to 3,959,800 doses, of which 906,000 were distributed to 9 countries; and in Colombia to 984,355 doses, of which 358,050 were distributed to 14 countries.

Aedes Aegypti Eradication

In the Americas, the countries which remained free of *Aedes aegypti* were: Argentina, British Honduras, Bolivia, Brazil, Chile, Costa Rica, Ecuador, Guatemala, Honduras, Nicaragua, Panamá, Paraguay, Perú, and Uruguay. But El Salvador and México, which had already eradicated the vector, became reinfested in 1965.

The reinfestation in México was confined to a small area in the city of Nuevo Laredo and was swiftly eliminated. In El Salvador, however, San Salvador was found to be extensively infested, and the mosquito was also detected in several localities surrounding the Capital. In view of the situation the Government immediately resumed the eradication campaign in the country and by the end of the year San Salvador was already being treated.

Apart from those two countries, the *A. aegypti* problem in the Hemisphere continued to be confined to the extreme north of South America, the United States of America, and the Caribbean Area.

In South America, the campaign in Colombia was in its final stage, since the mosquito had been found only in a small number of houses in Cúcuta. Venezuela and the Guianas, however, continued to be extensively infested.

The United States of America began to carry out eradication activities in 1964, but up to December 1965 the program covered only part of the total area considered to be infested by *A. aegypti*, and the results achieved were limited.

In the Caribbean Area the campaign was in its final phase in Trinidad and continued to progress in Cuba; but it was still suspended in the British Virgin Islands, Dominica, the Dominican Republic, Guadeloupe, Haiti, and Jamaica. The campaign in the remainder of the Area was also suspended or was progressing very slowly, and the results were not satisfactory.

One of the problems that continued to hinder the program in the Caribbean and South America was the resistance of the mosquito to chlorinated insecticides. With a view to solving this problem the Organization, in cooperation with the Government of Jamaica and the University of the West Indies, established in 1962 a small laboratory in Kingston, to investigate the susceptibility of several strains of *A. aegypti* from the Caribbean Area and South America to various insecticides, and to assess new products that might replace the chlorinated insecticides in the eradication of this mosquito. Some of the new insecticides studied at the laboratory, particularly two phosphorous compounds with long resid-

ual action and low toxicity to mammals, were very effective against *A. aegypti* strains resistant to both DDT and dieldrin.

It is clear, however, that the solution of the resistance problem alone will not solve the problem of eradicating *A. aegypti* from the Caribbean Area and the north of South America. Fundamentally, it will also be necessary to overcome the administrative and financial difficulties that the campaign has met with in almost all the countries and territories that are still infested.

The status of this problem in each country and territory still not free of *A. aegypti* as of December 1965 is summarized below; and Figure 3 and Table 4 contain data on program activities in the Hemisphere.

Argentina. In accordance with data presented at the XVI Meeting of the Directing Council of PAHO (September-October 1965) the country was officially declared free of the mosquito in Resolution XXVIII.

Colombia. A new verification was begun in Cúcuta (alternately reinfested and free of the vector since 1961) and, although it was still in progress in November, out of the 8,931 houses inspected 21 had been found infested. A new treatment of the city was begun to eliminate this reinfestation.

Verifications were also carried out in San Luis and Santa Marta (respectively reinfested in 1962 and 1964).

Two inspections were made in San Luis, both of which were negative; 3 were made in Santa Marta, and these were negative also.

The surveillance service was maintained in the other areas of the country considered to be free of the mosquito. Inspections were made with negative results in the ports of Barranquilla, Buenaventura, Cartagena, and Las Flores; the international airports of Barranquilla and Cali; and 27 localities in the departments of Bolívar and Santander del Norte and in the territorial district of La Guajira and that of San Andrés and Providencia.

Cuba. Repeated reinfestations in the past 2 years in Greater Havana and several adjacent localities limited the progress of the campaign, which in 1965 continued to be conducted almost exclusively in the provinces of Havana, Matanzas, and Pinar del Río; work in Las Villas province was begun.

From January to November, in the 4 provinces mentioned, the initial survey was carried out in 49 localities, a verification inspection was made in 187, and 86 localities received treatment. A total of 473,153 houses was inspected, and 210,739 were treated.

The total number of localities inspected in the country since the inception of the campaign rose to 1,016, of which 767 had been found infested with *A. aegypti*. Of these initially positive localities the campaign had treated 766 and had made verification inspections in 756; of the latter, at last inspection, 76 continued positive.

Dominican Republic. Eradication activities (suspended in 1962) were not resumed.

Haiti. The campaign (suspended in 1958) was not resumed.

Jamaica. The campaign continued limited to control measures in the international airports and ports of Kingston and Montego Bay. The eradication campaign was interrupted in 1961 and at the end of 1965 the Government had not resumed it because of the high resistance of the mosquito to chlorinated insecticides.

Trinidad and Tobago. The campaign was in the final phase in Trinidad, since almost the entire island is considered to be free of *A. aegypti*. In 1965, however, the mosquito continued to be found in the port area of Port-of-Spain and in small craft that ply from Venezuelan ports still infested. The repeated reinfestations of Port-of-Spain in the past 3 years have been attributed to these vessels. During that period, attempts were made to institute measures to prevent such vessels from continuing to transport *A. aegypti*, but it has not been possible to solve the problem.

The island of Tobago continued to be considered free of the vector.

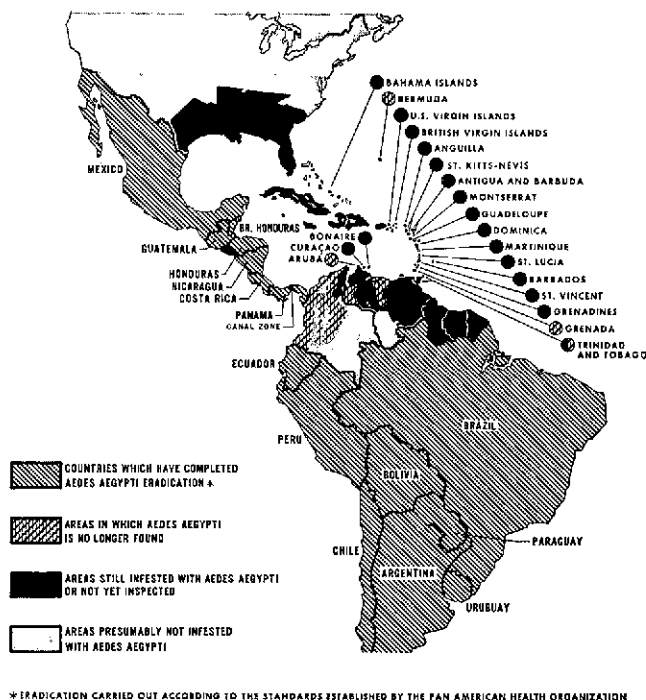


FIG. 3. STATUS OF THE *Aedes aegypti* ERADICATION CAMPAIGN, DECEMBER 1965.

I. PROTECTION OF HEALTH: DISEASES

TABLE 4. STATUS OF THE Aedes Aegypti ERADICATION CAMPAIGN IN THE AMERICAS, 1965 *

Country or other political unit	Dates		Areas estimated initially infested		Localities or other units inspected since beginning of campaign					Present stage of campaign
	Campaign began	Latest inspection	Total	Inspected	Number	Found initially positive				
						Total	Treated		Still positive	
							Total	Verified		
			<i>Square kilometers</i>	<i>Percent</i>						
Argentina.....	June 1953	Sept. 1965	1,000,000	100.0	3,741	165	165	165	—	b, c
Bolivia.....	June 1932	Feb. 1955	100,000	100.0	282	65	65	65	—	b
Brazil.....	Jan. 1931	Sept. 1965	5,358,822	100.0	268,576	36,119	36,119	36,119	—	b, c
Chile.....	June 1945	Dec. 1965	104,373	100.0	301	48	48	48	—	b, c
Colombia.....	Nov. 1950	Dec. 1965	280,000	100.0	3,801	355	353	353	1	d, e
Costa Rica.....	Apr. 1949	May 1955	20,000	100.0	1,342	104	104	104	—	b
Cuba.....	Mar. 1954	Dec. 1965	100,000	30.2	1,023	776	768	759	71	d, e
Dominican Republic.....	Oct. 1952	Aug. 1962	42,020	80.4	1,420	351	351	319	15	d
Ecuador.....	June 1946	Dec. 1964	69,454	100.0	2,824	337	337	337	—	b
El Salvador.....	Apr. 1949	Oct. 1965	18,675	100.0	909	190	190	190	13	d, e
Guatemala.....	Jan. 1949	Oct. 1965	36,423	100.0	2,485	138	138	138	—	b, c
Haiti.....	Oct. 1953	Sept. 1958	27,750	49.4	2,379	605	602	435	27	d
Honduras.....	Sept. 1949	Dec. 1965	69,929	100.0	600	53	53	53	—	b, c
Jamaica.....	Feb. 1950	June 1965	11,424	100.0	14	12	2	2	2	d
México.....	Jan. 1951	Sept. 1965	1,000,000	100.0	4,279	600	600	600	—	b, c
Nicaragua.....	Jan. 1950	June 1959	65,263	100.0	3,126	18	18	18	—	b
Panamá.....	Feb. 1949	June 1960	56,246	100.0	2,853	44	44	44	—	b
Paraguay.....	Jan. 1948	Dec. 1965	200,000	100.0	1,561	98	98	98	—	b, c
Perú.....	Jan. 1940	Dec. 1964	638,000	100.0	4,320	191	191	191	—	b
Trinidad and Tobago.....	Jan. 1951	Sept. 1965	3,108	100.0	128	122	122	122	1	d, e
United States of America.....	May 1964	Dec. 1965	1,550,000	80.5	644	243	23	23	23	d, e
Uruguay.....	Oct. 1948	Sept. 1965	187,000	100.0	1,020	133	133	133	—	b, c
Venezuela.....	June 1948	Oct. 1965	710,000	71.8	6,012	690	664	633	60	d, e
Anguilla.....	Apr. 1953	June 1965	88	100.0	19	19	19	19	18	d
Antigua.....	Aug. 1954	Feb. 1964	283	100.0	50	47	47	47	25	d
Aruba.....	Mar. 1952	June 1964	174	100.0	9	9	9	9	—	f
Bahamas.....	June 1954	Dec. 1965	11,396	1.3	13	10	10	10	10	d, e
Barbados.....	Mar. 1954	Dec. 1965	171	100.0	99	98	98	98	31	d, e
Bermuda.....	Jan. 1951	1963	53	100.0	9	9	9	9	—	f
Bonaire.....	Sept. 1952	Dec. 1965	246	100.0	6	6	6	6	1	d, e
British Guiana.....	Mar. 1946	Dec. 1965	4,662	100.0	93	21	21	21	3	d, e
British Honduras.....	Oct. 1950	July 1959	22,965	100.0	84	2	2	2	—	b
Cayman Islands.....	—	—	259	—	—	—	—	—	—	d
Curacao.....	Oct. 1951	Dec. 1965	448	100.0	5	5	5	5	5	d, e
Dominica.....	Feb. 1951	June 1965	789	50.0	136	66	66	66	16	d
French Guiana.....	May 1949	Mar. 1964	91,000	100.0	222	55	55	55	3	d
Grenada.....	Nov. 1952	July 1959	311	100.0	8	8	8	8	—	f
Grenadinas.....	Nov. 1952	June 1962	65	100.0	7	5	5	5	4	d
Guadeloupe.....	Jan. 1957	Oct. 1961	1,619	4.9	53	38	38	27	20	d
Martinique.....	Nov. 1953	Dec. 1965	1,000	100.0	34	21	19	19	12	d, e
Montserrat.....	May 1956	Dec. 1965	83	100.0	33	16	16	16	3	d, e
Panama Canal Zone.....	1948	Sept. 1960	1,432	100.0	21	2	2	2	—	b

TABLE 4. STATUS OF THE *Aedes aegypti* ERADICATION CAMPAIGN IN THE AMERICAS, 1965 ^a—Continued

Country or other political unit	Dates		Areas estimated initially infested		Localities or other units inspected since beginning of campaign					Present stage of campaign
	Campaign began	Latest inspection	Total	Inspected	Number	Found initially positive				
						Total	Treated			
							Total	Verified		
Total	Total	Still positive								
			<i>Square kilometers</i>	<i>Percent</i>						
Puerto Rico.....	Sept. 1964	Dec. 1965	8,896	48.5	48	48	32	32	32	d, e
Saba, St. Eustatius.....	July 1958	Aug. 1959	31	100.0	16	15	15	15	—	f
St. Kitts, Nevis.....	Apr. 1953	June 1965	308	100.0	43	43	43	43	7	d
St. Lucia.....	May 1953	Sept. 1965	259	100.0	50	50	50	50	37	d, u
St. Martin.....	Dec. 1958	Mar. 1964	34	100.0	18	15	15	15	15	d
St. Vincent.....	Mar. 1953	Mar. 1965	332	100.0	8	8	8	8	...	d
Surinam.....	Dec. 1962	Dec. 1965	48,000	30.0	27	26	8	8	8	d, e
Turks and Caicos Islands.	—	—	430	—	—	—	—	—	—	d
Virgin Islands (U.K.)....	Mar. 1960	Feb. 1963	174	74.6	23	23	23	23	8	d
Virgin Islands (U.S.A.)..	Aug. 1964	Dec. 1965	344	100.0	3	3	3	3	3	d, u

— None.

... Data not available.

^a Based on official reports received at PASB through 28 February 1966.^b Eradication completed.^c With vigilance.^d Positive for *Aedes aegypti*.^e Program in operation.^f Negative for *Aedes aegypti*.

United States of America. The campaign was begun in May 1964, but up to December 1965 only a part of the area presumably infested was being covered. That area measures approximately 1,550,000 km² and includes either part or all of the territory of 9 states in the Southwest, the island of Puerto Rico, and the U.S. Virgin Islands. The initial survey was carried out in 644 localities in the mainland, 48 in Puerto Rico, and 3 in the Virgin Islands. All the localities inspected in Puerto Rico and the Virgin Islands, plus 243 of those inspected in the mainland, were found positive.

Of the initially positive localities, 23 in the mainland, 32 in Puerto Rico, and the 3 in the Virgin Islands were treated. These localities were checked since the treatment, at least once, and according to the latest inspection all continued positive.

Venezuela. During the year, 223 localities were inspected in initial survey, 348 were checked, and 134 were treated. Of the localities inspected in initial sur-

vey, 32 were found with *A. aegypti*; and of the ones checked, 128 were found positive. In the course of this work, 657,616 houses were inspected and 147,004 were treated. In addition, from January to October, in various Venezuelan ports a total of 15,675 vessels were inspected; 2 were found infested.

France. The situation of the French Departments in the Hemisphere during 1965 may be summarized as follows:

The eradication campaign in *Guadeloupe* was interrupted in 1962 and was not resumed in 1965, during which year activities continued limited to control measures at the international airport and island ports.

In *French Guiana* an investigation made by the Government in 1964 showed that the reinfestation found in the capital city in 1963 extended over the entire city of Cayenne and environs, as well as to several localities in the interior. Eradication work, however, was not resumed in 1965.

Martinique has never had an *A. aegypti* eradication campaign. The Government carries on a general insect control program which produces only limited results as far as *A. aegypti* is concerned.

The French part of the island of *St. Martin* continued to be considered negative, although no recent information was available.

Kingdom of the Netherlands. *Aruba* continued to be considered negative, but *Bonaire*, which was negative in 1963, became reinfested in 1965.

Curaçao continued to be extensively infested; activities against *A. aegypti* were again limited to the port area of Willemstad, where the results obtained were not satisfactory.

Saba and *St. Eustatius* continued to be considered negative but no recent data were available.

The Dutch part of the island of *St. Martin* continued infested and without control measures.

In *Surinam*, campaign efforts were concentrated on the city of Paramaribo, where the results obtained continued to be limited. Repeated inspections were made in that city and the infestation index oscillated from 14% to 26%. The cause of such intense infestation was that, owing to the high resistance of the mosquito to the chlorinated insecticides, the use of insecticide was discontinued in March, and the work was reduced to general vector-control measures taken by campaign personnel during their monthly house visits.

The international airport at Surinam, the border localities of Albina and Nickerie, and 9 localities in the vicinity of the Capital were inspected. Except for the airport, where at last inspection only 4 of the 89 houses visited were found with *A. aegypti*, all the localities inspected had a high infestation index.

United Kingdom. *Barbuda*, *Bermuda*, *Grenada*, and *Nevis* continued to be considered negative.

Anguilla continued to be infested and without a suitable eradication campaign.

Despite the extensive infestation found in *Antigua* in 1964, the campaign was not resumed in 1965. The Government decided that eradication work would be resumed only when a new residual insecticide became available to replace chlorinated insecticides, to which the local *A. aegypti* strain has developed resistance.

The results obtained in *Barbados* in 1965 were better than in the previous year, apparently because fenthion was used instead of chlorinated insecticides. Fenthion was used in Bridgetown since the beginning of 1965, and in the remainder of the island since April. In December 1964 the island had 54 positive localities, in

which 1,345 houses were found with *A. aegypti*. By July 1965 the number of positive localities had been reduced to 24. In October, however, 644 houses were found infested in 30 localities of the island. This increased infestation after the initial success obtained with the new insecticide was attributed to deficiencies in the field work, such as, the large number of houses left untreated because they were closed at the time of inspection; incomplete or inadequate treatment of many potential foci; failure to comply with the legislation approved by the Government in support of the campaign; and an insufficient budget, which did not permit keeping a suitable work cycle.

The campaign in the *Bahama Islands* was still inactive owing to insufficient funds. In addition, the local *A. aegypti* has developed resistance to chlorinated insecticides.

British Guiana (extensively reinfested since 1962) resumed its eradication campaign in 1965. Work was limited to the city of Georgetown, where at the time of first treatment, in March, the infestation index was 7.1 (1,773 houses infested with *A. aegypti* out of 24,856 inspected). Despite repeated treatments, the index was 2.6 at the end of the year. This fact is attributable mainly to the administrative and technical difficulties which beset the campaign from the beginning, such as deficient handling of field personnel, mosquito breeding places in inaccessible water containers, and the low susceptibility of the mosquito to chlorinated insecticides.

Eradication work had not yet begun in the *Cayman*, *Turks*, and *Caicos* islands.

In *Dominica* the campaign was still suspended.

In the *Grenadines*, *Carriacou*, *Petit Martinique*, *Bequia*, and *Union* continued to be infested and without an eradication program.

The island of *Montserrat* (reinfested in 1964) continued to be positive despite campaign efforts.

St. Kitts (reinfested in 1964) continued to be positive, but eradication work was not resumed.

St. Lucia continued to be extensively infested and campaign activities during the year were limited to the capital, *Castries*, and to *Vigie*, where the international airport is located. In view of the resistance of the mosquito to chlorinated insecticides, kerosene was used as a larvicide, but with limited results.

St. Vincent was found reinfested in 1965 and up to December the situation had not changed.

The campaign in the *Virgin Islands* (interrupted in 1963) was not resumed.

SMALLPOX

The countries of the Americas reported 1,547 cases of smallpox to the Pan American Sanitary Bureau. Of these, 15 occurred in Argentina, 1,333 in Brazil, 149 in Colombia, 32 in Paraguay, and 18 in Perú (Table 5).

The amount of smallpox vaccine produced in Latin America in 1965 is shown in Table 6.

Investigation of an epidemic outbreak of smallpox in the province of Corrientes, Argentina, in August, made it possible to establish that the infection had originated in a similar outbreak in Paraguay. The 15 cases in Corrientes were benign. In order to stifle the outbreak and to prevent its spread, an emergency smallpox vaccination program was instituted in the provinces of Corrientes, El Chaco, and Misiones. By 31 October, 417,117 persons (68% of the population) had been vaccinated.

Glycerinated vaccine produced in Argentina, and lyophilized (freeze-dried) vaccine furnished gratis by Brasil and Perú at the request of PASB, were used in the emergency smallpox vaccination program. The National Institute of Microbiology of Buenos Aires, Argentina, confirmed the laboratory diagnosis of smallpox and performed the service for the Government of Paraguay also.

The Bureau approved the purchase of freeze-drying equipment for the National Institute of Microbiology. With such additional equipment Argentina will be in a position to produce sufficient smallpox vaccine to cover its own needs and to furnish vaccine to other countries which need it but do not produce it.

TABLE 5. REPORTED CASES OF SMALLPOX IN THE AMERICAS, 1964 AND 1965 ^a

Country	1964 ^b	1965 ^b
Argentina.....	13 ^c	15 ^d
Bolivia.....	5	—
Brazil.....	2,673 ^e	1,333 ^f
Colombia.....	21	149
Ecuador.....	42 ^g	—
Paraguay.....	7	32
Perú.....	454	18
Uruguay.....	3 ^h	—
Total.....	3,218	1,547

— None.

^a Based on official reports received at PASB through 19 May 1966.

^b Latest available data.

^c Includes 10 imported cases.

^d Includes 1 imported case.

^e Data limited to 21 states and 1 territory.

^f Data limited to 11 states and capitals of 2 other states.

^g Hospital data.

^h Imported.

The smallpox vaccination programs in Brazil have not succeeded in making smallpox disappear. In 1965, 22,120,470 persons were vaccinated, and 1,321 cases were reported.

TABLE 6. REPORTED SMALLPOX VACCINATIONS IN 22 COUNTRIES AND 16 TERRITORIES AND PRODUCTION OF SMALLPOX VACCINE IN THE AMERICAS, 1965

Country	Vaccinations	Vaccine produced Doses	
		Glycerinated	Lyophilized
Argentina.....	3,686,569	13,310,000	—
Bolivia.....	417,785	—	986,000
Brazil.....	22,120,470	500,000	27,000,000
Chile.....	829,409	3,000,000	400,000
Colombia.....	5,408,721	—	4,633,000
Costa Rica.....	32,680 ^a	—	—
Cuba.....	76,213 ^a	555,850	—
Dominican Republic.....	29,249	—	—
Ecuador.....	919,472	1,512,280	—
El Salvador.....	396,759 ^b	180,000	—
Guatemala.....	264,120 ^b	379,500	—
Haiti.....	426,623	—	—
Honduras.....	290,578	—	—
Jamaica.....	86,316 ^a	—	—
México.....	2,276,807	10,447,409	—
Nicaragua.....	173,308	—	—
Panamá.....	43,457 ^b	—	—
Paraguay.....	929,662	—	—
Perú.....	491,487	171,000	522,200
Trinidad and Tobago.....	76,954	—	—
Uruguay.....	196,197	2,583,200	—
Venezuela.....	1,295,343	1,741,200	3,443,000
Antigua.....	959	—	—
Aruba.....	10,250	—	—
Bahamas.....	4,613	—	—
Barbados.....	10,000	—	—
Bermuda.....	3,700	—	—
British Honduras.....	7,235	—	—
Cayman Islands.....	850	—	—
Dominica.....	2,212	—	—
French Guiana.....	4,107	—	—
Grenada.....	2,304	—	—
Montserrat.....	432	—	—
St. Kitts.....	2,507	—	—
St. Lucia.....	2,143	—	—
St. Vincent.....	1,721	—	—
Surinam.....	12,849	—	—
Virgin Islands (U.K.).....	100	—	—
Total.....	40,534,161	34,380,439	36,984,200

— None.

^a January-November.

^b Incomplete data.

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The Organization collaborated with the Government of Brazil in a study of the cost and organization of a national smallpox vaccination program to eradicate the disease from the country. An Agreement for a smallpox vaccination program, to be carried out in a group of states as part of the national program, was concluded between the Government and the Organization. The latter contributed \$150,000 for the purchase of jet injectors and vehicles to transport vaccination personnel, and a statistical expert visited the capital cities of the states to make a study of the incidence of smallpox.

Brazil has 3 laboratories producing lyophilized smallpox vaccine, and during 1965 they produced 27 million doses. In addition to meeting its own internal demands, Brazil furnished freeze-dried vaccine free of charge to several countries in the Americas, either for the continuation of their regular vaccination programs or to meet emergency needs.

During 1965, trials of the use of the jet injector for administering lyophilized smallpox vaccine were conducted by staff of the United States Public Health Service Communicable Disease Center, acting as PAHO/WHO consultants, in cooperation with Brazilian technical staff.

The national smallpox vaccination program of Colombia succeeded in reducing smallpox incidence from 3,404 cases in 1955 to 4 cases in 1963. The vaccination program was completed in 1962. In 1963 smallpox frequency began to rise and 149 cases were reported in 1965. The Government began a new smallpox vaccination program in the hope that it will eradicate the disease. A total of 5,408,721 persons were vaccinated against smallpox in 1965.

Paraguay became reinfected, despite the 1958-1960 national smallpox vaccination program which had eliminated the disease. Apparently, 1 imported case unleashed an outbreak in the interior of the country, which remained unknown until mid-1965 when cases occurred in a hospital in Asunción. Between August and November there were 32 cases of smallpox and 1 death in Asunción. Most of these infections were contracted in the hospital. The emergency smallpox vaccination program had vaccinated, by the end of the year, 929,662 persons.

As a result of the national vaccination program begun by Perú in 1950, smallpox cases had disappeared by 1955. The disease reappeared, however, in a limited area in 1963, when 865 cases were reported. In 1964 there were 454 cases; and in 1965, only 18.

The rest of South America, as well as México, the countries of Central America, Panamá, and the countries

and territories in the Caribbean Area remained free of smallpox.

Bolivia continued the national smallpox vaccination program begun in 1963. The aim is to vaccinate not less than 80% of the population of each of the geographical sectors of the country. The Organization contributed land vehicles and boats, for the transportation of personnel, and field supplies. The country has a laboratory, previously furnished by the Organization, which can produce sufficient freeze-dried smallpox vaccine to cover the needs of the program, but financial reasons prevented the laboratory from producing in 1965 sufficient vaccine to meet the needs of the country. To overcome this obstacle the Organization mediated in the obtention of freeze-dried smallpox vaccine free of charge from other countries in the Americas.

The program uses the multipressure technique to administer the vaccine in house-to-house visits. Of the 417,785 vaccinations given during the year, 115,917 were primovaccinations; the total number of persons vaccinated since the inception of the program rose to 1,365,751. During 1965, visits were made to 57,870 houses, bringing the total number visited since the program began to 205,598 houses.

The Organization maintained in the country a health inspector who cooperates with the national authorities in the organization and execution of field activities. Financial and administrative difficulties have slowed down this program.

In Ecuador the consolidation program, begun upon termination of the intensive phase of the national smallpox eradication program, was continued. The annual aim of the consolidation program is to vaccinate the newborn and immigrants and to revaccinate 20% of the total population of the country. It was estimated that 71% of this target was fulfilled in 1965, during which year 919,472 persons were vaccinated. No case of smallpox was reported.

Although the countries of Central America and Panamá have not had a smallpox case for many years, they carried out vaccination programs. So also did Cuba, the Dominican Republic, and Haiti. México, Brazil, Colombia, and Venezuela donated glycerinated and freeze-dried smallpox vaccine to the vaccination programs in Central America, the Dominican Republic, and Haiti.

The Governing Bodies of the Pan American Health Organization and of the World Health Organization have reiterated their intention to eradicate smallpox from the Western Hemisphere and from the entire world. The Pan American Sanitary Bureau has again been asked to

coordinate and cooperate with the programs of the countries of the Hemisphere. For the purpose of establishing the cost of a continental eradication program, in early 1965 a group of 8 short-term consultants, 3 epidemiologists, Country Representatives and specialized personnel from the Pan American Sanitary Bureau discussed and analyzed a questionnaire to be sent to the countries of the Hemisphere.

TUBERCULOSIS

In keeping with the basic aim of achieving the integration of a body of doctrine that might serve as the basis for the work of the Organization at all levels and as a guideline to countries planning their tuberculosis control activities, material was prepared for *PAHO Scientific Publication* 112, which contains all the documents relating to the Technical Discussions held during the XV Meeting of the Directing Council of PAHO (México, D.F.; 1964) and to the Regional Tuberculosis Seminar (Maracay and Caracas, Venezuela; 1964), of which 2,000 copies were distributed. Four papers and four documents of the World Health Organization were translated and mimeographed, among which Technical Guides 4 and 5 were of special importance. The first deals with Uniform Systems of Data Recording and the second with Planning of National Tuberculosis Control Programs. Three papers were published in the *Boletín* of the Pan American Sanitary Bureau—on tuberculin, BCG, and bacterial resistance, reprints of which were extensively distributed to all the countries of the Hemisphere, as were numerous summaries of articles on various aspects of tuberculosis.

In the wake of the Technical Discussions held in 1964 and of the publication and wide distribution of literature on tuberculosis, the health authorities in the countries and private bodies interested in the control of this disease showed a renewed interest in 1965 in the tuberculosis problem and in adopting control programs in accord with the guidelines discussed and agreed upon at the international meetings held in 1964. In 1965 several countries paid special attention to bacteriological diagnosis and stepped up the training of auxiliary personnel. Other countries gave BCG vaccinations indiscriminately, in other words, without a prior tuberculin test and together with other immunizations.

Since no substantial improvement was made in the control of cases under treatment or in the proper

coverage of populations, studies were begun to establish *verification areas* which meet the conditions for serving as points of reference for future programs. The term *verification area* was adopted in December—in lieu of the terms demonstration area, test area, or pilot area—because it expresses better the aims of the Organization in establishing these programs.

In the course of 1965 Advisory services were given to Argentina, Brazil, Chile, Colombia, El Salvador, Honduras, México, Nicaragua, and Venezuela by the Zone advisers, short-term consultants, and Regional Tuberculosis Adviser, and there was active participation at two meetings of the United States-México Border Public Health Association.

Work at the National Tuberculosis Control Center (Recreo, Sante Fe) of Argentina continued normally, and its staff prepared a publication on tuberculosis control programs which won the prize awarded by the Government for the best medical publication of the year. One of the physicians trained at the Center became its director in June, and another medical officer returned in September from a tuberculosis course in Prague and Copenhagen.

The control program of cases under treatment in the Bolivian Highlands left much to be desired despite the efforts made by the national personnel working in this program. Steps were taken to reorganize the program as an integral part of the basic health services in order to make it more effective.

Two PAHO officials, a WHO (Geneva) official, and one short-term consultant held discussions with Brazilian authorities on the development of programs underway, and on standards and guidelines for the national tuberculosis service. As an immediate result, it was agreed to plan a verification area, award fellowships for specific studies, and begin a study on the primary resistance to isoniazid and on the prevalence of atypical mycobacteria.

Activities were resumed in the suburb La Cisterna, of Santiago, Chile, in March, after personnel were trained and a new chief was appointed for the program. Changes in the present program will be introduced as the result of the visit of a short-term consultant.

Basic studies were made in Colombia for the establishment of a verification area in which to apply the guidelines of PAHO/WHO for tuberculosis control programs.

The Costa Rica program began in April, in the Golfito canton of Puntarenas province, but the advances made up to the end of the year did not include the incorporation of BCG vaccination and case control into the regular activities of the local health services.

In the Dominican Republic the examination of a sam-

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ple population from the rural area of the municipality of San Cristóbal was begun in January. It covered 5,232 persons, of whom 3,929 tuberculin-negative were vaccinated with BCG. The x-ray suspicious-shadows rate was only 1 per 1,000.

Personnel training was begun in Ecuador, for the purpose of incorporating tuberculosis control into the general activities of the health services, beginning in the province of Manabí with the cooperation of the Ecuadorian League Against Tuberculosis.

In El Salvador the program began in August and up to October both morbidity and overall infection were found to be far lower than expected, a fact attributed to the characteristics of the scattered rural population examined up to that time. For the remainder of the country an integrated program of intradermal BCG vaccination, without prior tuberculin testing, was established. The program was being carried on, in conjunction with other immunizations, in the general health services.

In Honduras, although the Agreement had expired and therefore also international material assistance, both the program and the incorporation and coordination of its activities as a part of the general health services proceeded at a normal pace. Originally confined to the departments of Comayagua and La Paz, activities covered the departments of Choluteca, Cortés, Francisco

Morazán, and Valle by the end of 1965. Indiscriminate BCG vaccination was introduced in this program and smallpox vaccine and DPT were added with the cooperation and participation of other international nongovernmental agencies.

In México the demonstration area program in Querétaro was continued and was revised again at the end of the year because case treatment and control through public health centers continued to be inadequate.

In Nicaragua the intensive participation of all health services in tuberculosis control activities continued in the form of the gradual training of personnel with particular attention to laboratory services, for which 17 local health service technicians were trained.

A second tuberculin-x-ray survey was carried out in Chiriquí province, Panamá, and revealed a decrease in radiographic morbidity, from 2% in 1961 to 0.5% in 1965, as well as a high percentage of tuberculosis cases in the early stages. The chief of the campaign completed the academic course in public health at the University of Chile under a PAHO/WHO fellowship.

At the end of the year the organization of the Tacna, Perú, program was being revised, in particular the technical standards and the forms for recording standard data and information.

In Venezuela comparative studies were made of vari-

TABLE 7. TUBERCULOSIS CONTROL PROGRAM ACTIVITIES, 1965

Country	Tuberculin tests	BCG vaccinations	Miniature x-rays	Sputum examinations	Cases detected
Argentina (Recreo, Santa Fe) ^a	41,522	11,204	57,551	11,413 ^b	301
Bolivia (Altiplano) ^a	9,889	3,199	7,735	...	224
Costa Rica (Puntarenas) ^c	18,321	13,217	9,736	...	...
Chile (La Cisterna, Santiago) ^d	10,367	...	16,643	...	39 ^e
El Salvador (Usulután) ^f	11,262	7,459	9,500	...	19
Honduras ^g	162,145	190,138	96,998	...	2,019
México (Querétaro) ^h	25,510	19,002	3,038	340	102
Nicaragua.....	101,893	71,461	22,245	3,690	2,402
Panamá (Veraguas) ^a	19,845	6,325	8,841	...	52
Perú (Tacna) ⁱ	6,153	787	9,491	...	440
Total.....	406,907	322,792	241,778	15,443	5,598

... Data not available.

^a January-October.

^b 5,348 direct examinations, and 6,065 cultures.

^c January-October.

^d March-August.

^e Found in one sample in 10,905.

^f August-October.

^g Departments of Choluteca, Comayagua, Cortés, Francisco Morazán, La Paz, and Valle; January-December.

^h January-June.

ⁱ January-July.

ous procedures for taking and preparing sputum or laryngeal swab samples seeded in different culture media, and the evaluation of the results was begun. A course on techniques for the diagnosis of mycobacteria was also prepared. The course is planned to be held between January and February 1966.

To sum up, in the tuberculosis control programs of Argentina, Bolivia, Chile, Costa Rica, El Salvador, Honduras, México, Nicaragua, Panamá and Perú, the accomplishments covered 406,907 tuberculin tests read, 322,792 BCG vaccinations given, 241,778 miniature x-ray examinations and 15,433 sputum examinations made, and 5,598 cases of tuberculosis detected (Table 7).

The numerical data available on the various tuberculosis campaigns being conducted with or without the assistance of the Organization continued to be defective and incomplete. Steps should therefore be taken in the coming years to establish a uniform system of records and reports in order to provide the health agencies of the Americas with a uniform and comparable evaluation assessment of the tuberculosis control programs.

LEPROSY

The Organization continued to assist the countries of the Hemisphere in planning, programing, organizing, and evaluating their leprosy control programs. The changes in concept and work techniques mentioned in earlier *Reports* found increasing acceptance in the countries and were being more frequently applied.

The Organization had advisers in leprosy in Zones IV and VI and 8 short-term consultants. In the Zones where no leprosy consultant was stationed, epidemiologists handled the problem. Two WHO experts conducted an epidemiological survey in Colombia.

Work continued on the Manual for Leprosy Control Programs, in which scientists of the Hemisphere and Headquarters staff are collaborating.

Leprosy exists in all countries of the Americas, except for the continental part of Chile. Nevertheless, the true magnitude of the problem is unknown because the information available is incomplete (Tables 8 and 9).

Note, for example, in Table 8 that of the 152,189 patients registered, the sex of only 26,712, the age of only 26,461, the clinical form of disease of only 45,450, and the treatment of only 95,231 are known. Data collection and registration is incomplete, a circumstance which hampers the determination of the most important epi-

demiological characteristics of the disease and the preparation of adequate control plans. It is not possible to administer a control program correctly unless there is a suitable data registration system that accumulates epidemiological data and information about the individual and team activities in stated units of time or other measurable units.

The Pan American Sanitary Bureau has devoted special attention to the tasks of ascertaining the magnitude and relative importance of the problem, of knowing the work techniques and their efficacy and the resources that are or may be available, so as to be in a position to plan control activities. Headquarters staff, epidemiologists, leprosy advisers at Zone Offices, short-term consultants, and statisticians—all assisted the Governments of Argentina, Ecuador, and Venezuela in organizing, conducting, and improving records-keeping systems of data needed for analyzing work techniques and production costs and for establishing quantitative objectives to be achieved in given periods of time.

In 1965 the recommendations of the Leprosy Seminar (Cuernavaca, Morelos, México; 1963) were being applied totally or in part.

Special emphasis was placed on the prevention of deformities and the rehabilitation of leprosy patients, in view of the fact that 45% of such patients suffer some type of disability. The prevention of deformity is the first priority in rehabilitation; the second is to halt the aggravation of existing disabilities as well as correct them. To halt the aggravation of disabilities and to correct them it is essential to know the most efficacious methods that can be applied by the largest amount of available personnel. Nonsurgical methods, therefore, received the main emphasis.

An activity recently instituted in some countries is the registry of physical-disabilities data (Table 10). No doubt the number of disabilities discovered will increase as the programs detect more and more cases and such cases are more carefully examined.

In Argentina the northern sector of Buenos Aires was in the final stage of intensive case-finding, and case and contact registration were updated. In the provinces of Entre Ríos, Misiones, and Tucumán, intensive case-finding, contact-registration, and updating of case and contact registers were completed. The phase of patient treatment and prevention of deformity, control of patients and contacts, and case-detection was begun. The provinces of Salta, Santa Fe, and Formosa revised their leprosy control programs, using the same method used by the provinces of Entre Ríos, Misiones, and Tucumán.

At 30 September the number of registered cases in

TABLE 8. STATUS OF LEPROSY IN 14 COUNTRIES IN THE AMERICAS *

Country	Reference date	Cases in the active register			Sex		Age		Clinical form			Treatment			Contacts			
		Under surveillance	Without surveillance	Total	Male	Female	Under 15 years	15 years and over	Leprosymatous	Tuberculoïd	Indeterminate	Others	Hospitalized	Ambulatory	None	Under surveillance	Without surveillance	Total
Argentina ^b	30 Sept. 1965	5,190	3,707 ^c	8,897	2,952	2,238	117	5,073	2,738	1,520	749	183	981	4,209	—	12,875	5,202	18,077
Brazil	31 Dec. 1964	74,560	26,919	101,479 ^d	...	...	...	...	...	...	...	...	16,690 ^e	57,859 ^f	26,843 ^g	119,019	114,438	233,457 ^h
Costa Rica	30 June 1965	447	35	482	301	181	14	468	277	62	140	3	93	355	34	2,114	945	3,059
Cuba	30 June 1965	3,806	406	4,212	2,491	1,721	87	4,125	2,368	895	532	417	...	...	...	...	...	...
Dominican Republic	31 Dec. 1964	596	48	644	413	231	34	610	407	135	102	—	125	430	89	1,642	...	...
Ecuador	31 Dec. 1964	856	29	885	503 ^e	253 ^e	101 ^f	624 ^f	367 ^f	125	224 ^f	9 ^f	196	660	29	1,642	...	...
El Salvador	28 Feb. 1965	150	68	218	161	57	...	...	91	46	67	14	24	126	68	...	...	...
Honduras	30 June 1965	163	53	216	144	72	15	201	38	96	79	3	9	165	42	677	1,102	1,779
México	30 June 1965	10,389	4,520	14,909	...	...	...	...	8,153 ^g	3,125	3,629	—	...	...	...	6,356	3,667	10,023
Panamá	30 June 1965	155	29	184	121	63	4	180	66	88	3	27	102	53	29	483	55	538
Paraguay	Oct. 1965	2,722	1,140	3,862	...	...	...	...	1,901	1,093	808	60	272	2,450	1,140	3,074	...	...
Perú	30 June 1965	1,493	1,393 ^h	2,886	1,009	484	104	1,389	758	213	497	25	308	1,140	1,443	6,098	8,096	14,194
Trinidad and Tobago	30 June 1965	607	749	1,356	729	627	109	1,247	336	865	42	113	243	364	749	130	512	642
Venezuela	30 June 1965	8,979	2,980	11,959	7,798	4,161	1,195	10,764	5,040	3,758	2,395	766	603	7,779	3,577	21,790	17,375	39,165
Total	.....	110,113	42,076	152,189	16,622	10,090	1,780	24,681	22,542	12,021	9,267	1,620	19,641	75,590	34,043	174,552	152,801	324,279 ⁱ

— None.

... Data not available.

^a Based on official information received at PAEB through 30 April 1966.^b Data refers to provinces of Buenos Aires, Córdoba, (except contacts), Entre Ríos, Formosa, Misiones, Salta, Santa Fe and Tucumán.^c Cases not classified by sex, age, clinical form, or treatment.^d Partial information.^e Excluding 127 cases not classified by sex.^f Excluding 160 cases not classified by age or clinical form.^g Including dimorphous.^h Cases not classified by sex, age, or clinical form.ⁱ Excluding Paraguay.

TABLE 9. LEPROSY CASES DISCOVERED IN 14 COUNTRIES IN THE AMERICAS, BY SEX, AGE, AND CLINICAL FORM ^a

Country	Period covered by data	Sex		Age		Clinical form				Total
		Male	Female	Under 15 years	15 years and over	Lepromatous	Tuberculoid	Indeterminate	Others	
Argentina ^b	1 July 1965-30 Sept. 1965	157	121	7	271	125	89	34	30	278
Brazil.....	1 Jan. 1964-30 June 1964	...	...	169	2,321	1,210	602	669	9	3,287 ^c
Costa Rica.....	30 June 1964-30 June 1965	24	16	2	38	16	7	17	—	40
Cuba.....	1 Jan. 1965-30 June 1965	...	...	...	...	...	...	...	...	179
Dominican Republic.....	1 July 1964-31 Dec. 1964	12	11	4	19	12	6	5	—	23
Ecuador.....	1 Jan. 1964-31 Dec. 1964	223	133	29	327	136	80	138	2	356
El Salvador.....	1 Jan. 1965-28 Feb. 1965	1	1	...	...	—	2	—	—	2
Honduras.....	30 Oct. 1964-30 June 1965	16	8	—	24	4	12	5	3	24
México.....	1 Jan. 1965-1 June 1965	265	235	47	453	248 ^d	106	146	—	500
Panamá.....	1 July 1964-30 June 1965	7	7	—	14	4	7	—	3	14
Paraguay.....	Jan. 1965- Oct. 1965	...	...	...	...	47	31	12	4	94
Perú.....	1 Jan. 1965-30 June 1965	30	6	7	29	17	4	14	1	36
Trinidad and Tobago.....	1 Jan. 1965-30 June 1965	9	13	1	21	3	14	—	5	22
Venezuela.....	1 Jan. 1965-30 June 1965	185	95	17	263	112	80	63	25	298 ^e

— None.

... Data not available.

^a Based on official information received at PASB through 30 April 1966.

^b Data refers to provinces of Buenos Aires, Córdoba, Entre Ríos, Formosa, Misiones, Salta, Santa Fe, and Tucumán.

^c Data for 1 July-31 December 1964 but breakdown by sex, age, and clinical form not available; data not available for provinces of Amazon and Sergipe and territory of Roraima.

^d Including dimorphous.

^e Including 18 cases not classified by sex, age, or clinical form.

Argentina was 8,897 (Table 8); of these, 5,190 were under control. Of the patients under control, 2,952 were male and 2,238 were female; 117 were under 15 years of age; 4,209 were receiving ambulatory treatment, and 981 were hospitalized. The clinical forms were as follows: 2,738 lepromatous; 1,520 tuberculoid; 749 indeterminate; and 183 other clinical forms. Registered contacts totaled 18,077, of which 12,875 were under control. In the period 1 July-30 September, 278 new cases of leprosy were detected (Table 9).

With a view to applying all proper health administration principles, the leprosy control program of Argentina was carefully reviewed. Program costs were also studied.

The leprosy control program of Ecuador—the result of an Agreement between the Government, PAHO/WHO, and UNICEF—was begun in 1963. It is a vertical-type program whose activities will, it is hoped, be coordinated with those of other health programs.

For purposes of leprosy control, the country is divided into 6 Regional Service Areas, each with 1 medical officer and 5 health auxiliaries. The latter are responsible for seeking out suspect cases of leprosy among the population, and the physician in charge is responsible

for the diagnosis. The auxiliary personnel are also responsible for the periodic control of patients and contacts, but always under strict medical supervision.

During 1965 the number of persons examined was 117,987 (77.2% of the target) and 356 new cases were detected, so that the prevalence was 3.02%. Prevalence varied from 1.2% in Loja province to 13.6% in the provinces of Guayas and Los Ríos. The high prevalence in Guayas and Los Ríos is attributable to the fact that the population examined was drawn mainly from among contacts of leprosy patients.

Of the new cases detected, 223 were male and 133 were female; 29 were under 15 years of age. Clinical forms were as follows: 136 lepromatous, 80 tuberculoid, 138 indeterminate, and 2 dimorphous.

The number of contacts examined was 2,968—1,068 for the first time. Most of the contacts of newly detected cases were examined (3.81 contacts per new case); but this did not hold true for the contacts of former cases, approximately half of which were not under control.

Clinical reviews totaled 1,815, the established target being 1,800.

Voluntary collaborators showed great interest and a marked sense of responsibility in the distribution of

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TABLE 10. DISABILITIES IN LEPROSY CASES DETECTED IN 8 COUNTRIES OF THE AMERICAS ^a

Country	Period covered by data	Dermatrophics			Miotrophics						Osteotrophics			Ocular impairment		
		Plantar ulcer	Other	Total	Simple	With paralysis					Moderate	Intense	Total	Blindness	Loss of vision	Total
						Claw hand	Drop foot	Lagophthalmos	Other	Total						
Argentina.....	1 July 1965-30 Sept. 1965	17	13	30	11	8	1	3	2	14	2	4	6	1	8	9
Dominican Republic.....	1 July 1964-31 Dec. 1964	—	—	—	1	3	3	—	—	6	—	—	—	—	—	—
Ecuador.....	1 Jan. 1964-31 Dec. 1964	57	54	111	60	45	2	4	—	51	54	27	81	2	2	4
México.....	1 Jan. 1965-30 June 1965	12	36	48	152	10	1	1	1	13	11	16	27	—	—	—
Panamá.....	1 July 1964-30 June 1965	2	3	5	2	—	—	—	—	—	2	—	2	1	1	2
Perú.....	1 Jan. 1965-30 June 1965	4	1	5	9	4	1	—	9	14	4	4	8	—	—	—
Trinidad and Tobago.....	1 Jan. 1965-30 June 1965	1	—	1	—	1	1	—	—	2	—	—	—	—	—	—
Venezuela.....	1 Jan. 1965-30 June 1965	27	22	49	18	45	11	6	15	77	12	7	19	—	7	7

— None.

^a Based on official reports received at PASB through 30 April 1966.

drugs, as well as in ensuring that the drugs were taken as recommended.

Rehabilitation activities were intensified in Guayaquil and Cuenca, especially the prevention of deformities. A small physiotherapy unit was being installed.

The Government of Venezuela continued carrying out its active leprosy control program. Special teams examined a large part of the country's population, especially in the rural areas, and as a result the prevalence of leprosy in the various geopolitical areas of the country became rather well known (Table 11). In addition, considerable headway was made in the prevention of deformities and the rehabilitation of leprosy patients. The rural services attending leprosy patients and persons with other disabilities have shown that it is possible to benefit a large number of the population without the need for extensive physical installations or large investments in equipment.

A study including an analysis of the leprosy program and the general health plan was also made to determine the extent to which it will be possible to incorporate the leprosy control program into the general health services of the state of Táchira.

At 30 June 1965, Venezuela had 11,959 registered leprosy patients, of which 8,979 were under control; 7,798 were male and 4,161 were female; 1,195 were under age 15. The clinical forms were as follows: 5,040 lepromatous; 3,758 tuberculoid; 2,395 indeterminate; and 766 other clinical types. As regards treatment, 603 were hospitalized and 7,779 were receiving ambulatory

treatment; 3,577 were not receiving treatment. The number of registered contacts was 39,165, of which 21,790 were under control.

A course on the prevention of deformities and the physical rehabilitation of leprosy patients, with emphasis on the use of nonsurgical methods, was held in Venezuela (see Chapter III, Education and Training).

The Organization collaborated in establishing the techniques of program administration; in designing the data registration system, tested in 2 areas in the country, and in training the personnel that use and manage the system. Together with authorities of the physical medicine and rehabilitation program, a study was made also of how to develop an administrative method applicable to activities for the rehabilitation of leprosy patients. Headquarters and Zone I Office personnel, statisticians, and a short-term consultant specialized in statistics and administration, all assisted with the studies made in Venezuela.

The degree of development of leprosy control activities, and the number and quality of the professional staff working in this speciality, make Venezuela an excellent field for the study of new methods of work in this disease. Consequently, a study was being made of the possibility of organizing in Venezuela a permanent training center for the prevention of deformities and the physical rehabilitation of leprosy patients. At first the center would serve the Spanish-speaking countries of the Americas and, as its teaching facilities increased, would

TABLE 11. PREVALENCE OF LEPROSY IN VENEZUELA, BY DISTRICTS, 1965
Cases registered per 1,000 population

Geopolitical unit	Cases	Geopolitical unit	Cases	Geopolitical unit	Cases	Geopolitical unit	Cases
FEDERAL DISTRICT		Carabobo (cont.)		Mérida (cont.)		TÁCHIRA	
Libertador (Dept.)	0.18	Carlos Arvelo.....	0.26	Rivas Dávila.....	10.08	Ayacucho.....	17.39
Vargas (Dept.)	0.78	Guacara.....	0.27	Sucre.....	8.88	Bolívar.....	4.54
		Montalbán.....	0.72	Tovar.....	3.25	Capacho.....	8.72
		Puerto Cabello.....	1.43			Cárdenas.....	7.62
		Valencia.....	0.28	MIRANDA		Jáuregui.....	5.35
STATE OF ANZOÁTEGUI				Acevedo.....	3.55	Junín.....	7.02
Aragua.....	0.99	COJEDES		Brión.....	4.78	Lobatera.....	25.55
Bolívar.....	0.37	Anzoátegui.....	0.16	Guaicaipuro.....	1.10	San Cristóbal.....	2.01
Bruzual.....	0.73	Falcón.....	0.27	Lander.....	0.58	Uribante.....	5.99
Cajigal.....	0.10	Girardot.....	2.20	Páez.....	11.70		
Freites.....	0.15	Pao.....	0.08	Paz Castillo.....	1.02	TRUJILLO	
Independencia.....	1.15	Ricaurte.....	—	Plaza.....	0.21	Betijoque.....	1.23
Libertador.....	0.34	San Carlos.....	0.31	Sucre.....	0.03	Boconó.....	13.11
Miranda.....	0.15	Tinaco.....	—	Urdaneta.....	0.64	Carache.....	16.82
Monagas.....	1.01			Zamora.....	0.33	Escuque.....	4.93
Peñalver.....	0.55	FALCÓN				Trujillo.....	13.97
Simón Rodríguez.....	0.09	Acosta.....	0.34	MONAGAS		Urdaneta.....	16.98
Sotillo.....	0.07	Bolívar.....	0.50	Acosta.....	0.25	Valera.....	2.37
		Buchivacoa.....	0.48	Bolívar.....	0.07		
APURE		Colina.....	0.67	Caripe.....	0.51	YARACUAY	
Achaguas.....	10.28	Democracia.....	0.75	Cedeño.....	0.52	Bolívar.....	0.32
Muñoz.....	5.89	Falcón.....	0.08	Maturín.....	0.13	Bruzual.....	0.17
Paéz.....	3.99	Federación.....	0.32	Piar.....	0.09	Nirgua.....	1.20
San Fernando.....	8.20	Mauroa.....	0.29	Sotillo.....	0.45	San Felipe.....	0.40
		Miranda.....	0.54			Sucre.....	0.92
		Petit.....	0.51	NUEVA ESPARTA		Urachiche.....	0.20
ARAGUA		Silva.....	0.81	Arisмени.....	6.00	Yaritagua.....	1.15
Girardot.....	0.39	Zamora.....	0.69	Díaz.....	2.17		
Mariño.....	0.39			Gómez.....	3.50	ZULIA	
Ricaurte.....	4.73	GUÁRICO		Maneiro.....	2.40	Baralt.....	0.34
San Casimiro.....	1.17	Infante.....	0.32	Marcano.....	4.99	Bolívar.....	0.23
San Sebastián.....	1.51	Mellado.....	0.86	Mariño.....	1.50	Colón.....	3.33
Sucre.....	0.33	Miranda.....	4.89			Mara.....	0.63
Urdaneta.....	0.61	Monagas.....	0.35	PORTUGUESA		Maracaibo.....	0.45
Zamora.....	1.04	Rivas.....	0.28	Araure.....	0.12	Miranda.....	0.75
		Roscío.....	0.40	Estéller.....	0.14	Páez.....	0.57
BARINAS		Zaraza.....	0.60	Guanare.....	0.69	Perijá.....	0.95
Arisмени.....	8.05			Guanarito.....	0.99	Sucre.....	1.43
Barinas.....	0.76	LARA		Ospino.....	—	Urdaneta.....	2.66
Bolívar.....	6.00	Crespo.....	1.79	Páez.....	0.18		
Obispos.....	1.14	Iribarren.....	0.56	Sucre.....	4.39	FEDERAL TERRITORY OF AMAZONAS	
Pedraza.....	1.02	Jiménez.....	3.12	Turén.....	—	Ature.....	0.86
Rojas.....	2.13	Morán.....	11.70			Atabapo.....	—
Sosa.....	7.91	Palavecino.....	0.34	SUCRE		Casiquire.....	—
		Torres.....	1.43	Arisмени.....	3.46	Río Negro.....	2.45
BOLÍVAR		Urdaneta.....	0.40	Benítez.....	1.20		
Cedeño.....	8.66			Bermúdez.....	1.62	DELTA-AMACURO	
Heres.....	1.48	MÉRIDA		Mariño.....	1.65	Pedernales.....	0.40
Piar.....	0.38	Campo Elias.....	5.24	Montes.....	0.24	Tucupita.....	0.24
Roscío.....	1.35	Justo Briceño.....	1.85	Ribero.....	0.41	Antonio Díaz.....	0.28
Sucre.....	6.37	Libertador.....	5.80	Sucre.....	0.56		
		Miranda.....	3.18	Valdéz.....	0.83		
CARABOBO		Rangel.....	10.92				
Bejuma.....	0.98						

— None.

gradually extend its radius of activity to the other countries.

VENEREAL DISEASES

Studies conducted in several countries and an analysis of the statistics from countries with an efficient reporting system reveal a growing increase in venereal diseases, particularly syphilis and gonorrhea. Everything leads to the conclusion that the scope of this problem in Latin America is greater than one might gather from the incomplete data available. Concerned about the situation, the Bureau, in cooperation with the United States Government, sponsored a Seminar on Venereal Diseases, in Washington, D.C., from 24 to 30 October, to afford an opportunity for the exchange of ideas and experiences. This seminar was attended by 39 directors general of health and chiefs of epidemiology of the countries and territories in the Americas, 28 international experts and officers of the United States Public Health Service, and 7 medical officials of the Organization. The epidemiology of venereal disease, its diagnosis and control, and

personnel training were discussed in working parties. At the end of the year, the Spanish text of the documents was being prepared for publication.

The El Paso Field Office continued to perform its function of coordinating venereal disease control activities along the United States-México border.

The National Institute of Microbiology of Argentina and the Central Laboratory of the Ministry of Public Health of Nicaragua joined the continental program for the evaluation of syphilis serology, which the Communicable Disease Center of the United States Public Health Service is carrying out.

The 1964 revised edition of the *Manual of Serologic Tests for Syphilis* was translated into Spanish for publication.

YAWS

The Government of the Dominican Republic carried out an eradication program in cooperation with PASB, but at the end of the year the extent of the problem was still not fully known. The situation will be studied



Seminar on Venereal Diseases held from 24 to 30 October in Washington, D. C.

as part of the research plan to be carried out in 1966 in cooperation with the Organization.

In Haiti the yaws eradication program was in the surveillance phase. Case-finding is carried out in combination with the smallpox vaccination program, of which the Rural Home Health Service (SANDOR) is in charge.

From January to July, 23 new cases of yaws were recorded, all of which were confirmed by laboratory tests. The number of cases found in a relatively short period, at a time when the yaws eradication program was in the surveillance phase, made it clearly advisable to undertake a systematic study to determine the cause. An expert will give advisory services in the Haiti investigation and in a similar one in the Dominican Republic.

A preliminary survey made with the assistance of international personnel to learn the cause for the increase in yaws incidence in Haiti seemed to point to the facts that the cases occur in small communities which are distant from medical care centers.

Cases of yaws continued to occur in Grenada, St. Lucia, St. Vincent, and Trinidad.

ZOOZOSES

The Organization continued to assist zoonoses control programs in the countries of the Hemisphere through its staff at Headquarters and Zone Offices, short-term consultants, and especially through the Pan American Zoonoses Center and the Pan American Foot-and-Mouth Disease Center.

Considerable emphasis was given to rabies control in most of the countries in which the disease still exists, not only in urban centers where rabies is transmitted by dogs and constitutes a serious public health problem but also in vast rural tracts where the disease is spread by wild animals and causes great financial losses to stockraising (Table 12).

The health authorities of several states on both sides of the United States-México border carried out a series of control programs with the advice of the Organization. In the cities of Mexicali, Tijuana, Juárez, and Matamoros, in México, 25,815 dogs were vaccinated and 22,070 stray dogs were destroyed as part of the border rabies control program. In the cities of San Diego and El Paso, 18,848 dogs were destroyed, and it was estimated that at least 60% of the dog population had been vaccinated.

In accordance with the recommendations of the XIII

TABLE 12. REPORTED CASES OF RABIES IN MAN AND IN ANIMALS, 1965 ^a

Country or other political unit	Number of cases	
	In man	In animals
Argentina.....	19	...
Bolivia.....	5 ^b	...
Brazil		
State of Paraíba.....	2 ^b	...
State of Pernambuco.....	3	...
State of São Paulo.....	21 ^b	...
Canada.....	—	1,741
Chile.....	1	156
Colombia.....	103	...
Costa Rica.....	—	28
Cuba.....	—	48
Dominican Republic.....	22	82
Ecuador.....	14	310
El Salvador.....	4	144
Guatemala.....	5	187
Haiti.....	2 ^b	...
Honduras.....	1	27
México.....	33	202 ^c
Nicaragua.....	1	...
Paraguay.....	2	...
Perú.....	7 ^b	...
United States of America.....	1	4,236
Puerto Rico.....	—	17
Uruguay.....	1	220
Venezuela.....	15	529

— None.

... Data not available.

^a Based on official reports received at PASB through 19 May 1966.

^b Incomplete data.

^c Reporting area of 4 states.

Meeting of the United States-México Border Public Health Association, the Organization prepared the agreements, and assisted in developing plans, for conducting programs that will firmly support the rabies campaigns along the border in 1966.

The role of predatory animals in the epidemiology of rabies, on both sides of the border, was discussed at an international meeting, held in El Paso in February 1965, sponsored by the Organization. The deliberations centered on the technical aspects of the program to control predatory animals and on a review and assessment of program activities carried out. The meeting was attended by representatives of public health, agriculture, wild animal control agencies, veterinarians from the armed forces of the United States, and of México, and staff members of the Organization. An example of activities in predatory animal control in the area was the program covering almost the whole of

I. PROTECTION OF HEALTH: DISEASES

Sonora state, in México, which was carried out in early 1965. In the course of that program, 3,890 baits were laid, each of which effectively covered an area of 10 km². The Organization assisted in training the personnel in charge of this activity and also gave advice on the execution of the program.

The El Paso Field Office continued to collect and disseminate data on the control and epidemiology of rabies in the border area. Up to November, 334 rabies cases had been reported in the Border States of both countries. A special meeting on rabies in bats was held in October in the city of Nogales and was attended by representatives of the public health services of the states of Sonora, México, and Arizona, United States of America. The El Paso Field Office also participated in this meeting, as well as in the meetings of the Binational Health Councils on rabies control in Agua Prieta, México, and Douglas, Arizona, U.S.A.

During the first quarter of the year a severe epizootic outbreak of paralytic rabies occurred in bovine cattle in the Northeast States of Argentina and caused severe livestock losses. The first human case of bat-borne rabies in that country was also reported in the Jujuy area. The Organization provided a consultant specialized in bat control, and laboratory services and personnel of the Pan American Zoonoses Center. The investigations undertaken were very useful in improving the paralytic rabies control campaigns being carried out by the Health Campaign Service of the Secretariat of Agriculture and Livestock in northern Argentina.

At the request of the Government of Brazil a consultant began a study of the main aspects of the rabies problem in all the states and federal territories of the country. The data collected will be used to prepare a plan for a national control campaign which the Federal Commission of Rabies Control will submit to the Government in early 1966. The Oswaldo Cruz Institute in Rio de Janeiro was provided with reagents and specialized equipment parts for the Rabies Vaccine Production and Diagnosis Laboratory, and a short-term consultant helped with the typing and classification of the virus strains used in the production of this vaccine.

The III Costa Rica-Nicaragua Border Meeting was held on 19 September in San Juan del Sur, Nicaragua, to discuss rabies control in both countries. The specific reason for calling the meeting was an epizootic outbreak of rabies that had occurred in May in Guanacaste province, Costa Rica, during which 28 animal cases were reported. The meeting was attended by the Ministers of Public Health and Agriculture of both countries and by specialized staff from those ministries and

from the Organization. An immediate result of the meeting was a special rabies control program carried out along the border area.

Assistance was given to the Government of Grenada in conducting a rabies campaign aimed chiefly at eliminating the mongoose population—the principal rabies reservoir on the island—as well as in establishing a canine rabies control program. The Organization also provided staff to train local personnel in trapping and poisoning techniques, as well as in vaccination procedures. In this campaign, 160,000 baits and 265 traps were set in 7,964 acres, and an estimated 2,000 mongooses were eliminated. In the vaccinated program, over 8,000 dogs were registered and vaccinated in the principal cities.

In August another canine rabies outbreak occurred in Montevideo, Uruguay, during which 220 animal cases and 1 human case were reported. The Organization collaborated with the Government in planning a national campaign, and provided vaccines, supplies, equipment, and vehicles.

In the matter of obtaining strychnine, 1080 compound, zinc sulphur and vaccines for their rabies programs, assistance was given to the Governments of Argentina, Costa Rica, Dominican Republic, Grenada, Guatemala, Honduras, México, Perú, and Uruguay.

Brucellosis in cattle and in other animal species is widespread in the Americas and constitutes a serious public health problem because the disease affects man (Table 13) and also causes serious financial losses to livestock production in the countries. Because of those reasons, the Organization continued to assist the veterinary services conducting brucellosis control programs,

TABLE 13. REPORTED CASES OF BRUCELLOSIS IN MAN IN THE AMERICAS, 1965 ^a

Country or other political unit	Number of cases
Argentina.....	649
Brazil	
State of São Paulo.....	18 ^b
Canada.....	34
Colombia.....	40
Cuba.....	18
El Salvador.....	3
Honduras.....	1
Perú.....	1,029
United States of America.....	258
Uruguay.....	6 ^b

^a Based on official reports received at PASB through 19 May 1966.
^b Incomplete data.

even though these programs are limited for financial reasons, with the exception of the program in the United States of America.

In 1965 Argentina concluded an Agreement to carry out a nationwide brucellosis control program, which will mainly cover the dairy areas of the country and be aimed primarily at eliminating reactors and vaccinating the calf population.

The Organization collaborated with the School of Agricultural Sciences and Veterinary Medicine of the National University and with the laboratories of the Livestock Department, of Chile, in the obtention of antigens, reagents, and advisory services for a study of brucellosis in goats in Cajón del Maipo. The Rivanol antigen test was used in these studies because it is more sensitive than other diagnostic serological tests.

In Panamá the Public Health Service began a survey of brucellosis in the Central Region. The survey includes diagnostic, serological, and milk tests of animals in 1,500 dairy farms, as well as agglutination tests in 8,000 samples of human sera from the same region.

Bovine tuberculosis causes large financial losses; it is transmissible to man. Viewed as an agricultural and financial problem and not counting the cost of the

disease in man, the picture of bovine tuberculosis is not much different from that of brucellosis.

Although the data available do not suffice to establish a definitive rate of infection, it is evident that the disease is widespread. The infection rate, however, differs from country to country and among geographical areas within countries.

The successful campaigns carried out in the United States of America, Canada, and Europe show that tuberculosis in animals can be eradicated. Although the high cost of control programs has hampered development of such programs in other countries, the efforts of Venezuela to organize a bovine tuberculosis eradication campaign should not be overlooked. The campaign covered 5 states and the Federal District, and in less than 6 years managed to reduce the infection rate from 3.39% to 0.34%.

Statistical data available on reported cases of other zoonoses are summarized in Table 14.

Pan American Zoonoses Center

Two important events occurred during the year and paved the way for the physical and operational expan-

TABLE 14. REPORTED CASES OF ANTHRAX, HYDATIDOSIS, LEPTOSPIROSIS, TRICHINOSIS, TRYPANOSOMIASIS, AND TULAREMIA IN THE AMERICAS, 1965 ^a

Country or other political unit	Anthrax	Hydatidosis	Leptospirosis	Trichinosis	Trypanosomiasis	Tularemia
Argentina.....	62	205	...	55	1,974	...
Barbados.....	...	...	4	...	...	...
Brazil						
State of São Paulo ^b.....	...	...	52	...	...	...
Canada.....	—	...	...	23	...	1
Chile.....	174	...	...	...	...	...
Colombia.....	5	...	...	...	...	...
El Salvador.....	114	...	...	...	158	...
Haiti ^b	24	...	—	...	...	...
Honduras.....	—	...	...	—	—	...
Jamaica.....	...	...	13	...	...	...
Martinique.....	...	...	1	...	...	...
Panamá ^b	10	...	...	...	2	—
Panamá Canal Zone.....	...	...	1	...	...	...
Perú.....	...	153	...	...	...	...
United States of America.....	7	...	66	108	...	246
Puerto Rico.....	...	...	1	...	...	...
Uruguay ^b	50	189	...	—	—	...
Venezuela.....	1	...	...	...	...	...

— None.

... Data not available.

^a Based on official reports received at PASB through 19 May 1966.

^b Incomplete data.

sion of the Pan American Zoonoses Center. First, the Government of Argentina donated, through its Ministry of Social Welfare and Public Health, new premises in the metropolitan area of Buenos Aires, and secondly it presented a project to the Special Fund of the United Nations to strengthen the Center's technical assistance program. These steps will greatly help the Center to provide suitable technical advisory services to the Governments of the Hemisphere in the planning, organizing and execution of programs of control and eradication of the zoonoses which most frequently affect human health and economy. The most important zoonoses—rabies, hydatidosis, brucellosis and animal tuberculosis—will be the target of the Center's program of education and training, technical support services, and research.

Research

Some of the principal research studies carried out during the year are summarized below.

Brucellosis. Studies were commenced on the typing of *Brucella* strains isolated from human patients and animals in several countries of Latin America. The typing was done by using the conventional biochemical methods, nonspecific serums and phage susceptibility. Of the strains received from Brazil, Chile, Colombia, México, Perú, and Uruguay, 48 were human and 52 animal.

An investigation into the natural occurrence of brucellosis in hares (*Lepus europeus*), found in large quantities in the Azul and adjacent areas in the province of Buenos Aires, was begun. The laboratories captured and processed 694 hares. One out of 135 pools of organs revealed the presence of *Br. suis*. The work carried out indicated that, up to that time, brucellosis in hares had not spread to any great extent in the area, and that the original infection of *Br. suis*, probably brought from Europe, was maintained.

Because strong local reactions had been noted after revaccination, safety trials made in 1964 with a brucellosis bacterin manufactured with nonagglutinogenic strain 45/20 (McEwan) were repeated in 1965. In October, 30 head of cattle were vaccinated, 14 of which had been vaccinated in 1964. During 9 days of observation, 4 animals showed local edemic reactions and developed small nodules at the site of inoculation; 11 of these 12 were in the group vaccinated the previous year. The remaining 18 showed no local reaction.

Hydatidosis. Studies on drug treatment of dogs in-

fectured with *Echinococcus granulosus* were continued. The naphthalene compound 62-415 was found to be effective in eliminating the infection when administered in doses of 200 and 250 mg/kg of body weight, but toxic effects were observed. In trials in which a lower dose, of 150 mg/kg, was used on a group of 40 dogs, with 39 controls, results showed that a high number of treated dogs had remained infected. Considering that the unfavorable results may have been caused by prolonged storage of the drug, a fresh batch was obtained for a new study. In this trial, 2 groups of 10 dogs each were treated with 200 mg/kg, 45 and 66 days after infection with 100,000 protoscolices of *E. granulosus*, and 16 animals were kept as controls. All the dogs were sacrificed 30 days after treatment, and it was found that 19 of the 20 treated dogs and all of the controls were infected.

At the request of the health authorities of Argentina a trial was conducted on compound No. 16,842 for use against canine echinococcosis. A group of 26 dogs were artificially infected with a dose of 100,000 protoscolices of sheep origin. Forty-five days after infection, 13 controls were sacrificed and showed an average infection of 3,131 *Echinococcus* per dog; the other 13 were administered a dose of 70 mg/kg of body weight. During a 48-hour-period of observation only 1 dog showed signs of intoxication, and it recovered quickly. These dogs were sacrificed one month after treatment and all were found infected, with an average of 903 *Echinococcus* per dog. New trials were begun.

A comparative study of several tests for the diagnosis of hydatidosis in human beings was conducted in the province of Neuquén, one of the heaviest infected areas in Argentina. The survey was carried out on 2 groups: 171 members of the population of Los Catutos; and 37 persons having a clinical history of hydatidosis, including some who had undergone surgical treatment. In the entire group of 208 persons the Casoni intradermal test was applied and blood samples were taken for the purpose of conducting hemagglutination and latex plate tests. In a preliminary tabulation of the results of the tests in the 37 persons with a history of hydatidosis, the Casoni test gave 62.5% positives on the early reading and 40.6% on the delayed reading; the hemagglutination test gave 46% and the latex test 75.6% positive reactions. In the 171 inhabitants of Los Catutos, 54.5% were positive on the early Casoni reading and 34% on the delayed reading; 5.3% to the hemagglutinations, and 18% to the latex test.

Leishmaniasis. Two studies on *Leishmaniasis brasiliensis* sp. were carried out—one dealt with the multipli-

cation of the organism in tissue culture, and the other consisted of a trial of the efficacy of the drug Daraprim in the treatment of experimentally infected hamsters.

Leptospirosis. A survey to determine the incidence of infection of *Leptospira pomona* and *L. sejroe* in cattle in the Azul (Argentina) area was conducted using the microscopic agglutination test. Out of 1,533 serum samples from 38 rural establishments, 926 (60%) were found to have titers of 1:200 or greater for *L. sejroe* and 7 (0.5%) for *L. pomona*. Attempts to isolate strains from the *Hebdomadis* group in Argentina failed.

A second survey made on surface waters subject to contamination with cattle urine failed to reveal the presence of pathogenic serotypes.

Rabies. The transmission of rabies in laboratory animals via the respiratory route was investigated. Of 308 animals inoculated nasally or by aerosol, 159 (51.6%) contracted rabies. These findings are of considerable interest in the epidemiology of rabies and in connection with precautions that should be taken when working in the laboratory with fixed or recently isolated rabies virus.

Research work done on rabies included studies on the adaptation of rabies virus of bovine origin to different types of tissue culture cells; the diagnostic value of the fluorescent-antibody test in infected tissues maintained at room temperature for various periods; potency testing of lyophilized vaccine exposed for 1 year at various temperatures; ecological and virological studies on *Desmodus rotundus* in northern Argentina; the resistance of *Desmodus* to pseudorabies; and the use of immunofluorescent technique in the differential diagnosis of rabies and pseudorabies.

Trypanosomiasis. A strain of *Trypanosoma* was isolated from the peripheral blood of 2 cows attacked by paralytic rabies in Salta, Argentina. Unsuccessful attempts were made to subculture the parasite.

Tuberculosis. A comparison of Sula, Stonebrink and Lowenstein-Jensen culture media for the isolation of *Mycobacterium bovis* from 124 tubercular ganglia was made. Sula media gave the earliest growth and largest number of isolations, and the Stonebrink media gave the most abundant growth.

Technical Services

The Center continued to provide the countries with technical services on planning, execution, and evaluation of control programs.

Center staff collaborated with the Governments of

Chile, Ecuador and Perú where, respectively, a complete study of the zoonoses situation was carried out. Visits were made to Chile, Colombia and Uruguay in order to assist in dealing with the problems of bovine tuberculosis and brucellosis, goat brucellosis, hydatidosis and rabies control. A specialist visited Chile, Perú and Uruguay as well as several provinces in Argentina to determine the current situation with respect to control of rabies and to provide technical assistance in diagnosis and the production and control of antirabies vaccines and serums.

The Center analyzed, for diagnosis, 70,602 samples (Table 15).

Education and Training

Center staff, and 3 consultants provided by the Organization, cooperated with the Argentine Government in the fields of food microbiology and organization of laboratories. A special project was the designing and building of the animal colony quarters at the National Institute of Health, in the Ramos Mejía district, where the Center has its new headquarters.

The Center provided long-term training in special studies on the zoonoses to 5 postgraduate students from Argentina, Bolivia, Brazil, Ecuador, and Paraguay and to 1 laboratory technician from México. Three technicians from Argentina and 1 from Paraguay received short-term training in the laboratory

TABLE 15. SAMPLES AND BIOLOGICAL PRODUCTS PROCESSED AT THE PAN AMERICAN ZONONOSES CENTER LABORATORIES, 1965

Material	Number of specimens received according to origin		Total
	From external sources	From Center's research activities	
For diagnosis:			
Whole animals	121	1,328	1,449
Other specimens	58,550 ^a	12,052	70,602
Biological products for testing	82	—	82
Zoological specimens	—	24	24

— None.

^a 58,352 specimens were blood samples sent by the Pilot Program of Brucellosis Control in Argentina.

aspects of brucellosis. Practical instruction in the fluorescent antibody technique for the detection of rabies was given to 2 technicians from Argentina and 1 from México. An Argentinian veterinary student received technical advice in studies concerning the application of the Rivanol test to the diagnosis of bovine brucellosis.

In Lima, Perú, 27 persons attended a 12-day course, in February, on the use of the fluorescent antibody technique in the diagnosis of rabies and 11 professionals completed the practical phase of the course.

The Center, in collaboration with the National Microbiological Institute Carlos G. Malbrán and Argentina's Inter-Ministry Coordinating Commission for Zoonoses, conducted in May in Buenos Aires a comprehensive rabies course including epidemiological studies and laboratory practices. A total of 19 professionals from Argentina, Bolivia, Brazil, Chile, Perú and Venezuela attended, as well as 1 observer from Argentina and 2 from Uruguay. The Center gave short-term courses on rabies diagnosis and tissue culture techniques to professionals from the University of Tucumán, Argentina, and members of the Argentine Armed Forces. At the request of the dean a short-term course on zoonoses was given in August for students of the School of Medicine of the University of Salvador in Buenos Aires, Argentina.

Information and Publications

The scientific material published during the year were 2 papers on brucellosis, 2 on rabies and 1 on hydatidosis. Reprints and photocopies of periodical publications were supplied on request or sent in exchange. Lists of references dealing with zoonoses were prepared upon requests of individuals or institutions from Argentina, Ecuador, Perú, Trinidad, and the United States of America. The quarterly information bulletin *Zoonosis* was revised to meet the expanding interest of both Spanish- and English-speaking readers.

Pan American Foot-and-Mouth Disease Center

The Pan American Foot-and-Mouth Disease Center continued performing its 4 main activities: diagnosis, research, training, and the provision of technical and field services. In response to requests received from the countries, these activities were intensified within

the budgetary and physical limitations of the Center.

There was more than usual activity in the matter of program planning in the countries. The most influential note of this aspect was the declaration of the Inter-American Committee of the Alliance for Progress, proposed in April, which both recommended that financial assistance be given to country programs and indicated the interest of the Inter-American Development Bank and of the International Bank for Reconstruction and Development in giving consideration to loan requests for financing the coordinated foot-and-mouth disease campaigns.

Significant progress was made in research, and additional experience was gained in the use of attenuated live virus vaccine in Brazil and in Colombia, and more particularly in Ecuador where the campaign is using vaccine prepared from strains furnished by the Center.

The results of research were diffused through the training program, which has trained personnel from almost all the countries, and through the technical publications issued by the Center.

There was a considerable increase in the number of specimens for diagnosis received from countries free of foot-and-mouth disease, as well as in the active assistance, especially as regards vaccine production and control, given to countries affected by the disease.

Diagnostic and Reference Services

The Center received and examined 363 epithelium specimens sent in by 12 countries (Table 16) and 53 specimens of various sera coming from 6 countries (Table 17).

An investigation of vesicular stomatitis virus isolated in outbreaks in Salto, Argentina, and Alagoas, Brazil, showed that it was similar to the Trinidad-Coccal virus. The possibility of the existence of subtypes was fully confirmed by the World Reference Laboratory at Pirbright, England.

The Center continued to cooperate in the prompt diagnosis of outbreaks of vesicular disease in countries free of foot-and-mouth disease. The number of specimens received from Central America and Panamá during 1965 was almost double that of the previous year.

In connection with foot-and-mouth disease campaigns, studies were made of strains for use in vaccine preparation and control, coming from Argentina, Brazil, Perú and Uruguay.

The French Ministry of Agriculture requested the serological examination of an O strain from Guade-

TABLE 16. DIAGNOSIS AND TYPE IDENTIFICATION OF 363 VIRUS SAMPLES EXAMINED AT THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER, 1965

Country	Number of samples received	Type identification								Negative
		Foot-and-mouth disease						Vesicular stomatitis		
		O	A	C	OA	AC	OC	New Jersey	Indiana	
Argentina.....	112	28	31	27	1	16	—	—	—	9
Bolivia.....	15	—	—	15	—	—	—	—	—	—
Brazil.....	154	50	52	34	—	—	5	—	—	13
Colombia.....	2	—	2	—	—	—	—	—	—	—
Costa Rica.....	5	—	—	—	—	—	—	2	1	2
Ecuador.....	8	8	—	—	—	—	—	—	—	—
El Salvador.....	15	—	—	—	—	—	—	13	1	1
France.....	4	4	—	—	—	—	—	—	—	—
Nicaragua.....	5	—	—	—	—	—	—	4	—	1
Panamá.....	12	—	—	—	—	—	—	7	3	2
Perú.....	5	4	—	—	—	—	—	—	—	1
Uruguay.....	26	10	9	6	—	1	—	—	—	—
Total.....	363	104	94	82	1	17	5	26	5	29

— None.

loupe. On investigation it showed marked similarity to an O strain of South American origin. In addition, at the request the French Institute of Foot-and-Mouth Disease, a verification was made of strains of the O type Flanders-France and O-Spain, field strain, for use in vaccine production.

Studies showed that the A-6I virus from Argentina,

which the Center had identified as subtype A, persists in that country and causes interruptions in immunity, thereby hampering the vaccination program. The Center therefore asked the World Reference Laboratory for a confirmation.

Research on the complement fixing antigen in chick, mice, and rabbit embryos was also continued in order

TABLE 17. DIAGNOSIS AND STUDY OF 53 VIRUS SAMPLES EXAMINED AT THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER, 1965

Country	Number of samples received	Species	Type identification					Negative
			Foot-and-mouth disease			Vesicular stomatitis		
			O	A	C	New Jersey	Indiana	
Brazil.....	10	Guinea pigs	2	5	3	—	—	—
Costa Rica.....	5	Bovines	—	—	—	—	—	5
Costa Rica.....	4	Human beings	—	—	—	2	—	2
Jamaica.....	21	Horses	—	—	—	—	—	21
Panamá.....	7	Bovines	—	—	—	4	1	2
Uruguay.....	3	Guinea pigs	1	1	1	—	—	—
Venezuela.....	3	Guinea pigs	1	1	1	—	—	—
Total.....	53		4	7	5	6	1	30

— None.

to study the characteristics of the virus multiplied in them and its relation to the production of modified live virus vaccine.

In its 14 years of operation the Center has typed 6,642 samples of epithelium and provided useful information on the types and subtypes of foot-and-mouth disease virus existing in the Hemisphere.

Research Program

The research program continued to be devoted mainly to improving ways and means of protecting animals against foot-and-mouth disease. Work with attenuated live virus was intensified, as were studies on the survival of virus in convalescent animals. Similar studies were also made on animals inoculated with attenuated live virus vaccines.

Important work was done on improving an avianized vaccine, prepared from O Campos strain, which was used in Ecuador on the occasion of the O-virus outbreak that affected the provinces of Azuay, Cañar, El Oro, and Loja, in June.

Inactivated Virus Vaccine. The Center's consultant stationed in Lima cooperated with the Peruvian National Veterinary Pathology and Research Center in the production, by the Frenkel method, of inactivated foot-and-mouth disease vaccine; production reached a high stage of development. He also advised the National Institute of Animal Biology of Bolivia on the organization of vaccine production, which was begun during the year. Argentina expanded its control of commercially produced vaccines for the national campaign up to more than 40% of the batches. Uruguay completed the building of laboratory facilities for establishing a system of testing vaccines produced in the country. For the same purpose, Chile planned to expand and remodel its laboratories at the Bacteriological Institute. The Government of Paraguay began negotiations for the commercial production of inactivated foot-and-mouth disease vaccine in the country.

The Center continued its research, on inactivated vaccines using the tissue culture method for virus production; on the use of physical and chemical means for inactivating the virus, and of such substances as mineral oil as adjuvants; and on new control and potency tests which do not require the use of cattle.

An inactivated vesicular stomatitis vaccine was prepared from Alagoas (Brazil) virus, multiplied in chick embryo. The immunity tests were carried out in guinea pigs, the vaccine being administered intracutaneously.

Attenuated Live Virus Vaccines. Under the research program, studies were made of strains of attenuated foot-and-mouth disease virus, particularly in chick embryo. The viability of bi- and trivalent vaccines was confirmed; the pathogenicity characteristics were similar to the ones observed when individual strains were used.

On cattle farms in Brazil, the Center administered over 13,000 doses of mono- and polyvalent vaccines.

A total of 3,600 doses of avianized A Cruzeiro strain virus and about 5,000 doses of avianized OA bivalent vaccine were administered in the plains of Bogotá, Colombia, in compliance of a program planned in cooperation with the Center.

Avianized A Cruzeiro strain vaccine, supplied by the Center, continued to be administered on cattle farms along the littoral of Ecuador and only 2 foci of this type of foot-and-mouth disease were confirmed during the year. Approximately 70,000 head of cattle were inoculated. To combat an outbreak of type O foot-and-mouth disease that occurred south of the Ecuadorian mountain range the Guayaquil laboratory of the General Directorate of Veterinary Public Health vaccinated over 200,000 head of cattle with O Campos strain, attenuated in chick embryo at the Center.

Immunity duration was tested in Chile in cattle vaccinated 9 months earlier with avianized A Cruzeiro strain, 49th passage. The test revealed that the level of immunity of one fifth of the animals which had been inoculated with virus A intradermally on the tongue was adequate, thus confirming the need for considering the effects of vaccination on cattle, especially young cattle, which are being inoculated for the first time.

The same kind of work was carried out in Brazil, Colombia, and Ecuador. The laboratories of the Center confirmed the protection of calves vaccinated with avianized A virus, 49th passage, among a group that had been vaccinated at age 1 month, and another at age 8 months. Seven months after revaccination, given 8 and 15 months after the first dose, respectively, all animals tested withstood the intradermal inoculation of the virus in the tongue.

Simultaneously with these studies, others were carried out to ascertain the survival of avianized O and A strains in guinea pig and cattle. It was possible to identify the virus, up to 96 hours after inoculation, in the spleen, lymph nodes, muscles, and blood of guinea pig, but not after 142 hours. In cases of revaccination, it was not possible to isolate the virus in any organ after a lapse of 48 hours. In cattle vaccinated with an O strain, virus was recovered from the esophagus up

to 96 hours later, but not after 240, 384, and 504 hours.

Cell and Tissue Cultures. This Section was reorganized about the middle of the year. New studies were begun on: (a) kinetics of foot-and-mouth disease virus in diploid cell lines previously established to improve vaccine production techniques; (b) tissue methods to facilitate isolation of the virus from specimens in which only a small amount of the virus is present; and (c) morphological transformation of diploid cells induced by foot-and-mouth disease virus. Experiments in connection with purification of foot-and-mouth disease virus and extraction of its nucleic acid were begun in cooperation with the Biophysical Institute of the University of Brazil; and, in connection with vaccination tests, several thousands of serum neutralization tests were performed using the tissue culture technique.

Virus Carriers. To improve the research work on this important aspect, begun in 1964, a comparison was made of several techniques for the collection and treatment of samples from mouth, pharynx, and esophagus; a comparison was also made of systems for isolating virus in tissue culture and unweaned mice.

Some samples of A and C virus recovered from cattle which had had the disease several months earlier, revealed a low titer in virgin cattle, and simultaneously, a high degree of pathogenicity for swine, with a recovery of the titer in cattle, after passage through pigs. These results would seem to suggest the possibility that the virus of healthy bovine carriers is capable of originating an outbreak in susceptible animals contacts, especially pigs. Another important discovery was the isolation of virus in healthy calves which had never been vaccinated and had no antibodies against the particular type of virus.

Food Technology. This program was begun in 1965 in collaboration with the Veterinary Service of the United States Air Force. During the first half of the year the refrigeration and freezing equipment were installed and a sterile chamber was built. Studies to test the stability of foot-and-mouth disease virus at 37°C were begun during the third quarter of the year, and the results indicated the probable range of heat inactivation for each strain studied.

Technical and Field Services

Campaigns and Coordination. The Center began to take steps to comply with the Recommendations of the South American Foot-and-Mouth Disease Confer-

ence (Rio de Janeiro, Brazil; 1964) and the Resolutions of the Third Annual Meetings of the Inter-American Economic and Social Council (Lima, Perú; 1964) in regard to the promotion, coordination, and financing of national foot-and-mouth disease campaigns in South America. A series of meetings and interviews were therefore held with officials of the Inter-American Development Bank, the International Bank for Reconstruction and Development, and the Alliance for Progress. As a result, foot-and-mouth disease campaigns will be regarded as suitable projects for receiving loans from international credit agencies. The April Declaration of the Inter-American Committee of the Alliance for Progress was of great importance in that regard, in that it recognized the seriousness of foot-and-mouth disease as an obstacle to development in the countries of South America and the need for promoting multinational campaigns, and recommended that PASB be responsible for coordination of the campaigns and that it study the consequent expansion of activities of the Pan American Foot-and-Mouth Disease Center.

In compliance with those resolutions, the Center paid special attention to the organization of foot-and-mouth disease control in the state of Rio Grande do Sul, in Brazil, and in Chile, Paraguay, and Uruguay which form a single unit, from the animal-health standpoint, with Argentina, where the campaign covered almost the entire country as it entered its fourth year of activities. The two annual meetings of the Regional Technical Committee on Animal Health of these countries, in which the Center participated, studied and approved measures to improve their common campaign against the disease.

The Agreement made between the Government of Colombia, the International Regional Organization for Health in Agriculture and Livestock, and the Pan American Sanitary Bureau for the prevention of foot-and-mouth disease in the northwestern area of the Chocó department in Colombia rounded its second year. The year's work included a complete census of the cattle of the area, systematic control of the movement of all animals and products of animal origin, and periodic inspection of cattle-raising farms and herds. It was in this way that vesicular stomatitis, New Jersey-type, was identified for the first time in the area.

The first meeting of the Executive Committee on the Agreement between the Governments of Colombia and Ecuador and the Pan American Sanitary Bureau for the development of a foot-and-mouth disease control program in the border area between the two countries was held at mid-year. The relationship established contrib-

uted greatly towards controlling a type A outbreak of foot-and-mouth disease which appeared in September in the municipality of Aldana, in the department of Nariño, Colombia; the area is close to that country's border with Ecuador where by October the disease had appeared in the province of Carchi. The Center submitted to the Governments of Bolivia, Ecuador, and Perú a draft proposal for similar action along their border areas. Prior to the approval of these proposals, activities were undertaken, by common agreement between the animal health authorities at both the local and central levels, which proved particularly useful in cases of emergency, such as the type O outbreak which spread from northern Perú to the southern provinces of Ecuador. Intensive vaccination on both sides of the border made it possible to control and confine the foci before the end of the year. Perú, on its part, offered vaccine free of charge to the Ministry of Agriculture of Bolivia for use on its side of a border strip under mutual protection.

Vaccine Production and Control. Foot-and-mouth disease vaccine production in South America increased during 1965. Argentina, Ecuador, and Venezuela met all the planned requirements for their national campaigns, which covered all or the major part of their bovine population affected by the disease. Brazil, Chile, Colombia, Perú, and Uruguay met their vaccine requirements; the two last-named countries are now in a position to produce enough vaccine for their national campaigns. Paraguay, in turn, authorized the installation of private laboratories.

The Center continued to stimulate and advise the countries on establishing and improving their systems for the control of vaccine quality. Argentina improved and intensified its work, and was considering building a new laboratory at an estimated cost of \$1.25 million with international financial aid. The Federal Government of Brazil inaugurated the control laboratory at Punta Gruesa in Rio Grande do Sul—the first of a series planned for the country. In Chile the Ministries of Agriculture and Public Health began the pertinent study for establishing an official control service. Perú completed the building of stables for the isolation of cattle at the National Center of Animal Pathology, and reached a position whereby, as is now the situation in Ecuador and Colombia, it can perform control tests. Uruguay advanced preparations to begin vaccine production control. Venezuela continued with its system of autocontrol of all batches of vaccine produced by the Center of Veterinary Research.

Distribution of Biologicals. The Center sent biologi-

cal products to 28 laboratories of institutions dealing with foot-and-mouth disease in Bolivia, Brazil, Chile, Colombia, Ecuador, France, Great Britain, Perú, and Uruguay.

Evaluation of the Campaigns. North and Central America and the Caribbean Area remained free of foot-and-mouth disease during 1965.

In South America, the Center examined the evaluation programs underway in Argentina. The data collected were tabulated and analyzed for the purpose of evaluating vaccine behavior in the field. In cooperation with an expert, certain modifications in the vaccine control system were proposed so as to raise quality requirements. A record number of vaccinations was given by the national foot-and-mouth disease campaign, with 41,600,000 head of cattle vaccinated in February, a figure estimated to be over 90% of the bovine population in the campaign area. The vaccinations were repeated in June and October. Approximately 40% of all batches of vaccine produced by private industry was subjected to potency tests; one tenth was rejected. A recrudescence of foci occurred in the north-central provinces in the second half of the year, particularly of the O virus type.

In cooperation with the Center, the work of the laboratory of the National Institute of Animal Biology, of the Ministry of Agriculture and Livestock, in Bolivia, was improved and expanded. Complement fixation tests for diagnostic purposes yielded sufficient experience to permit making routine analyses and the first typing of a New Jersey vesicular stomatitis virus in material received from Santa Cruz de la Sierra. In vaccine production, it was possible to prepare experimental monovalent batches. The pilot vaccination project in Cochabamba was continued. The Center furnished the necessary doses of vaccine, and during the year there were only 3 small foci of the disease caused by type C virus, which did not spread.

In Brazil the foot-and-mouth disease campaign was launched in mid-December in the state of Rio Grande do Sul, in localities adjacent to Uruguay and Argentina, according to the schedule of the general plan for that state, which had been drawn up in consultation with the Center. The Federal Government contributed 400 million cruzeiros and also inaugurated the vaccine control laboratory at Punta Gruesa, which will service the southern part of the country.

The opening of the international market (Chile, Spain, France, Italy, and Perú) for the bovine industry (meat and livestock) of Colombia resulted in an intensification of foot-and-mouth disease vaccinations in the

departments along the Atlantic coast, particularly in that of Magdalena. It was estimated that the average vaccine production of recent years, consisting of some 6 million doses, would have to be increased by at least one fourth. The Executive Committee of the Colombia-Ecuador Border Foot-and-Mouth Disease Agreement prepared in cooperation with PASB the plan of operations for the campaign, to be initiated in January 1966 in the Department of Nariño, Colombia, and the province of Carchi, Ecuador.

The Government of Chile, through the National Foot-and-Mouth Disease Committee established in 1964, concentrated on the study and preparation of a national project to combat the disease, with the advice of Center and PASB staff. The project included training for and control of domestic production of vaccine, in both private and State laboratories, and the execution of a systematic and gradual campaign of vaccinations, from south to north of the country, which would require international financial assistance. At the request of the Chilean Development Corporation and the International Bank for Reconstruction and Development, the Center prepared the specifications of health requisites to be met for the cattle being imported by the Corporation under a loan from the Bank.

In the first months of the year, an intensive foot-and-mouth disease epidemic caused by type A virus broke out in the southern province of the central valley of Chile and spread, but with less intensity, towards the north of the country.

The General Directorate of Animal Health established in 1964 under the Ministry of Agriculture in Ecuador continued to advance in organizing its foot-and-mouth disease control activities, especially as regards attenuated live virus vaccine production. In 1965 it met all the requirements for the campaign against type A virus, which affects the littoral, and in July it began to produce avianized type O vaccine, with a strain furnished by the Center, to combat an outbreak in the south of the country.

The efficiency of the official vesicular disease control service and the effectiveness of border agreements with neighboring countries were put to the test when foot-and-mouth disease caused by a type O virus spread to the south of Ecuador in June, and another outbreak of the A type invaded Carchi province from Colombia in November. Coordinated efforts promptly controlled these foci in the southern area, where they persisted without further importance, and made it possible to virtually eradicate them from the northern part of the country.

In Paraguay, at the request of the International Bank for Reconstruction and Development, the Center prepared a report on the chapters on animal disease control, especially foot-and-mouth disease, of the Second Project for the Development of the Cattle Industry in the Republic of Paraguay, which was submitted by the Government for financing by the Bank. Favorable recommendation was given to the program for installing vaccination corrals, for providing livestock farms with the facilities for preserving vaccines, and for building one or more laboratories for domestic production of foot-and-mouth disease vaccine and other biological products.

In Perú the laboratory at the National Research Center on Animal Pathology of the Ministry of Agriculture produced 3,412,540 doses of trivalent OAC vaccine, which exceeded the normal demands of the livestock industry. As regards foci, 1965 was a mild year, except for a widespread O virus outbreak in the extreme north, in Piura province.

The epizootiological picture in Uruguay was very satisfactory, except for a few low-morbidity O virus foci in the third quarter of the year. That the foci did not cause outbreaks was probably the result of the high rate of voluntary vaccinations given in recent years, which the Government is desirous of regularizing through the official campaign.

In Venezuela the foot-and-mouth disease incidence remained low throughout the year, and most of the cases verified were caused by type O virus. The rare instances in which A type was identified were attributed to the extensive use of vaccine prepared with avianized A Cruzeiro strain, modified at the Center.

Education and Training

The Center's XX Training Course was held in June in Maracay, Venezuela, for veterinarians from countries free of foot-and-mouth disease; 9 fellows with awards provided by the Center, and 1 provided for by the Institute of Agrarian Reform of Colombia, attended. The XXI Course took place in September in Rio de Janeiro, Brazil, and was attended by 12 Center fellows and 1 from Venezuela. The latter course dealt mainly with principles for evaluating foot-and-mouth disease campaigns. Eleven fellowships for training at the Center were awarded for personnel of programs underway in Argentina and Venezuela and of laboratories in Colombia and Perú.

Dissemination of Information

The following publications of the Pan American Foot-and-Mouth Disease Center were prepared and distributed during the year: Vol. 2, Nos. 11 and 12 (1964), and Vol. 3, Nos. 1 to 8 (1965). The 10 issues totaled 267 pages and included 1,518 bibliographical references, 148 summaries of scientific papers, 3 epizootiological sheets, 1 information bulletin, and 3 full reprints of scientific articles. Copies were distributed to 513 recipients, of which 29 were located outside the Americas.

Five articles were published or prepared for publication on the following subjects: immunological relation between the virus of foot-and-mouth disease and Coxsackie virus; carriers of foot-and-mouth disease; infectivity of cattle and pigs with 3 strains; relation of some strains of virus isolated from carrier cattle to the serotype of Indiana vesicular stomatitis virus; and study of certain characteristics of virus strains isolated from foot-and-mouth disease carriers without a detectable antibody level. These articles appeared in publications of both the Hemisphere and Europe.

Financing and Personnel

The budget of the Center continued to be provided by the Program of Technical Cooperation of the Organization of American States. The contribution of the Government of Brazil for maintenance and operation of the Center was received, as was the country's National Research Council's donation for research. At 31 December the personnel of the Center numbered 145 and consisted of 14 professional members, 107 auxiliary members, and 24 laborers. Three auxiliaries and the laborers are paid under grants respectively from the National Research Council and the Ministry of Agriculture of Brazil.

PLAGUE

Since the establishment of the Organization, plague has been an important though diminishing problem for some of the Member Countries; in fact, one of the main concerns of the founders of the PAHO was: "The adoption of measures for the disposal of garbage and

wastes to prevent the spread of bubonic plague and other diseases."

The application of classical methods has driven plague into the endemic foci of today. Although control and containment measures currently in use have been more or less successful, it has become obvious that before further progress can be made against plague, it will be necessary to undertake a thorough study of the nature of the disease in its present circumstances.

As a first step in a program that will include needed ecological research, a thorough study and evaluation were begun of all information available on plague in the Americas. On the basis of these data and observations to be made in the plague foci a series of ecological research studies will be designed.

At present plague exists in the western part of the United States of America and in Bolivia, Brazil, Ecuador, Perú, and Venezuela (Table 18). Though in some of the South American countries the common rats are still involved in the manifestations of plague, in other foci these rodents have ceased to play a role or have been relegated to a secondary place, becoming but temporarily affected when the disease is rampant among the wild rodents and, like the domesticated guinea pigs, serving merely as links in the chain of events leading to a transition of the infection from the wild-rodent reservoir to man.

The incidence of plague in the Americas continued to increase, following the trend initiated in 1960. In 1965, 848 cases were reported to the Bureau, which represents an increase of 29.66% over the previous year.

The 149 cases reported in Bolivia occurred in the departments of Chuquisaca and Santa Cruz. At the request of the Government a team of experts from the

TABLE 18. REPORTED CASES OF PLAGUE IN THE AMERICAS, 1961-1965

Country	1961	1962	1963	1964	1965*
Bolivia.....	20	—	53	49	149
Brazil.....	106	36	39	285	119
Ecuador.....	105 ^b	326	258	194 ^b	374
Perú.....	68	164	72	125	200
United States of America...	3	—	1	°	6
Venezuela.....	6	1	—	—	—
Total.....	308	527	423	653	848

— None.

* Based on official reports received at PASB through 19 May 1966.

^b Corrected figure.

° Rodent plague reported.

Communicable Disease Center, United States Public Health Service, cooperated with the Bolivian health authorities in an epidemiological study of one of the outbreaks.

In Brazil the 119 cases reported were distributed in Alagoas, Bahia, Ceará, Paraíba, Pernambuco, and Rio Grande do Norte. At the request of the Government a short-term consultant provided by the Organization discussed with the national health authorities the development of a research project on plague in the Northeast. The consultant visited 5 of the most important plague foci in the country and assisted the national health authorities in the preparation of a comprehensive research project to be developed by the Ministry of Health in cooperation with the Organization. This project will include ecological studies, research on the natural infection of wild rodents and fleas and on the sensitivity of various species of rodents, study of the strains of plague bacillus isolated, and research on the intradomestic flea fauna and on some methods of control.

The incidence of plague in Ecuador was greater than in 1964. The 374 cases reported in 1965 occurred in the provinces of Chimborazo, El Oro, Guayas, Loja, and Manabí. The focus of Manabí presents special importance because of the danger that the disease might spread to other areas, especially the port of Guayaquil, with which there is commercial traffic by road.

The Government and the Organization signed an Agreement to develop a plague control project in the endemic area. The project was started in the first quarter of 1965, with the training of personnel, the acquisition of supplies and equipment, and progressive increase of activities. During the third quarter the trained personnel were incorporated to the provinces of Esmeraldas, Guayas, Loja, and Pichincha, which made it possible to substantially increase field operations.

From January to September the following control measures were carried out: 715,274 rats were trapped; 261,514 houses were inspected and treated; 1,954 fields and 37,696 m² of fencing walls were inspected; 591,290 caves were treated with cyanogas; 586,683 home visits were made; and 1,276 places were inspected and sanitized.

Most of the 200 cases reported in Perú occurred in the department of Piura, contiguous to the province of Loja in Ecuador. The other cases occurred in the department of Cajamarca. Lack of funds prevented carrying out a project for the study of the underlying factors influencing the occurrence and persistence of plague in Northern Perú.

The 6 cases in the United States of America occurred

in the States of Arizona, California, and New México. All patients had history of contacts with wild rodents, and field investigations demonstrated the presence of plague among wild rodents.

Plague in the Americas (PAHO Scientific Publication 115), published in June, contains a summary of the basic information available on plague in Argentina, Bolivia, Brazil, Ecuador, Perú, the United States of America, and Venezuela.

POLIOMYELITIS

Wherever environmental sanitation is faulty enteroviruses spread rapidly and give rise to high rates of infection in young children. As sanitation conditions improve, it becomes more difficult for enteroviruses to propagate; as a result more persons reach adulthood without suffering from an infectious disease and therefore lack immunity. To prevent the appearance of poliomyelitis outbreaks the countries have carried out vaccination programs against this disease in children.

In Rio de Janeiro, Brazil, a poliomyelitis outbreak lasted from May to August. Laboratory studies made at the Oswaldo Cruz Institute isolated type 1 virus in 43 of the 73 paralytic cases studied.

A poliomyelitis epidemic which began in Honduras in August and reached its peak in September caused 9 deaths among the 222 cases reported. The outbreak was virtually limited to infants, and 90% of the cases occurred in children under 5 years of age. The nationwide attack rate was 41 cases per 100,000, but there were marked geographical variations ranging from 1.6 cases per 100,000 to 99.9 cases per 100,000. Type 1 virus was found in most of the 79 specimens studied.

The extent of the epidemic made an emergency national vaccination campaign necessary, particularly so because, although no accurate information was available on the immunity status of the country's children, it was estimated that only 25% of the under-7 age group were protected. Six months before the onset of the epidemic a group known as the Friends of Honduras had vaccinated children in the Santa Bárbara area, but no data were available on the number of persons vaccinated, age, type of vaccine used, or home address. The Communicable Disease Center of the U.S. Public Health Service and the Pan American Sanitary Bureau assisted in planning and executing a nationwide campaign during which one dose of trivalent oral vaccine was administered

to 105,000 children under 5 years of age and to some 2,000 children aged 7 or older. Approximately 16,000 children received the second dose of oral vaccine.

A poliomyelitis outbreak in Nicaragua in February accounted for 101 paralytic cases and 2 deaths. Eighty percent of the cases occurred in children under 5 years of age in Managua and in the departments of Carazo, Chinandega, Estelí, and León. The mass oral vaccination campaign carried out administered 400,000 doses of trivalent vaccine to children under 10 years of age.

The United States of America reported 53 poliomyelitis cases, of which 43 were classified as paralytic. That figure is less than half the number reported in 1964, formerly the year of lowest incidence. The annual incidence of poliomyelitis has dramatically dropped since 1952, year when the largest number of cases was reported (including 21,000 paralytic cases) and the rate per 100,000 population reached 37.2. The comparable figure in 1965 was 0.025.

Preliminary data on 34 of the 43 paralytic cases reported in 1965 show that 32% occurred in 9 counties in Texas.

Stool specimens for laboratory tests were taken from 29 of the 43 cases, and poliovirus was isolated from 24. In 1 case, from New York, both poliovirus type 1 and type 3 were isolated from the same specimen; and 1 case, from Michigan, yielded both poliovirus type 2 and Coxsackie virus type A4. Compared with those in former years, poliovirus isolations in 1965 show a relative increase in type 2 isolations; the phenomenon is believed to be associated with the wider distribution of oral vaccine. According to poliomyelitis surveillance reports received from the Communicable Disease Center, no paralytic cases occurred in persons who had taken oral vaccine 30 days before the onset of the disease.

Since the 1964 national campaign in Venezuela, during which 1.5 million children were vaccinated, only 41 cases of poliomyelitis have been reported. Laboratory diagnosis of the cases was made by isolation of the virus and serological methods.

INFLUENZA

The Organization assisted the countries of the Hemisphere by providing them with periodic information on the status of influenza throughout the world, by supplying reagents for early diagnosis of the disease, and by giving advice on control activities.

The National Influenza Center, located at the Oswaldo Cruz Institute in Rio de Janeiro, Brazil, isolated and typed A2 influenza virus in patients with typical clinical symptoms of influenza.

A serious increase in the number of cases of respiratory infections similar to influenza was observed in Chile. The epidemic caused considerable school absenteeism in Santiago and Valparaíso in July. Laboratory tests confirmed the presence of A2 virus.

In the United States of America, above-normal levels of respiratory diseases were reported at the end of December 1964, but up to mid-January 1965 there was not sufficient proof to incriminate influenza. The disease was first observed in the states of Connecticut, New Jersey, and Massachusetts; virus A was confirmed as the causative agent. From this original focus, influenza was identified clinically and epidemiologically in 37 states and confirmed by laboratory tests in 36. The disease was widely distributed in the East, but the West remained free of it. In most states the disease began among children, accounting for 30% to 40% of school absenteeism, and later affected other groups of the community.

Virus A2 strains were isolated in 19 states, and in another 16 virus A activity was confirmed serologically. Virus B was isolated in 4 states, and its presence was confirmed by serological tests in another 5. One of the B strains isolated in a mild outbreak in Colorado was characterized by an antigenic variant.

In Caracas, Venezuela, in view of increased consultations by persons with a febrile respiratory picture in March, serum tests began to be taken in both the acute and convalescent phases. In 20% of the suspect patients the hemagglutination inhibition test showed a significant increase in antibodies which indicated virus A2 activity.

ARBOVIRUS INFECTIONS

The ecology of the Americas offers almost unlimited opportunities for the survival and spread of arthropod-borne virus. Of the more than 170 such viruses, over half have been isolated in the countries of this region from human specimens and from animals. Many of the arbovirus infections have proven not to be pathogenic for man, but as land settlement proceeds and new routes are opened up, bringing man into contact with ecological niches, the danger of infection increases.

Encephalitis

In the United States of America 134 human cases of encephalitis caused by arbovirus were reported; 82 of these were Western, 6 Eastern, 16 St. Louis, and 30 California encephalitis. Of the 15 states affected by these cases, only Texas and Colorado confirmed more than one type of arbovirus.

The 82 human cases of Western encephalitis were confirmed by the laboratory and included 1 fatal case, in the State of Minnesota; the ages of the patients ranged from 2 months to 75 years. The largest concentration of cases was found in areas in which floods had occasioned unusually large populations of mosquitoes. Western encephalitis virus was isolated from *Culex tarsalis*.

A total of 33 confirmed and presumed cases of California encephalitis was reported among persons under 16 years of age, who either lived in rural areas or had camped in the woods shortly before the onset of the disease.

The 16 cases of St. Louis encephalitis were reported in the states of Colorado, Illinois, Pennsylvania, and Texas. It is interesting to note that there were no St. Louis encephalitis cases in either Camden, New Jersey, or Houston, Texas, where extensive epidemics occurred in 1964.

The states of North Carolina, Florida, and Georgia reported a total of 6 cases of Eastern encephalitis confirmed by laboratory tests; 2 of the cases were fatal. Eastern encephalitis virus was isolated from mixtures of *Culiseta melanura* obtained from North Carolina, Florida, Maryland, New Jersey, and Virginia, and from a mixture of *Anopheles crucians* obtained in New Jersey.

México continued studies to establish the importance of Venezuelan encephalitis virus infection in man and domestic animals. The agent was isolated in México in 1963 and is prevalent in mosquitoes and wild animals, but no outbreaks have been detected in man or horses. However, laboratory tests point to Venezuelan virus encephalitis as the possible cause of certain sporadic human cases of fever of unknown origin.

An encephalitis outbreak which occurred in the province of Saskatchewan, Canada, began to wane by mid-September, but not before over 500 persons with suspicious symptoms had been hospitalized.

Dengue

During the first quarter of 1965, cases of dengue continued to be reported in the Caribbean Area in such

places as Jamaica, Puerto Rico, and Venezuela. In Antigua, after a lapse of 6 months without a single case being reported, apparently there was a recrudescence. The incidence, however, was low if compared with the wide epidemics recorded in Jamaica and Puerto Rico in 1963 and in Anguilla, Antigua, Dominica, Nevis, St. Kitts, and Venezuela in 1964.

In Venezuela the 1964 dengue epidemic spread to the state of Yaracuy, where 2,000 cases were reported, most of which occurred in Aroa, San Pablo, and Yaritagua, and then into the states of Barinas (144 reported cases) Ojedes (50), and Lara (5).

Hemorrhagic Fever

Ever since the 1964 epidemic in San Joaquín was brought under control by a drastic reduction in the rodent population, no new epidemics of hemorrhagic fever have been observed in Bolivia. However, sporadic cases of the disease were reported in 1965 both in the city of San Joaquín and in its environs, in houses in which the rodent control measures had not been sufficiently thorough. During the year, a survey was begun in an extensive geographical area which could be or had been afflicted by Bolivian hemorrhagic fever, and a sampling was made of both human and rodent populations in an area having San Joaquín as the center. The Organization cooperated in the project by putting the members of the Commission for the Study of Bolivian Hemorrhagic Fever in touch with the health authorities at the various ministries and institutes in Argentina, Brazil, Paraguay, and Perú. This field project made satisfactory progress and useful material was obtained for laboratory analyses; the studies made showed no new epidemic or endemic foci.

Field and laboratory investigations revealed that certain species of rodents become chronically infected by the virus of the disease and excrete large quantities of it in the urine for many months and perhaps even for the rest of their lives, which in the Bolivian environment essentially constitutes the basic principle of transmission of the virus to man. To obtain more information on the basic cycle of the disease the cooperation of the Rocky Mountains Laboratory in the United States of America was obtained. The research will include a series of studies on experimental transmission, particularly in certain types of acarids which might possibly play a role in the epidemiology of this disease.

In Argentina only 148 cases of human hemorrhagic fever occurred (3,026 cases were reported in 1964), and

I. PROTECTION OF HEALTH: DISEASES

therefore only a limited number of observations were made in the country.

Investigators in the Belém laboratory in Brazil isolated some virus strains from rodents, of the genus *Oryzomys*, trapped in the wooded areas of Amapá. Although as yet there is no evidence of the infection in man, these findings help to broaden the total picture and to give new dimensions to the interesting natural history of a disease which is still little understood.

PARASITIC DISEASES

Chagas' Disease

As a result of an agreement made in 1962 between the School of Medicine of the University of Chile and the Organization, standard antigen for the complement fixation test for the diagnosis of Chagas' disease was made available in 1965 to Argentina, El Salvador, Guatemala, Paraguay, and Perú.

The Government of Uruguay continued the studies to determine the importance of Chagas' disease in the country and the program to control the vector in the infested areas. The program was prepared in 1962 with the collaboration of a consultant provided by the Organization.

Onchocerciasis

As part of the commemoration of the fiftieth anniversary of the discovery of onchocerciasis (Robles' disease) in the Western Hemisphere, the Government of Guatemala organized a Symposium on Robles' Disease, which was held in Guatemala City, from 2 to 3 December. The Organization cooperated in the planning and organization of this meeting, through the provision of services of temporary advisers.

The meeting was attended by 55 participants from England, Guatemala, Honduras, México, the United

States of America, and Venezuela, and by staff members of the Organization from its Zone III Office. The program included papers on the epidemiology, diagnosis, treatment, control, and eradication of the disease.

Schistosomiasis

Schistosomiasis continued being a public health problem in areas of Brazil, the Dominican Republic, Puerto Rico, St. Lucia, and Venezuela.

The Organization continued to collaborate with the Government of Brazil in the work of the International Center of Snail Identification for the Study of Schistosomiasis, established in 1963 at the National Malacology Research Center of the National Institute of Rural Endemias, in Belo Horizonte, Brazil. The Center carries out research on taxonomy, variability, ecology, population dynamics, susceptibility to infection, snail physiology and genetics and other studies on the snails implicated.

During 1965 the Center was chiefly concerned with the study of a large amount of material collected in Argentina, Chile, Ecuador, Paraguay, and Perú. The work was carried out as part of the program of the Center, and the findings related to the *Biomphalaria* species will be used in the Introductory Guide for Intermediate Hosts of Schistosomiasis in the Americas, which is being prepared by the Organization. The first draft of the Introductory Guide was reviewed by a group of experts. The Center published 3 papers concerning a revision of the taxonomy and nomenclature of the American planorbids.

The Organization provided a short-term consultant to assist Brazil in establishing a Pilot Control Program on Schistosomiasis. The objective of the program is to test control methods in a series of typical endemic foci in order to gather the information and experience that would permit the creation of a gradually expanding program for the control of the disease. The report contains recommendations concerning the program in four areas and regarding techniques, as well as a review of problems that may be encountered in the execution of the plan and suggestions as to how the plan might be assisted by other agencies, international or bilaterals.

B. ENVIRONMENTAL SANITATION

The control of atmospheric pollution became very topical in 1965. The work of sampling stations in several main cities of Latin America to ascertain the magnitude

of that problem in metropolitan and industrial areas is reported elsewhere in this *Report*.

Proof of the interest in atmospheric pollution is the

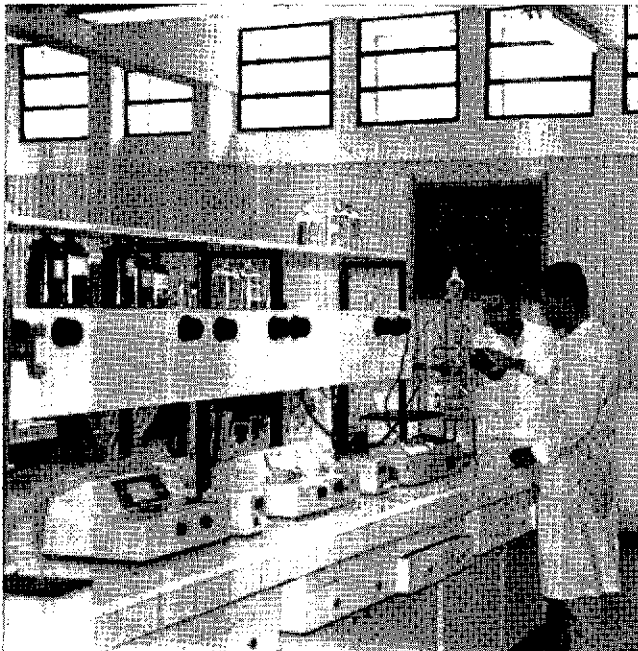
fact that, in Argentina, as one example, the Environmental Engineering Research Center of the School of Sanitary Engineering, of the University of Buenos Aires, installed 7 sampling stations for a study of the situation in that Capital. For some years the Organization has been collaborating with the Intermunicipal Committee on Air and Water Pollution Control (CICPAA), which represents 4 municipalities surrounding the city of São Paulo, Brazil, in an air pollution control program in what is considered to be the largest industrial area in Latin America. CICPAA has 45 minor and 2 major air sampling stations, and in 1965 the stations and the air analysis laboratory attained full operation. The Peruvian Institute of Occupational Health successfully carried out a program to control air pollution caused by fish meal processing plants.

In the field of solid waste collection and disposal, the advisory services provided by the Organization in 1964

led the municipality of San Juan, Argentina, to conclude in 1965 an agreement with the Environmental Engineering Research Center of the School of Sanitary Engineering in Buenos Aires to make a study on waste disposal and on a plant for converting wastes into fertilizer. The municipality of Mendoza had under study a similar agreement for the solution of the problem caused by indiscriminate waste and garbage disposal. By means of a consultant, the Organization provided assistance to the Prefecture of São Paulo, Brazil, as well as to the neighboring municipalities of Santo André, São Bernardo do Campo, São Caetano do Sul, and Maua. These places were visited by the consultant, who made recommendations on improvements in garbage and waste collection and disposal. The Dominican Republic received advisory services in connection with garbage collection and the proliferation of flies and other insects in the Capital. Collaboration with the authorities of Caracas, Venezuela,



Mobile equipment for establishing and servicing air sampling stations in Brazil.



Laboratory services for air and water pollution in Brazil.

in connection with the problem of garbage incineration, was continued.

The Superintendency of Urbanization and Sanitation of the state of Guanabara (SURSAN) requested and obtained assistance from the Organization in the preparation of a mosquito control program in Rio de Janeiro. The program was carried out with the assistance of a short-term consultant; a small amount of equipment was also provided.

A short course on solid waste disposal, given at the School of Public Health of São Paulo, Brazil, was attended by the municipal authorities in charge of this service in the metropolitan area of São Paulo.

WATER SUPPLIES

During the past few years a definite change has taken place in the emphasis of the cooperation furnished to the countries of Latin America by the Organization in the community water supply field. Whereas formerly a major portion of the effort was directed toward assistance in designing specific projects or solving isolated prob-

lems, the emphasis in 1965 was on long-range benefits such as: institution building; improvement in organization and management of agencies, water authorities and water-supply systems; stimulating the use of self-help principles; preoccupation with the economics of the systems, their self-supporting capabilities and the development of projects which are acceptable to the international lending agencies; improving educational facilities and programs; and national and regional planning.

Continuing its constant search to adapt its technical cooperation to the changing needs in the community water supply field in Latin America, the Organization instituted some new approaches which assisted the Member Governments to move their programs toward the goals of the Charter of Punta del Este.

One of these new approaches was to assemble in Zone III a group of advisers assigned to work with the Governments in the Zone, exclusively on water supply matters. The group consisted of consultants in sanitary engineering, water supply administration and financing and in community development. The success of this assignment indicated the advisability of using this approach in other Zones.

The inclusion of an adviser experienced in helping the people of rural areas to develop their potential self-help was another of the new approaches started during the year.

A third successful development was the use of a team of advisers made up of short-term consultants and PASB staff members to study the administrative practices, advise on their improvement and provide some training for the staff of the National Autonomous Water and Sewerage Service of Honduras, the national water authority, and for the staff of Empresa Aguadora of Managua, Nicaragua, a water supply utility. Other countries have requested similar studies and the next one will be carried out in El Salvador.

Assistance was also provided by 19 full-time sanitary engineering advisers assigned to the community water supply program, as follows: Argentina, Barbados, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Jamaica, México, Perú, Trinidad and Tobago, and West Indies. In addition, 3 advisers were assigned to Zone III and 3 were stationed at Headquarters; and 22 sanitary engineers assigned to general environmental health projects dedicated about half of their time to community water supply activities.

Effective use was also made of short-term consultants. Assistance was furnished to 22 countries by means of 73 consultants who provided 91 consultations (Table 19).

TABLE 19. CONSULTATIONS PROVIDED BY
SHORT-TERM CONSULTANTS, 1965

Field or institution	Number of consultations
Water supply.....	42
Water and air pollution.....	5
Housing.....	2
Institute of Occupational Health and Air Pollution Research (Chile).....	7
Institute of Sanitary Engineering (Brazil).....	7
Training: short courses.....	28
Total.....	91

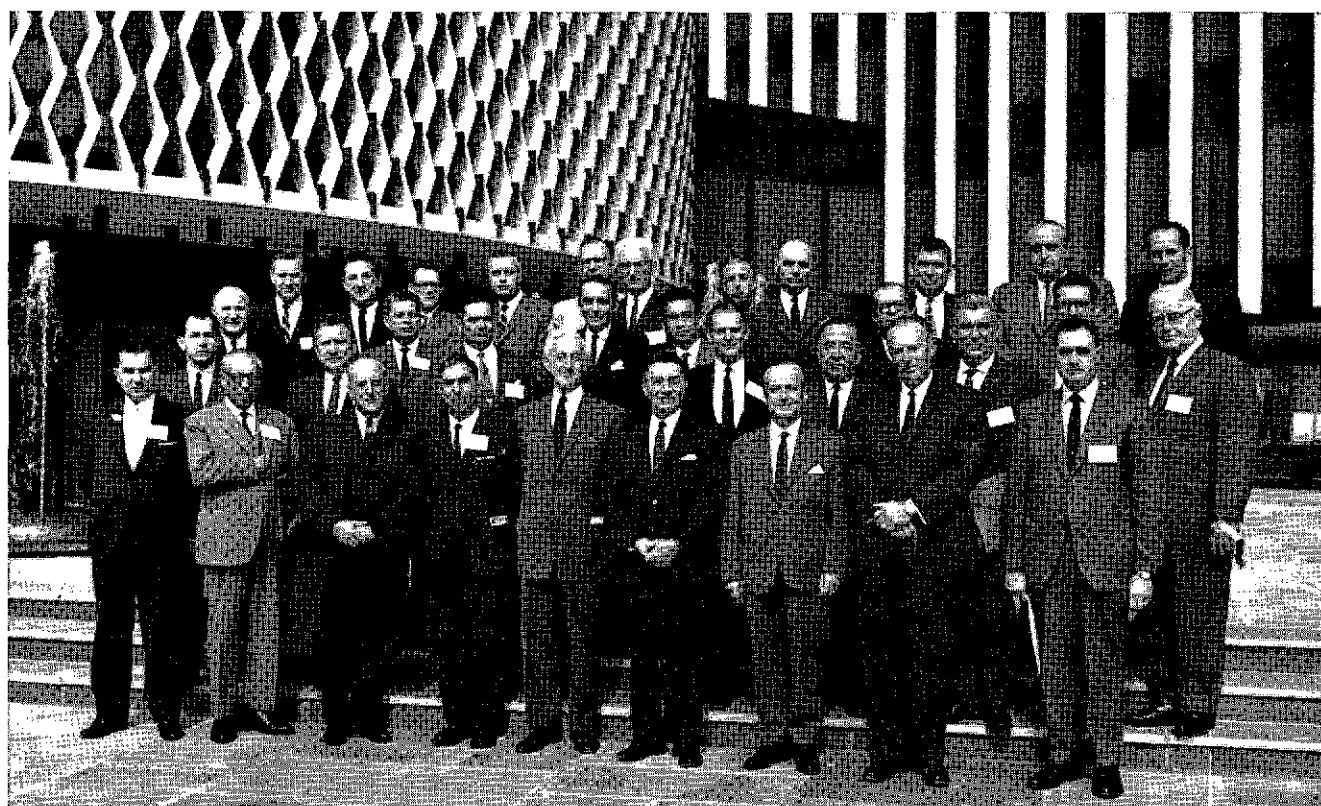
By the end of 1965 a manual was in preparation to assure the most effective use of this important technical assistance resource.

The general types and variety of consultation and technical collaboration provided to the Member Governments by the Organization through its advisers and short-term consultants are shown according to 32 classifications

(Table 20). Each x mark indicates that assistance was provided at least once in the country and specified classification indicated.

Paralleling the advisory services furnished to the countries of Latin America by the Organization for the design and construction of community water supply and sewage disposal systems was the assistance provided by the international lending agencies, particularly the Inter-American Development Bank, as well as the increasing amounts of funds allocated by the countries themselves for this purpose. It is estimated that during the first half of the Alliance for Progress decade more than \$800 million were allocated for the construction of water supply and sewage disposal systems which will benefit nearly 45 million people. In no other part of the developing world have such extensive advances been made in a comparative period of time (Table 21).

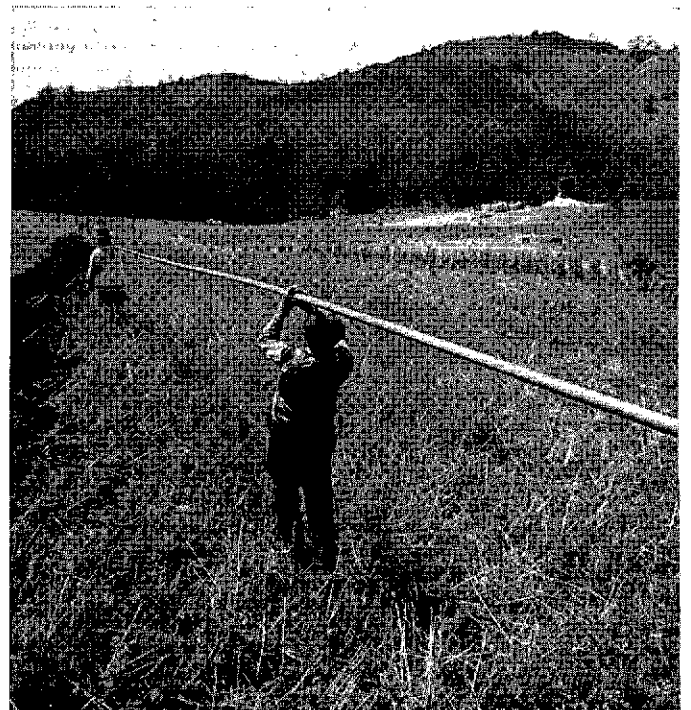
The loans approved or signed during 1965 (Table 22) totaled over \$93 million which is more than twice the amount made available by international lending agencies during any one year with the exception of 1962 (Table 23). It is hoped that this indicates an increase in the rhythm of preparation and presentation of acceptable

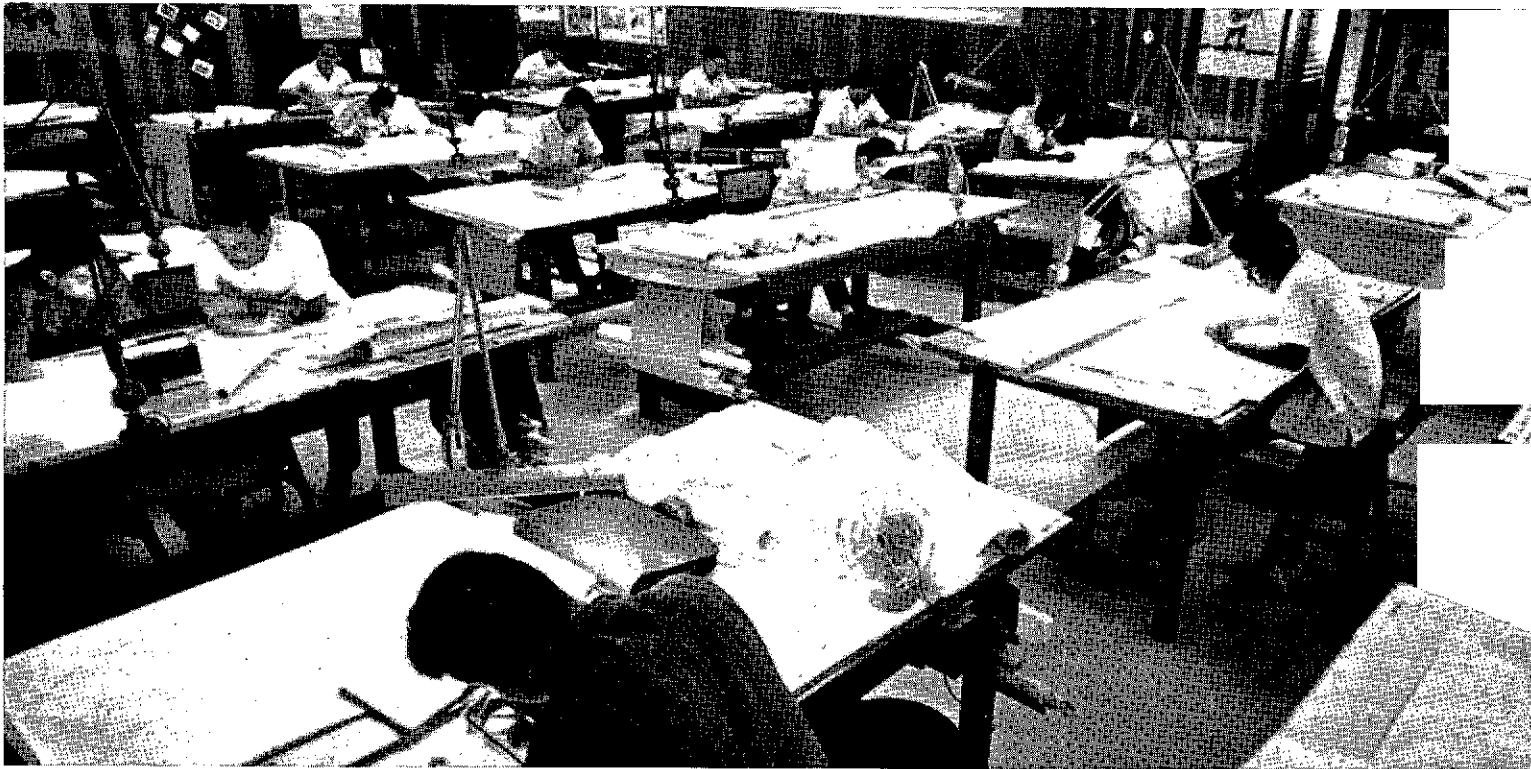


Representatives of 15 Nations attended the Conference on Water Supplies in the Americas, held at Headquarters, in Washington, D. C., from 18 to 20 October.



Previously one of the 100 million persons in the Hemisphere lacking running potable water, a housewife (*left, clockwise*) begins a new life when she opens a water faucet in front of her home, in Vereda Fincón Santo, Cundinamarca, Colombia. To supply water during this decade to of least 70% of the urban population and 50% of the rural—a goal specified in the Charter of Punta del Este—the Bureau cooperates with Governments and national, international, and religious organizations and persons interested in installing or expanding water supply services in many countries of the Americas.





Personnel of IDAAN headquarters, in Panamá City, working on plans for water supply systems for the country. Students of the School of Public Health of the University of Antioquia, in Medellín, Colombia, do house-to-house surveys to determine population needs and to obtain the residents' participation in local projects. Expansion of a water treatment plant at Tres Ríos, Cartago, Costa Rica. Residents of a rural area carrying polyethylene pipe that will bring water to their homes. At Villa Antón, Panamá, a villager tests the pressure of water carried by a pipe he helped to install.



I. PROTECTION OF HEALTH: ENVIRONMENTAL SANITATION

TABLE 20. COLLABORATION PROVIDED BY THE PAN AMERICAN SANITARY BUREAU (STAFF AND SHORT-TERM CONSULTANTS), 1965

Types of services															Total													
	Argentina	Barbados	Bolivia	Brazil	British Guiana	British Honduras	Chile	Colombia	Costa Rica	Dominican Republic	Ecuador	El Salvador	Guatemala	Haiti	Honduras	Jamaica	Mexico	Nicaragua	Panama	Paraguay	Peru	Sri Lanka	Trinidad and Tobago	Uruguay	Venezuela	West Indies		
Training: organization and presentation of short courses.....																												19
Privy programs.....																												18
Organization or improvement of water authorities.....																												15
Studies and surveys.....																												15
Groundwater exploration including well drilling.....																												14
Pollution control, sewage treatment, industrial waste.....																												14
National or regional planning.....																												13
Environmental sanitation (miscellaneous).....																												12
Sanitary engineering programs in universities.....																												10
Design of specific projects.....																												10
Community development, self help.....																												9
Public relations.....																												9
Organizing seminars—symposia.....																												9
Rate structures—establish or improve.....																												8
Organization and management—water supply systems.....																												8
Assisting with UN-TA projects.....																												8
Financing—method or preparation of loan requests.....																												7
Industrial hygiene.....																												7
Water supply systems problems.....																												6
Revolving fund mechanisms.....																												5
Centers or institutes.....																												5
Laboratories: installation and/or operation.....																												5
Garbage disposal and sanitary landfill.....																												5
Developing design standards or criteria.....																												4
Accounting, personnel systems.....																												4
Water supply coordination group participation.....																												3
Water quality control.....																												3
Organization and administration of existing agencies.....																												3
Air pollution control.....																												3
Fluoridation.....																												3
Oxidation ponds—design or use.....																												2
Water resources study.....																												2
Total.....	16	4	5	15	2	11	7	16	10	7	9	13	7	8	14	9	18	10	13	8	15	3	11	5	10	12	258	

— None.
 * Each x mark indicates that assistance was provided at least once in the country and classification indicated.

TABLE 21. FUNDS USED FOR CONSTRUCTION OF WATER SUPPLY AND SEWERAGE SYSTEMS IN LATIN AMERICA
January 1961–December 1965
U.S. Dollars

Country	IADB		IBRD	AID	EXIMBANK	Estimated amount of domestic funds	Estimate of population served
	Water	Sewerage	Water	Water and sewerage ^a	Water and sewerage ^a		
Argentina.....	29,000,000	—	—	—	—	40,500,000	5,400,000
Bolivia.....	2,600,000	—	—	—	—	482,500	210,000
Brazil.....	70,110,000	14,650,000	—	—	—	85,414,000	14,480,000
Chile.....	26,645,000	—	—	2,840,000	187,850	21,104,000	3,030,000
Colombia.....	27,751,397	7,233,000	—	8,400,000	2,275,000	38,298,600	6,820,000
Costa Rica.....	1,400,000	140,000 ^b	—	4,900,000	4,000,000	2,824,000	470,000
Dominican Republic.....	1,150,000	—	—	—	—	1,050,000	260,000
Ecuador.....	5,200,000	3,568,000	—	—	—	2,923,000	780,000
El Salvador.....	7,680,000	1,520,000	—	—	—	4,540,000	1,300,000
Guatemala.....	5,717,804	1,200,000	—	—	—	3,377,200	580,000
Haiti.....	2,360,000	—	—	—	—	350,000	290,000
Honduras.....	2,550,000	—	—	1,050,000	—	650,000	340,000
Jamaica.....	—	—	—	3,700,000	—	1,800,000	130,000
México.....	13,474,000	550,000	—	—	36,000	9,296,000	1,710,000
Nicaragua.....	—	185,000 ^b	3,000,000	—	—	3,050,000	280,000
Panamá.....	2,762,000	—	—	7,300,000	—	5,173,000	450,000
Paraguay.....	265,000	—	—	—	—	—	50,000
Perú.....	12,489,539	1,171,360	—	8,600,000	6,623,505	13,506,000	2,930,000
Trinidad and Tobago.....	—	—	—	—	9,000,000	9,113,000	270,000
Uruguay.....	9,343,000	2,500,000	—	—	1,900,000	21,057,000	1,990,000
Venezuela.....	36,000,000	—	—	—	7,500,000	54,598,000	2,630,000
Total ^c	256,497,740	32,717,360	3,000,000	36,790,000	31,522,355	319,106,300	44,400,000

— None.

^a It has not been possible to separate the amount for water supply projects from that for sewerage projects; however, it is known that sewerage projects are allotted a relatively small amount.

^b Loans solely to finance studies.

^c International loans: \$360,527,455 Government contributions to the same loans, \$319,106,300; projects of the countries financed by themselves or with the aid of grants from international agencies or foundations, estimated at \$150,000,000; approximate total, \$829,633,755.

loan requests which will continue in the future. Such an increase is imperative to reach the rate of \$371 million per year which is estimated as necessary to attain the water supply goals of the Charter of Punta del Este (Fig. 4).

A Conference on Water Supply in the Americas was held in October 1965 for a detailed appraisal of the efforts made to deal with the water supply needs in Latin America. Statistics obtained preparatory to the conference indicated that in terms of numbers of people who are or will be served as a result of projects begun since 1961, the urban water supply program is ahead of schedule in 14 of the 19 countries of Latin America included, whereas in the rural communities only 2 of the countries are ahead of schedule (Fig. 5). The consensus of the conference members was that although it is true that tremendous strides are being made toward reaching the water

supply goals of the Charter, emphasis must be continued on the urban programs, increased very materially on the rural and metropolitan fringe-area programs, and be placed on the needs of the middle-size cities.

Rural Areas

Recognizing the importance of and need for local participation in rural environmental health projects, the Organization added to the Zone III staff an adviser with many years of experience in community development who had also assisted in establishing training programs for promoters of self-help concepts for rural development. This type of assistance with particular reference to the rural community water supply programs was provided in Argentina, where a massive program was launched at

I. PROTECTION OF HEALTH: ENVIRONMENTAL SANITATION

TABLE 22. LOANS APPROVED OR SIGNED DURING 1965 FOR WATER SUPPLY AND SEWERAGE SYSTEMS
U.S. Dollars

Country	Lending agency	Purpose	Loan
Argentina.....	IADB	Rural water supply program.....	5,000,000
Argentina.....	IADB	Water: 5 cities including Buenos Aires.....	18,500,000 ^a
Bolivia.....	IADB	Water-supply system improvement, city of Oruro.....	2,600,000
Brazil.....	IADB	Water: 200 towns and city of Salvador.....	15,000,000 ^a
Chile.....	IADB	Water: 39 cities.....	15,500,000 ^a
Colombia.....	IADB	Water-supply system, Medellín, second stage.....	4,750,000
Colombia.....	EXIMBANK	Water supply, Barranquilla.....	2,275,000
Costa Rica.....	IADB	Rural water-supply program.....	1,300,000
Honduras.....	IADB	Water-supply systems improvements: 6 cities.....	400,000 ^a
México.....	IADB	Water-supply and sewerage systems improvement, Querétaro and Durango.....	4,824,000
Panamá.....	AID	Sewerage project, Colón.....	1,300,000
Perú.....	IADB	Water-supply systems: 100 cities.....	8,100,000 ^a
Uruguay.....	IADB	Water-supply systems: 6 cities.....	3,600,000
Venezuela.....	IADB	Rural water-supply systems: 300 communities.....	10,000,000
Total.....			93,149,000 ^b

^a Approved but not available until contract is signed by agency and Government.

^b The countries contributed \$82.6 million.

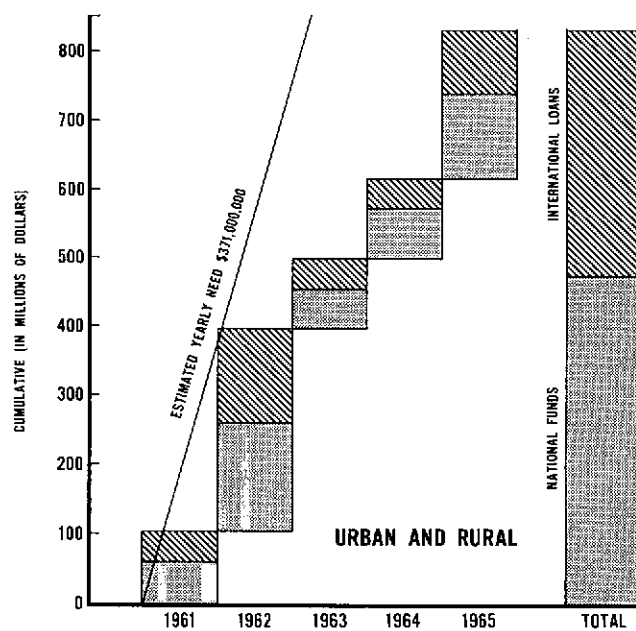
the state level, and in British Honduras, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Panamá, and Perú.

While the situation of water supply for the smaller towns and villages was not as bright as for the urban areas, it was far from bleak. Progress is being made. Rural water supply needs were given increased attention. The majority of the countries have become aware of the need for establishing specific permanent programs for this purpose; national plans were prepared and programs were underway in many countries. Of the 13 loans made or approved by the Inter-American Development Bank during the year, 3 were for rural water supply programs (Table 22).

During the first half of the Alliance for Progress

TABLE 23. WATER SUPPLY AND SEWERAGE SYSTEMS FUNDS LOANED BY INTERNATIONAL LENDING AGENCIES
January 1961-December 1965
U.S. Dollars in millions

Year	Loans for year	Total at end of specified year
1961.....	44.1	44.1
1962.....	137.7	181.8
1963.....	42.5	224.3
1964.....	43.1	267.4
1965.....	93.1	360.5



YEAR	1961	1962	1963	1964	1965	TOTAL
IADB(water and sewerage)	25.7	106.3	28.5	39.3	89.4	289.2
AID	3.5	17.4	11.0	3.6	1.3	36.8
IBRD			3.0			3.0
EXIMBANK	15.0	14.0		0.3	2.3	31.5
NATIONAL FUNDS	59.7	155.6	59.1	74.0	119.8	469.1
TOTAL	103.9	294.3	101.6	117.2	212.8	629.8

AMOUNTS IN MILLIONS OF U.S. DOLLARS

FIG. 4. INTERNATIONAL LOANS AND NATIONAL FUNDS AVAILABLE FOR THE CONSTRUCTION OF WATER SUPPLY AND SEWERAGE SYSTEMS. JANUARY 1961 TO DECEMBER 1965.

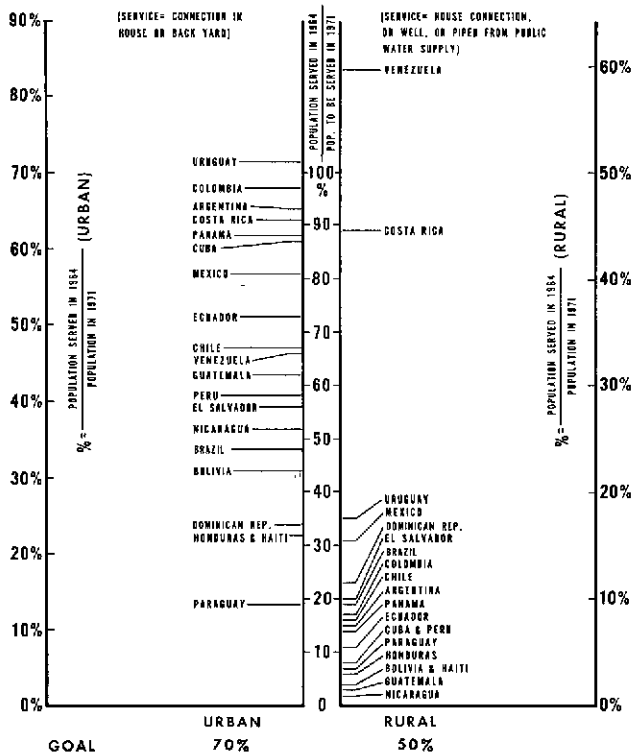
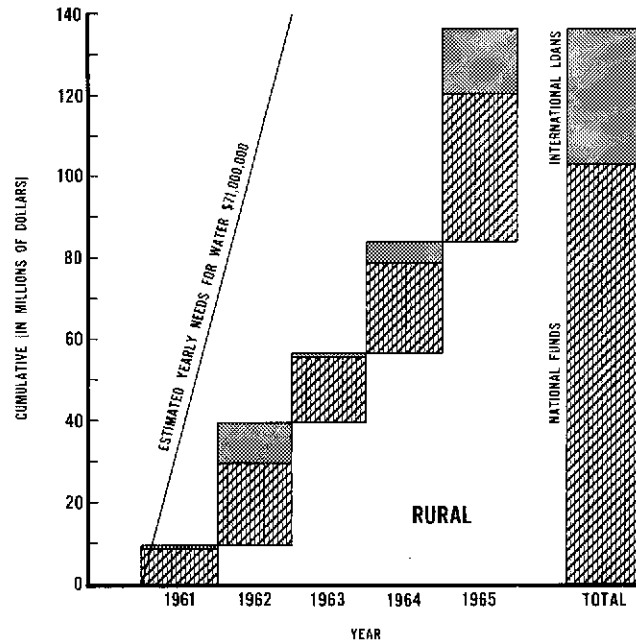


FIG. 5. STATUS OF WATER SUPPLY PROGRAM IN MIDDLE AND SOUTH AMERICA IN 1965.

Decade it is estimated that at least \$136 millions were made available for the construction of rural community water supply projects with \$34 millions of this total being provided by international lending agencies (Fig. 6). It is encouraging that nearly half of the latter amount was made available during 1965 (Table 24) and that the Inter-American Development Bank has indicated a willingness to consider requests for additional loans for sound proposals based on carefully studied groups of projects.

The Organization provided technical collaboration in the preparation of national or regional rural water supply plans mainly in Argentina, Colombia, El Salvador, Jamaica, México, Nicaragua, and Perú, and in other countries assisted water authorities or other responsible agencies to develop rural water supply programs which included the preparation of loan requests for such programs.

Advice was given to several countries on the advantages and use of revolving fund mechanisms to provide a sound basis for future expansion of water supply programs. An executive decree was signed in Argentina providing for setting up a special account and the deposit of funds to start a revolving fund. A National Fund for Sanitation



YEAR	1961	1962	1963	1964	1965	TOTAL
IADB (water and sewerage)	1.0	10.0		5.2	16.3	32.5
AID			1.1			1.1
NATIONAL FUNDS	8.5	20.0	16.0	22.0	36.2	102.7
TOTAL	9.5	30.0	17.1	27.2	52.5	136.3

AMOUNTS IN MILLIONS OF U.S. DOLLARS

FIG. 6. INTERNATIONAL LOANS PLUS NATIONAL FUNDS AVAILABLE FOR THE CONSTRUCTION OF RURAL WATER SUPPLIES, JANUARY 1961 TO DECEMBER 1965.

was set up in Brazil through which loans for water supply projects will be made to the States. The National Fund was established with national and international loan funds. Loans from the Fund must be matched on a percentage basis by funds from the municipalities obtaining loans. A National Revolving Fund for Basic Sanitation and Rural Well-Being was created by Executive decree in Colombia within the Special Health Programs of the Ministry of Public Health. Funds will be provided from the national budget and from other sources as well.

TABLE 24. LOANS SIGNED DURING 1965 FOR RURAL WATER SUPPLY PROGRAMS
U.S. Dollars

Country	Lending agency	Loan
Argentina	IADB	5,000,000
Costa Rica	IADB	1,300,000
Venezuela	IADB	10,000,000
Total		16,300,000

I. PROTECTION OF HEALTH: ENVIRONMENTAL SANITATION

Costa Rica was already using a revolving fund mechanism.

At the Conference on Water Supply for the Americas it was established that about 13 million persons in rural areas were being served from house connections, public hydrants, and protected wells. If the goal of the Charter of Punta del Este is to be met, improved services must be provided for an additional 8 million persons each year during the remainder of the decade. Because of the magnitude of the problem and the limited economic capacity of many of the people in the rural areas to pay for standard water service, it is evident that special solutions must be developed reducing the per capita cost to a minimum. The Organization is assisting in the search for these solutions as well as the other aspects of the rural community water supply programs through its staff members, short-term consultants, training programs, and research projects.

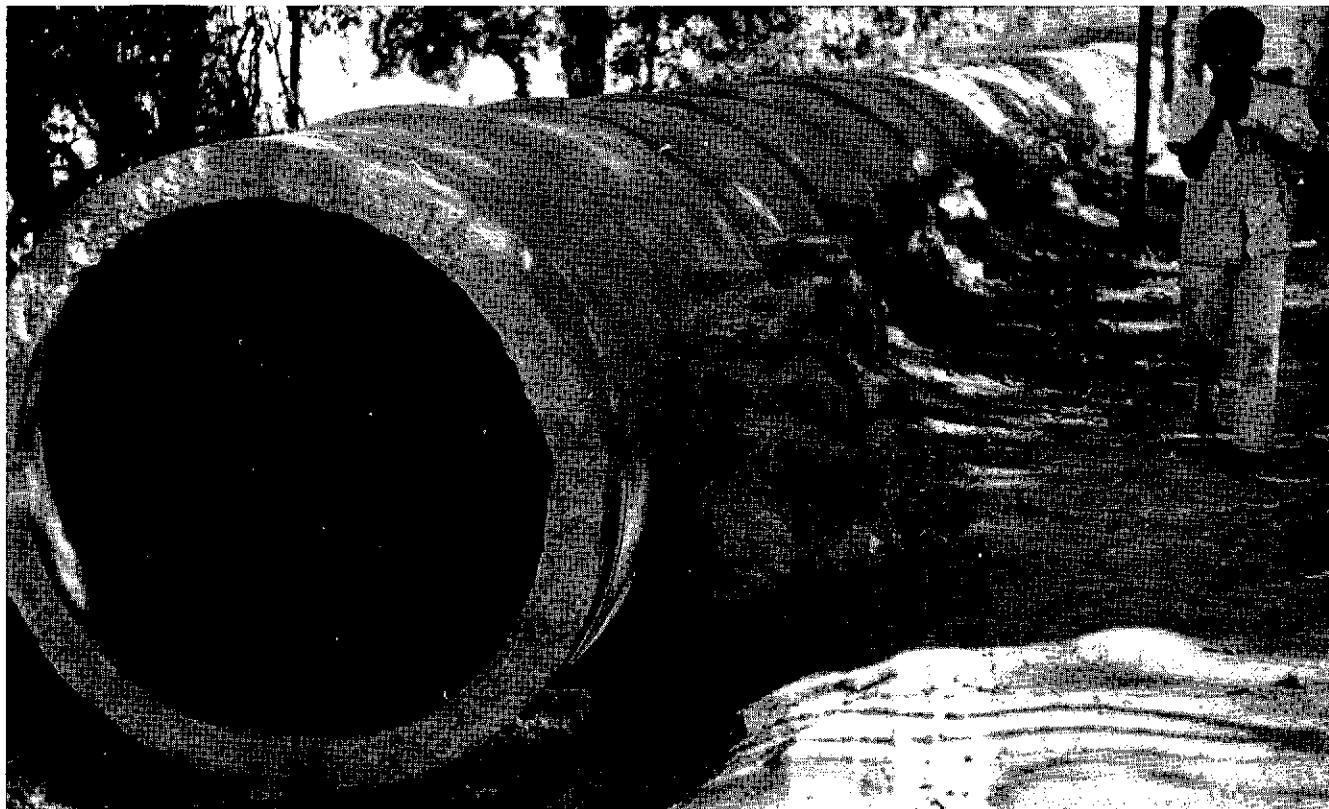
SEWERAGE AND WATER POLLUTION

The programs for expanding or building urban sewerage and rural waste disposal systems did not keep pace

with the water supply programs referred to earlier and were behind schedule as far as the goals established in the Charter of Punta del Este are concerned. Because public water supplies received greater priority, it was not possible to allocate larger sums of funds, either national or foreign, to sewerage services, despite the fact that the problems caused by defective removal and disposal of sewage and stream pollution are becoming daily more important to the health and economy of the Latin American countries.

Up to the end of 1965, approximately \$70 million had been allocated in the form of foreign loans, and the local contributions possibly matched that figure. Almost all these funds were allotted to the expansion of existing sewerage services or the construction of new ones.

The Organization provided advisory services and collaboration as follows: in Brazil, on the design of a sewerage system for Pôrto Alegre; in Perú, on industrial wastes in the Lima sewerage system; in Venezuela, on the sewerage system and sewage treatment in Caracas; and in the West Indies, on sewage disposal and beach pollution in Curaçao and on sewerage systems and beach pollution in Grenada. Steps were taken to assign a con-



Interceptor sewer to expand the sewerage system in San Salvador, El Salvador.

sultant to the Government of Jamaica early in 1966 to give consultant services on beach pollution by sewage; and a close interest was also taken in the pressing problems, of similar origin, affecting the metropolitan areas of São Paulo, Brazil, and Montevideo, Uruguay.

A consultant presented a paper on water pollution problems at the V Seminar on Sanitary Engineering for Central America and Panamá.

Oxidation or stabilization pools to treat sewage were being used successfully in Brazil, Colombia, Costa Rica, and México. Engineers of the Organization visited successful installations of this kind in the United States of America and other parts of the world, for the purpose of subsequently stimulating other Governments, institutions, and municipalities in Latin America to experiment with this method in order to determine the best designs for local conditions, since the method seems to be particularly applicable because of its simplicity and economical upkeep.

Air and water pollution in Latin America was dealt with at the XVI Meeting of the Directing Council of the Pan American Health Organization which, in Resolution XXXV, recommended to the Governments that, through their Ministries of Health, they give proper attention to the problems of air and water pollution and, where appropriate, expand their technical staff and related facilities to provide for practical and effective regulatory controls. The Resolution also requested the Director of the Pan American Sanitary Bureau to give appropriate attention to the expanding problems in this regard.

HOUSING

The Organization gave advisory services to the Governments on the health aspects of housing and urbanization through a specialized consultant stationed in Santiago, Chile. The consultant is a member of the technical missions that the Economic Commission for Latin America sends to the countries for that purpose.

A reconnaissance visit was made to Argentina for the purpose of planning future programs. In Brazil a preliminary report on urban housing in São Paulo was prepared. In Chile preparations for a course to be given in Santiago in 1966 on the planning of housing were completed. A short-term consultant with experience in the national planning of sanitary works will also collaborate in the teaching of the course. Uruguay was provided with advisory services in the preparation of the housing

and sanitary-works programs that are part of the national development plan.

Steps were also taken to begin a study of an experimental neighborhood unit in Perú. The purpose of the study is to obtain information on low-cost designs, cost of labor and materials, standards, selection of building sites, etc., as well as to devise a procedure for obtaining a suitable design for a city suburb adapted to the situation in Latin America, whose housing and urbanization problems differ from those in the more technologically developed countries. In the course of the preparation and construction of this project the Organization will be in a position to suggest the most advisable arrangements, procedures, and materials for ensuring that the houses and other buildings provide the best conditions for promoting the health, safety, and well-being of their future occupants.

The Organization also collaborated with the ECLA office in México in a study on housing and urbanization in Central America. For this purpose an architect, contracted as a short-term consultant, visited the countries of Central America to collect the pertinent information and documentation. The scope and objectives of the study were explained at the III Meeting of the Subcommittee on Housing, Building, and Planning of the Central American Isthmus, which took place in Guatemala in December. To facilitate the study, it was recommended that a working party and a correspondent be appointed in each country.

A seminar on environmental sanitation in shanty towns was held in Maracaibo, Venezuela, from 22 to 26 November. It was organized by the Ministry of Public Health, the Central University of Venezuela, and the Pan American Sanitary Bureau; senior officials of the national agencies interested in attaining immediate and practical results in this activity took part in the deliberations.

Towards the end of the year an architect specialized in rural planning was assigned to Venezuela as a consultant to cooperate in the rural housing and agrarian planning programs which the Government of that country is conducting. The request for this consultant was the result of the reports prepared by 3 consultants that the Organization had sent to Venezuela in previous years.

OTHER ACTIVITIES

The Organization collaborated with the Second National Congress on Sanitary Engineering, held in Curi-

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tiba, Brazil, in September, which was attended by more than 600 engineers. The V Seminar on Sanitary Engineering in Central America and Panamá was held in Guatemala City in December. The deliberations of the delegations from the countries of Central America and Panamá centered on the status of water supply programs

and stream pollution in the participating countries. During the year, the Organization also assisted in the preliminary arrangements having to do with the organization of the X Congress of the Inter-American Association of Sanitary Engineering, to be held in San Salvador, El Salvador, in December 1966.

II. PROMOTION OF HEALTH

A. GENERAL SERVICES

GENERAL HEALTH SERVICES

This report on the general health services projects undertaken by the countries in cooperation with the Organization will deal only with certain aspects of health administration, since activities on specific fields are reported either in the previous chapter or in other parts of this same chapter.

Since 1950, when the Organization collaborated in the first general health services project in the Demonstration area of Quezaltepeque, El Salvador, the Governments have shown increasing interest in improving the organization of such services. By 1961 the Organization was rendering advisory services to 16 such programs.

In 1965 there were 31 integrated public health programs underway in 27 countries or territories. As their number increased, the objectives of the projects were enlarged; and the initial demonstration areas developed into more complex programs covering part or all of the territory of a given country. In 1965 plans for developing general health services in 20 countries or territories had nationwide objectives, with activities at the central, regional, and local levels, and in the other 7 countries or territories the projects were regional in scope, aimed chiefly at rural areas in some and covering an entire state or province in others.

This nationwide approach was in keeping with the objectives of item "e" of Resolution A.2 of the Charter of Punta del Este (Uruguay; 1961), which recommended to the Governments: "To improve the organization and administration of national and local health services by combining the functions of prevention and cure; to obtain a better return from medical care services; to create the necessary services gradually; and to ensure financial accessibility to therapeutic agents and means for the prevention of disease."

The planning preparatory to the harmonious execu-

tion of activities to attain the indicated objectives is being carried out by most countries as a part of national economic and social development planning. At mid-1965 the status was as follows: 16 countries had a health planning unit in operation; 11 had completed the diagnosis of their health situation; 11 had formulated plans; and 8 had initiated activities in accordance with approved plans. In 12 countries health program-budget drafts had been prepared, and 7 countries had embarked on studies to ascertain the scope and characteristics of their specific health problems or to determine the efficiency of the administration of the programs underway.

Argentina published part of the data of the national survey of health services and resources that was completed in 1964. Both Argentina and El Salvador made an evaluation of the results obtained in certain projects, for developing general health services, that had been in operation for several years.

Five countries introduced important changes into their central health structures by reorganizing or increasing the number of their techno-administrative units. Honduras established a Subdirectorate of General Services. México reorganized its Ministry of Health and Welfare and established a General Directorate of Coordinated Public Health Services for States and Territories. Nicaragua established a Department of Veterinary Public Health and a Division of Education and Training. The Dominican Republic, and Trinidad and Tobago, strengthened their Administrative Departments.

In the matter of the integration of preventive and curative services, efforts were also made to coordinate the medical care programs of Ministries of Public Health and those of the autonomous health agencies, thereby ensuring that they complement each other and have the same objectives. In Costa Rica an agreement to that effect was signed by the Ministry of Public Health and the Social Security Agency, and a similar agreement was

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concluded in Panamá for certain areas of the country. In Colombia, an Executive Decree ordered the integration of the previously separate curative and preventive services, and in Paraguay the integration of those services continued to make progress throughout the country.

The regionalization of health services and the establishment of new services to cover new areas were again given preferential attention by the health authorities. During the year, 9 agreements were signed with the Organization for the expansion or initiation of projects aimed at developing general health services; among the objectives of such projects were the administrative decentralization of the services and their extension to rural areas. Four projects reported the establishment and organization of health areas or districts. Thirty-one new health centers began to operate in 7 countries. Chile, Costa Rica, Cuba, and Haiti extended their minimum services by establishing peripheral health posts or by giving them the necessary personnel to achieve greater coverage. Colombia and Haiti expanded their nutrition rehabilitation activities by creating services for that purpose, while Paraguay extended its applied nutrition program to 60 new localities.

As a result of the integrating of preventive and curative services there was an increase in the medical care activities undertaken in general health services projects. The Organization has collaborated with the pertinent authorities in studies on the coordination of existing and future services; the preparation of draft architectural plans for the building, expansion, or remodeling of general, specialized, or teaching hospitals; studies on hospital functioning and the establishment of better technical and administrative organization; and the improvement or establishment of such specific services as maternity, pediatrics, nursing, nutrition, rehabilitation, statistical or clinical history units, and other services in hospitals or other health institutions. Special attention was paid to the improvement of outpatient facilities or programs in order to give them greater responsibility in preventive and community activities.

Significant progress in some of the fields of endeavor mentioned above was reported by 10 countries and 3 territories, and 2 other countries reorganized some of their more important teaching hospitals.

In accordance with recommendations from its Directing Bodies and orientation provided by advisory groups, the Bureau encouraged activities aimed at gradually making the general health services responsible for the consolidation phase of intensive campaigns and for taking over the task traditionally entrusted to the vertical services throughout the country. In the matter of

reporting and control of communicable diseases many of the general health services have organized and improved their statistical systems so as to include, not only case notification, but also vital and health data, clinical records, and hospital statistics. The general health services, meanwhile, have raised the level of immunity of the population through the routine activities of outpatient departments or through mass campaigns. An analysis of the general health services projects shows that 14 undertook in 1965 mass immunization campaigns against smallpox, 7 against poliomyelitis, and 10 made regular provision for BCG or DPT immunizations.

The preventive and curative care of mothers and children has been accorded special attention because it is one of the basic aims of the extension of the general health services. The integration of the nutrition aspects into the general services resulted in 1965 in an increase in nutrition services and in the activities aimed at coordinating the efforts of the various agencies that have executive responsibility for improving nutritional status; promoting community organization; establishing the nature of nutrition problems and the extent of resources available; as well as for training the necessary personnel. To bring all this about, national nutrition councils and executive committees were appointed in 4 countries or territories; 3 of these already formulated national programs and established full-time posts for specialized, professional, and technical personnel. Ecuador, Panamá, and Paraguay began or expanded their applied nutrition programs, and other countries added new schools to theirs. Supplementary feeding programs for vulnerable groups became a routine practice. In the matter of research, several countries undertook anthropometrical, dietary, nutritional, or clinical surveys to obtain a better knowledge of the nature of the local problem. The teaching of nutrition at training centers and at schools of nursing was improved or included in many of the training courses for technical, auxiliary, and voluntary personnel.

NURSING

With the emphasis being placed on planning and with the awareness of the chasm that exists between the health needs of the people and the existing resources, nursing in the Latin American and Caribbean areas is focussing more attention on improvement of the administrative and organizational aspects of services, so that,

through better utilization of nursing resources, improved care may be given to the individual, the family, and the community. This trend is obvious in the areas in which consultant services were provided by nursing advisers.

During 1965 the Organization had 18 nursing advisers assigned to projects within countries, 6 in the Zone Offices covered several countries, and 1 nurse-midwife gave service on an intercountry basis. In addition, 9 nursing consultants were recruited to provide advice on a short-term basis.

In Colombia the Organization collaborated by providing short-term advisory services to assist in the nursing aspects of the study of health manpower and medical education, involving availability, utilization, and needs. Studies of nursing activities were carried out in some of the health services in the Dominican Republic, Guatemala and Paraguay, to obtain factual information on the use of current nursing resources. In Trinidad and Tobago a study of available nursing resources was initiated with a view to plan for future nursing needs of the health programs.

Nursing units at the provincial level were being developed in Tucumán, Mendoza, and San Juan, in Argentina. For the improvement of services at the local level, various aspects of administration were developed in those provinces, as well as in Cuba, El Salvador, the Manabí area of Ecuador, the Mato Grosso region of Brazil, and in Dominica and Montserrat in the West Indies. Because the provision of good and efficient nurs-

ing care is contingent on good administration and organization, assistance was provided to strengthen nursing administration at the national level in Cuba, the Dominican Republic, El Salvador, Haiti, and Paraguay. Uruguay developed plans for the creation of a nursing department.

In the countries mentioned above, one or several of the following were realized: determination of criteria for staffing, preparation of procedure manuals, delineation of functions, and record and referral systems. Dominica and Montserrat, in addition, initiated programs for the followup of patients who have been hospitalized for gastroenteric disease or malnutrition, after they are discharged.

In El Salvador and Paraguay goals based on the objectives of the corresponding National Health Plan were established for nursing activities. Also in Paraguay, in accordance with the communicable disease program within the Plan, norms were defined and implemented for the nursing aspects.

The assistance provided to nursing services in hospitals was increased. The Mendoza, San Juan, and Tucumán provinces of Argentina established, in 5 hospitals, nursing departments to assume the responsibility for improving the area services. In Colombia, through short-term advisory services, norms for nursing in hospitals were established. The Organization provided technical advice on hospital nursing services in Cuba, El Salvador, the Manabí area of Ecuador, the Junín area of Perú, and St. Thomas Hospital in Panamá.

Inservice training programs in administration benefited 86 nurses in Argentina and 25 in Ecuador.

In maternal and child care services the nursing needs were determined for improvement of the care units for prematures in 2 hospitals in Córdoba, Argentina. In Medellín, Colombia, the reorganization of nursing services in the pediatric unit received special assistance, and in the University Hospital in Caracas, Venezuela, the operating rooms were organized and nursing personnel were trained to assume their functions.

VETERINARY PUBLIC HEALTH

In view of the contribution of veterinary medicine and the impact of control programs on the economy and health, the Organization continued to increase the consultant and advisory services it offers the countries for the improvement and operation of programs of veteri-



A nurse gives instruction to a group of expectant mothers on health problems.

II. PROMOTION OF HEALTH: GENERAL SERVICES

nary education, zoonoses control, and food and drug control.

Chile, México, Nicaragua, Panamá, Perú, and Venezuela expanded their veterinary public health services. The Division of Veterinary Public Health of Venezuela increased its staff by over 30 veterinarians, and Nicaragua established a Department of Veterinary Public Health.

However, despite the fact that a larger number of veterinarians have entered the public health services of the countries, there are still too few to meet the needs of present programs; for that reason, in 1965 the countries emphasized the Organization's program of assistance to veterinary education and the public health training of veterinarians.

During the year, the Organization provided a consultant to assist the School of Public Health in Medellín, Colombia, in preparing study programs for veterinarians. Five consultants visited 18 schools of veterinary medicine at universities in Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, México, Perú, Uruguay, and Venezuela, to improve the teaching of public health veterinary medicine. Six veterinarians from as many countries were awarded fellowships to study public health abroad and/or at the Pan American Zoonoses Center.

The main efforts of the veterinary public health services of the countries were devoted to the control of zoonoses, particularly rabies, the spread of which is a cause of great concern to a large part of the Hemisphere. To assist the Governments in their rabies campaigns, the Organization sent consultants to Argentina, Brazil, Grenada, México, Perú, Uruguay, and Venezuela. The Zone III Office continued to assist the regional rabies control programs of Central America and Panamá.

The activities of the Pan American Zoonoses Center were increased during the year. The Center provided advisory services and supplied antigens and other diagnostic reagents for brucellosis and bovine tuberculosis control programs in various countries. The studies on leptospirosis, Q fever, salmonellosis, hydatidosis, cysticercosis and other zoonoses were continued in various countries, stimulated and advised by the veterinary public health services and in cooperation with the research and training centers of veterinary medicine.

In cooperation with the veterinary public health services in the countries, the Pan American Zoonoses Center initiated the periodical reporting of cases of zoonoses. The information thus collected and assessed at the Center is making it possible to establish the true

incidence and prevalence of these diseases, as well as their influence on the economic development of the countries.

The growing interest of veterinarians in food and drug control programs is becoming evident, for example, in the programs underway in the countries of Central America and Panamá under Organization auspices. Argentina and Brazil incorporated physicians and veterinarians into the inspection and research services of national and state food and drug control programs, and in Chile the food hygiene services of the National Public Health Service are supervised by members of those professions. In Venezuela the Division of Veterinary Public Health expanded its food control and inspection activities at both the local and federal levels.

The Pan American Zoonoses Center and the Pan American Foot-and-Mouth Disease Center gave assistance to veterinary public health and agricultural services and to universities and research centers in all the countries. Biological products for diagnosis and vaccine production, teaching materials, and technical publications were also provided.

PUBLIC HEALTH LABORATORIES

The basic role played by the laboratory in the matter of the diagnosis, control, and prevention of diseases, both in the individual and in the community, has given rise to the policy followed by the Organization in developing, promoting, and stimulating national public health laboratories.

In 1965 a consultant was assigned to the Microbiology Institute of the University of Brazil, in Rio de Janeiro, for the purpose of advising on fluorescent antibody techniques.

In cooperation with the Communicable Disease Center of the U.S. Public Health Service, 3 short courses on laboratory methods for the diagnosis of venereal diseases were conducted in Chile for staff of the Bacteriological Institute and of the peripheral laboratories in the country, and for officials from Argentina, Ecuador, and Paraguay. The topics dealt with included theory and practice of the classic serological tests for the diagnosis of syphilis (qualitative and quantitative VDRL tests), immunofluorescent methods applied to the diagnosis of syphilis (FTA-ABS) and of gonorrhea, and procedures for the typing and isolation of *Neisseria gonorrhoeae*.

In El Salvador, the consultant who in 1964 had drawn up a program for the expansion of laboratory services at all levels, visited the country to see what progress had been made and to implement recommendations resulting from the evaluation.

With the cooperation of an adviser permanently assigned by the Organization to the Central Health-Laboratories Department and the Biological Institute of Guatemala, the Government instituted measures to increase and diversify the production of biological products, expand the laboratory services at the regional and local levels, and establish new units and train the necessary personnel.

The Organization again gave assistance to the Government of Haiti in the expansion of laboratory services and the objectives set forth in the bilateral agreement with regard to the establishment of diagnostic sections, conduct of epidemiological surveys, and training of personnel in charge of those activities were reached. In keeping with the national system thus organized, the National Laboratory of Public Hygiene acts as reference center for the peripheral laboratories and is capable of meeting the demands of the public health services. During the last 5 years, laboratory personnel have been trained in cooperation with the Technical School and auxiliary personnel were trained for malaria eradication, yaws eradication, and nutrition services; epidemiological surveys were also carried out to determine the prevalence of treponematoses, leptospirosis, brucellosis, and tuberculosis, in cooperation with the Department of Infectious Diseases and Tropical Medicine of the School of Medicine, the Yaws Eradication Service, and the Division of Public Hygiene.

Following a Resolution of the IX Meeting of Ministers of Public Health of Central America and Panamá (Managua, Nicaragua; 1964) the Ministry of Public Health of Nicaragua organized, in cooperation with the Organization, a seminar on laboratory services of the Central American Isthmus. The seminar was held in Managua from 22 to 26 June. The representatives of the countries of the Isthmus made a detailed analysis of laboratory organization, administration, personnel training, and relationships between laboratories and the other health services. The recommendations of the seminar were studied at the X Meeting of Ministers of Public Health of Central America and Panamá, held in August in Panamá City. The X Meeting adopted resolutions dealing with the organization of a laboratory network, the establishment of reference centers, the standardization of methods and techniques and the training and utilization of all levels of laboratory

personnel, and recommended the establishment of a permanent committee, composed of the directors of laboratory services and coordinated by the director of the Department of Laboratories of Nicaragua, to study and implement the decisions taken.

At the request of the health authorities of Panamá, a consultant visited laboratories under the jurisdiction of the National Laboratory Service, including the National Laboratory of Public Health, the laboratories of Penonomé, Antón, Chame, La Chorrera, Río Abajo, and Pueblo Nuevo, as well as the laboratories of the Social Security Fund and of the Children's and Santo Tomás hospitals. His recommendations covered coordination with other health services, physical installations, teaching programs, budgets, and standardization.

In the United States the Organization provided consultants who discussed with the pertinent authorities at the Communicable Disease Center and National Institutes of Health, as well as in various State and university laboratories, activities relating to intrahospital infections; importance of *Listeria monocytogenes* infections in man and animals; and virological surveillance services.

The Government of Venezuela requested advisory services for a detailed study of the country's laboratory resources and facilities. The report prepared as a result of the study will serve as the basis for an Agreement, between the Government and Organization, for expanding the coverage of the national laboratory network.

The Organization invited the countries of the Hemisphere to participate in a program of syphilis serology evaluation which the Communicable Disease Center of the U.S. Public Health Service is carrying out. To date, Argentina, British Guiana, Curaçao, El Salvador, Jamaica, México, Nicaragua, Trinidad and Tobago, and Uruguay have joined the program.

Although many of the laboratories in the countries of the Hemisphere are capable of meeting their own needs in part or in whole, some are unable to perform certain laboratory and epidemiological studies because they lack good-quality reagents. The Organization took steps to overcome this obstacle and reached an agreement with several institutions in the United States of America to supply suitable amounts of reference reagents to the countries which need them. It is hoped that this arrangement will put all health institutions in a position to control the products they manufacture or acquire from commercial sources, and that it will ensure that the results obtained by peripheral laboratories will be comparable with those obtained by the central laboratories.

The Organization furnished information, equipment, and advisory services for the planning of new laboratory units and the improvement of existing ones to the following countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, México, Panamá, Perú, Trinidad and Tobago, and Venezuela.

Virology Laboratories

The simplification of tissue culture methods, the use of unweaned animals of species not previously used in laboratories, and the introduction of new immunological methods have played a decisive role in the discovery and classification of viral agents. The application of such procedures made it possible to isolate and type known viruses (poliomyelitis, myxovirus, and arbovirus), and new agents (adenovirus, echovirus, rubeola, etc.). The development of effective vaccines from attenuated strains (poliomyelitis, measles) and their administration to large masses of population have increased the interest of the health authorities in establishing virological diagnosis units in both central and peripheral laboratories.

In 1965 the Oswaldo Cruz Institute in Brazil, with the assistance of a permanent adviser assigned to it by the Organization, put into practice techniques for the isolation and typing of enteroviruses. In cooperation with hospitals in Rio de Janeiro, a start was made on the etiological diagnosis of respiratory diseases caused by other than influenza viruses. The adviser assisted in 2 courses conducted for Institute personnel.

The Middle America Research Unit of the National Institutes of Health of the U.S. Public Health Service continued its research in Bolivia aimed at establishing the characteristics of the nosological entity known as Bolivian hemorrhagic fever. Laboratory studies made by the team led to the isolation of the causal agent, the determination of its physical properties (ribonucleic acid content, sensitivity to ether, and relative fragility to external factors), and its antigenic structure, which according to the complement fixation test places it with the Machupo, Junín, and Tacaribe viruses although according to the neutralization test they represent individual types. A plate neutralization test which will make it possible to conduct large-scale epidemiological studies was developed, and one primate was found to have great susceptibility to inoculation by the peripheral route—the *titi* of Panamá, in which inoculation with any of the 4 types is lethal. Of considerable value from

the public health viewpoint is the possibility of developing a vaccine by using the *titi* for experimental purposes. It has apparently been conclusively proved that the disease is transmitted through the peridomestic rodent *Callomys callosus*.

Research in México on the ecology of arboviruses was continued in cooperation with Cornell University, New York, United States. The extensive work done since Venezuelan encephalitis virus was first isolated in México in 1963 from mosquitoes and sentinel animals has shown that the virus is present in mosquitoes and in domestic and wild animals, and serological studies have produced evidence of some human cases on the East coast of México. In 1965 the program centered on the ecology of the Venezuelan encephalitis virus with a view to determining the vector mosquitoes, intermediate hosts, and potential dissemination of the virus through migratory birds. Other agents were isolated from mosquitoes and animals, and include one arbovirus of the C group, another of the Bunyanwera group, and still others that were pending identification.

Preparation and Control of Biological Products

The Organization continued to award annual grants to the Oswaldo Cruz Institute of Brazil and to the National Institute of Health of Colombia for the production of yellow fever vaccine, as well as for the provision of diagnostic services.

During 1965 the Oswaldo Cruz Institute sent 906,000 doses of vaccine to the following countries: Argentina, Bolivia, Panamá, Paraguay, Perú, Portuguese Guinea, Senegal, Uruguay, and Venezuela. The National Institute of Health, of Colombia, sent 358,050 doses of vaccine to the following countries and territories: Aruba, British Guiana, Cuba, Curaçao, Ecuador, El Salvador, Guatemala, Jamaica, Liberia, México, Panamá, Perú, and Venezuela.

A consultant was assigned to the National Institute of Health of Colombia to advise the authorities on the production and control of biological products, particularly the components of DPT vaccine.

The Organization continued to make available to official laboratories engaged in the production of biologicals the services of reference laboratories for the control of such products. Because of the importance of suitable control in achieving the high uniform quality of such products, it was the subject of a special recommendation by the Study Group charged with making

a study of the possible establishment of a Latin American Common Market for Biological Products (Washington, D.C., U.S.A.; 1964). During 1965 only 16 biological products were sent to reference centers for control tests.

Biological Reagents

To collaborate in the standardization of biological products the Organization provided the Member Countries with biological reagents (reference antigens and antisera), reference microbial strains, and other standard preparations. Thanks to the agreement established with the Communicable Disease Center of the United States Public Health Service, the number of products distributed to the countries increased from 509 in 1964 to 1,454 in 1965. Biological reagents provided by the Center and other institutions of the Americas were sent to Argentina, Bolivia, Brazil, British Guiana, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Jamaica, México, Nicaragua, Panamá, Paraguay, Perú, Trinidad, United States of America, Uruguay, and Venezuela.

Food and Drug Control

Several Governments indicated interest in reorganizing their food and drug control services in view of the increasing development of the pharmaceutical and food processing industries in the Hemisphere as well as the establishment of common markets, which make it necessary for the countries to have minimum standards for the production and control of both food and drugs.

In view of Resolution WHA18.36 (Eighteenth World Health Assembly) on the importance of quality control of pharmaceutical preparations, the Organization studied the possibility of establishing an international laboratory for that purpose. A report on this matter was submitted to the XVI Meeting of the Directing Council of PAHO and, after discussing it, the countries expressed their willingness to carry out the project. Accordingly, the Organization began a study of the financing and location of a laboratory of this kind.

During the year, advisory services were given to Argentina in reorganizing its drug and pharmaceutical products control services, to which the Government had made a large financial contribution and for which in-

stallation of new laboratories was begun at its National Institutes of Health.

At the request of the Government of Chile a consultant examined the possibility of establishing a national formulary for the country and provided the health authorities with advisory services on the establishment of a drug control system, based on the reorganization of the laboratories responsible for this activity and the establishment of inspection procedures.

A PAHO/WHO consultant and personnel of the Adolfo Lutz Institute in São Paulo, Brazil, prepared 320 health standards for food control which were presented, discussed, and approved at the X Meeting of Ministers of Public Health of Central America and Panamá, held in Panamá City in August. These standards, together with 80 previously prepared for the same countries (1964) were discussed and reviewed at the First Seminar on Food and Drug Control for Central America and Panamá, held in Guatemala City in September. The legal departments of the respective Governments began to study how these standards can be incorporated into the health legislation of each country. The Organization prepared a technical publication, containing all 400 standards, for distribution to the food control services in the Hemisphere.

In compliance with Resolution XII of the XVI Meeting of the PAHO Directing Council and the V Recommendation of the IX Meeting of Ministers of Public Health of Central America and Panamá (Managua, Nicaragua; 1964), the collection of drug control laws and regulations and of information on existing systems of price control and sale of pharmaceutical products in the Americas was continued. To comply with Resolution WHA.16.36, regarding the clinical and pharmacological evaluation of drugs, the countries of the Hemisphere were provided with the information on precautions to be taken in selling and using products that may pose health hazards.

A consultant spent 2 months in Central America and Panamá studying current food and drug control services, availability of personnel, laboratory facilities, and health legislation. He prepared a report on Minimum Standards for Departments of Food and Drug Registration at Health Ministries, which was presented and approved at the X Meeting of Ministers of Public Health of Central America and Panamá. At the Institute of Nutrition of Central America and Panamá a special study was carried out on the installation of a Food Analysis and Control Department to act as a reference laboratory for the countries of the Central American Isthmus.

II. PROMOTION OF HEALTH: GENERAL SERVICES

The First Seminar on Food and Drug Control for Central America and Panamá was held in Guatemala City in September. This seminar reviewed and discussed the recommendations on minimum health standards on food and the minimum plan for the establishment of a food and drug control department in health services, which were later discussed and approved at the X Meeting of Ministers of Public Health of Central America and Panamá. The seminar was attended by 16 officials from the food and drug control services of those countries, by representatives of the Central American Institute of Investments and Industrial Technology (ICAITI), and by officials from INCAP and from the Organization.

Assistance was continued to the program for the control of pharmacies, drugs, and foodstuffs in Panamá, including the training of personnel attached to the Inspection Section and the specialized control laboratories of the University. The laboratories, which serve the countries of the Central American Isthmus by analyzing their drugs and pharmaceutical products, were provided with international standards, technical publications, and the means for the analysis and control of drugs and other chemical products.

HEALTH EDUCATION

Health education continued to be an important component of health programs, especially of those being conducted by general public health services.

In the field of health education the Organization provided 1 adviser to cooperate in the malaria eradication program in the countries of Central America and Panamá. In the Caribbean Area another adviser in health education, with headquarters in Barbados, cooperated in various activities carried out in Dominica, Grenada, Montserrat, St. Lucia, and St. Vincent.

A medical officer, adviser in health aspects, continued assigned full time to the Community Development Training Center (CREFAL) in Pátzcuaro, Michoacán, México. The first extraordinary course on education in community development, begun on 3 November 1964 for CREFAL alumni of the 1951-1960 decade, finished on 29 January 1965 with 20 persons from 14 Latin American countries. The Center's thirteenth regular course was held from 15 February to 10 September, and was attended by 60 students from all countries of Latin America, except Uruguay. The Center also held a special 6-week course on community develop-

ment and economic and social development for 24 national officials responsible for directing or planning community development programs in 13 Latin American countries.

Community development was given special emphasis in water supply programs for rural populations, especially in the Central American Isthmus; a special adviser was assigned to this task.

HEALTH STATISTICS

Two new activities in statistics were emphasized in the program of the Organization: the training of statistical auxiliaries and the development of plans for training and research in population dynamics. Plans were also developed for an expanded training program in hospital statistics, and the program itself was initiated in September. The Organization continued the collection, analysis and distribution of statistical data on mortality, morbidity and health conditions, the provision of consultant services, and collaboration of education and training of statisticians.

The subject chosen for the Technical Discussions of the XVI Meeting of the Directing Council of the Pan American Health Organization was "Methods of Improving Vital and Health Statistics," which stressed the concern of the Member Governments in developing adequate systems for obtaining information for health administration and planning. The subject was discussed by 6 panelists, including a professor of preventive medicine and several health administrators and statisticians. In discussing the problems of the Americas, special emphasis was placed upon the functions of the various professional, technical, and auxiliary personnel in the health field as producers and users of health statistics. While the roles of the statistician and auxiliary statistical personnel were stressed, special attention was also paid to the need of health personnel for current statistical data for administrative purposes, and thus to the latter's own responsibilities in promptly recording and reporting accurate information bearing on health. Proposals were made for strengthening and developing statistical systems and educational programs.

The panel of experts of the Technical Discussions supported the Resolutions of the XIV Pan American Sanitary Conference (Santiago, Chile; 1954) and the recommendations of the Regional Advisory Committees on Health Statistics (1960, 1962, 1964), as well as of



“Methods of improving vital and health statistics” was the subject of the Technical Discussions held during the XVI Meeting of the Directing Council.

the Second Regional Advisory Committee dealing with the Ten-Year Goals on Health Statistics which were based on the Charter of Punta del Este. Other recommendations for action contained in the Report on the Technical Discussions emphasize that (1) an adequate organization of statistical offices and systems in Ministries of Health must include records and reports systems to produce the essential statistics at all levels—local, regional, and national—for planning, administration, and evaluation of health programs; (2) methodology to be used in obtaining statistics should include sampling techniques in pilot registration systems for vital statistics, health surveys and morbidity statistics, and introduce as soon as practicable modern processing methods such as computers; (3) education and training in statistics should be included in medical and public health schools curricula to prepare professional, intermediate, and auxiliary statistical personnel; and (4) international assistance to national programs in health statistics should be increased through consultant services, seminars or meetings on technical problems, courses, and fellowships.

The Directing Council, having taken note of the Report on the Technical Discussions, recommended to the Organization and to the Governments that efforts be made as soon as possible to implement the recommendations for actions to develop satisfactory statistics for planning and administration of health programs.

The Organization continued to promote the improve-

ment of statistical activities throughout the Hemisphere by providing technical advice on the statistical programs of health services and hospitals and by participating in the planning of educational and training courses for statistical personnel.

Statistical advisers were assigned to all 6 Zone Offices and 5 statisticians were assigned to National Health Services or special country projects in Brazil, Colombia, Dominican Republic, Jamaica, and Paraguay. In Jamaica the adviser was assigned to the Faculty of Medicine of the University of the West Indies to develop the teaching of medical statistics to medical students and health personnel. In addition, 2 consultants in medical records were assigned: one to Argentina, to render assistance in countries in Zone VI and one to Trinidad and Tobago. Each consultant worked closely with statistical units of national health services.

Health Services

Plans for the reorganization of statistical services were initiated or carried out in several countries.

In Argentina new definitions, national norms for a uniform system of collection of data, and manuals of instructions were prepared in the national Ministry of Social Welfare and Public Health, where a new director of Statistical Services was appointed and provision was made for the employment of 5 additional technicians.

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In the province of Tucumán, routine procedures of collecting vital and hospital statistics were established, and a system of notification of diseases was begun in conjunction with the reorganization of the provincial Statistical Service and with plans for establishing a uniform system of reporting and national area of registration.

In Chile statistical forms were revised according to new definitions arising from the National Health Plan.

In Ecuador an increase in the budgeted funds made it possible to reorganize the statistical services; and the Division of Statistics was establishing an experimental area in health statistics in the province of Manabí, in which an integrated health program is being carried out.

In México a reorganization of the statistical services in the Ministry of Health and Welfare was being carried out.

In the West Indies, financial provision was made for health statistical services in Antigua and St. Lucia, and a position for a statistician was established in the Ministry of Health and Housing in Trinidad and Tobago.

Changes were made in record systems in selected hospitals in Argentina, Brazil, Colombia, Costa Rica, El Salvador, Honduras and in areas in the Eastern Caribbean. In Colombia, as one example, the Division of Auxiliary Technical Services of the Ministry of Public Health prepared norms for the organization of statistical departments in general hospitals. New forms for the registration, control, and evaluation of data were tested. They will be used throughout the country.

Vital Statistics

In some countries new forms for the registration of births and deaths were designed to comply with international recommendations; in others the improvement made came through the coordination of the functions of national agencies. More detailed tabulations of vital data was encouraged and early publication of national data stressed.

In Argentina the national registration area was extended and at year's end included the provinces of Buenos Aires, Catamarca, Córdoba, El Chaco, La Pampa, La Rioja, Mendoza, Misiones, Neuquén, and San Juan and the Federal Capital. In these provinces death certificates consistent with international recommendations are used and the registration of data conforms to nationally established norms. Life tables for each province in Argentina were in preparation by the General Directorate of Statistics and Census; and a

statistical series presenting data on mortality by age, sex, and cause (B List, *International Classification of Diseases*) for the period 1954-1963 was being prepared by the Ministry of Social Welfare and Public Health.

The area of registration was extended in Brazil to include acceptable registration units in Bahia. Data was processed for the registration area for 1963 and 1964 and was published for 1960 and 1961 for the area of Ceará, Rio Grande do Norte, Paraíba, and Alagoas.

In the Dominican Republic a demonstration area for the registration of deaths and births was established in the province of San Cristóbal.

Jamaica selected St. Elizabeth parish as a demonstration area in which special health investigations will be carried out in addition to the establishment of a system of civil registration.

In Nicaragua a medical certificate of cause of death was designed and presented to the National Congress for approval.

The reorganization of the Civil Registry was initiated in Paraguay. New birth and death certificates were designed in order to improve registration.

Mechanical processing of statistical information was begun in several countries: personnel received training in methods of processing data; statistical machinery was obtained or data processing services were arranged on a contractual basis. In Guatemala the Ministry of Public Health and Social Welfare made arrangements with IBM for the mechanical processing of statistics on births, stillbirths, and mortality by cause. Arrangements were made for the acquisition of such statistical machinery as card-punch machines, tabulators, and verifiers in Argentina, Guatemala, Honduras, and Jamaica. Panamá began to use mark-sensing IBM cards for the collection of vital data.

A National Committee on Vital and Health Statistics was formed in Jamaica and made several recommendations relating to the improvement of the vital and health statistics system, such as the acquisition of mechanical data processing equipment and a more prompt preparation and publication on vital statistics.

Morbidity Statistics

Planning for health needs must take into account not only mortality but morbidity; consequently, morbidity statistics are becoming increasingly important. Knowledge of the incidence and prevalence of illnesses, and of causes of hospitalization and medical consultations as

well as of communicable diseases, is essential in planning health programs.

The Organization continued the collection, analysis, and publication of morbidity statistics; provisional figures for cases of 4 quarantinable diseases reported in 1965 are shown in Table 25.

Efforts continued to be made to improve the systems of reporting and recording data on cases of notifiable diseases. In Brazil, in preparation for an expanded campaign against smallpox, efforts were made to obtain more accurate and complete data than was formerly available on the distribution of smallpox. Through visits to State capitals, all available data were obtained for recent years on the number of cases of smallpox, not only in capital cities but throughout the States. In Ecuador and Venezuela, work was begun on the establishment of demonstration registries for the followup of leprosy patients and their contacts. Reporting and statistical procedures were integrated as far as possible into the general system for records and statistics of health services. In Paraguay a new system of notification of communicable diseases was established in Asunción and in Health Region I. New reporting forms were introduced and procedures of recording and registration were revised.

Special emphasis was placed upon improving the recording of data in hospitals and health centers through training of personnel and through improvement of recording and filing systems. Several countries began collecting data on the causes for which medical care in hospitals and health centers is provided. In Argentina a hospital reporting system was in operation in the provinces of El Chaco, Mendoza, San Juan and Tucumán. Ecuador's 1961 report on hospital statistics was pub-

lished and the 1963-1964 was in press. A special study was made of the records system in hospitals and health centers in El Salvador. Jamaica conducted in its general hospital a census of patients and obtained data on the characteristics of the patients.

Surveys were planned or initiated in several countries in an attempt to measure the extent of various health problems. A clinical, radiological, and laboratory study on the prevalence of rheumatic diseases was conducted of a sample of 1,000 adults in Buenos Aires, Argentina; a survey of the prevalence of diabetes was conducted in the cities of Rosario and Santa Fe, among 40,000 persons, 20 years of age and older; and army recruits throughout the nation, and samples of students from the provinces of Formosa and La Pampa, were examined in a study of endemic goiter. The study of health manpower in Colombia progressed with the initiation of a health survey of a sample of 10,000 households; medical examinations of a subsample of 4,000 persons were also being made. Data were collected throughout Perú to provide basic information for the preparation of the National Health Plan.

International Classification of Diseases

By means of a grant from the Organization and with technical assistance from the Latin American Center for the Classification of Diseases (Caracas, Venezuela), staff from the Biostatistics Department of the School of Hygiene and Public Health of the University of São Paulo, Brazil, continued translating into Portuguese the *Clasificación Internacional de Enfermedades*, adapted for the indexing of hospital records, and Volume II of the *International Classification of Diseases*. The Portuguese version of Volume I, prepared in 1964, was published and distributed in 1965 by the Organization. The Ministry of Health in Brazil is providing for a second printing.

The International Conference for the Eighth Revision of the International Classification of Diseases met in Geneva during July. Recommendations for the Revision were submitted from this Region and those relating to the categories of infectious, diarrheal, and nutritional diseases were accepted by the Conference.

Other Activities

A meeting was held in January to plan for the development of a Manual on the Classification of Congenital

TABLE 25. REPORTED CASES OF QUARANTINABLE DISEASES IN THE AMERICAS, 1965^a

Country	Jungle yellow fever	Small-pox	Plague	Louse-borne typhus
Argentina	2	15 ^b	—	—
Bolivia	19	—	149	126
Brazil	14	1,333 ^c	119	—
Chile	—	—	—	11
Colombia	2	149	—	—
Ecuador	—	—	374	154
México	—	—	—	35
Paraguay	—	32	—	—
Perú	37	18	200	101
United States of America	—	—	6	—
Venezuela	5	—	—	—
Total	79	1,547	848	427

— None.

^a Based on official reports received at PASB through 1 June 1966.

^b Includes 1 imported case.

^c Data limited to 11 states and capitals of 2 other states.

II. PROMOTION OF HEALTH: GENERAL SERVICES

Malformations to promote comparability between studies carried out in various places.

A paper entitled "For a Fair Start in Life; World-Wide Statistical Situation" was presented in October at the Thirteenth Annual World Health Forum, held during the Annual Meeting of the American Public Health Association, in Chicago, Illinois. A review of the statistics on mortality among children and infants pointed out the deficiencies in available data. The necessity of obtaining more knowledge on the conditions of infants at birth, congenital malformations and the combinations of causes, nutritional deficiency and diarrheal and infectious diseases, and their contribution to childhood and infant mortality, was emphasized.

A working document on the use of sampling methods in Latin America in obtaining statistical information in the field of public health was prepared, during November, for the meeting of the Expert Committee on Health Statistics of the World Health Organization.

WHO headquarters staff provided consultant services in the design and selection of samples for studies to be conducted on mental illness, epilepsy and alcoholism in Chile and on payment of medical services in Venezuela.

ADMINISTRATIVE METHODS AND PRACTICES

The Organization continued to collaborate with the Ministries of Health in the improvement of administrative methods and practices, through advisory services, seminars, and training of administrative personnel.

An administrative methods officer was appointed early in the year to assist the Governments of the Caribbean Area in improving the administrative practices in the various health establishments. In collaboration with other administrative methods officers a definitive study of the organization and administration of the Ministry of Health and Housing of Trinidad and Tobago was undertaken; and to assist the Government in a reorganization of its services for health planning and to develop a Division of Administrative Services under a unified command, steps were taken for the appointment of additional administrative consultants, specialized in fiscal, personnel and supply management.

A Second Seminar on the Organization and Administration of Health Services in the Caribbean was held in Port-of-Spain, Trinidad, from 14 to 19 November,

under the auspices of the Government of Trinidad and Tobago, the Division of Public Administration of the United Nations, and PAHO/WHO. The participants in the seminar included 26 public health administrators from Antigua, Barbados, Bermuda, British Guiana, British Honduras, Dominica, Grenada, Jamaica, Montserrat, St. Kitts, St. Lucia, St. Vincent, Surinam, and Trinidad and Tobago; and PASB officials and technical advisers. Present also were observers from FAO and the United Nations Technical Assistance Board.

The Seminar considered that the most important problems of the organization and operation of health services, as revealed by a survey undertaken in the Eastern Caribbean, were: deficiencies in the quality and quantity of manpower available; insufficiency of resources to meet the demand for health services; and absence of systematic planning and of a suitable organization. Obstacles which prevented the achievement of maximum effectiveness in comprehensive health planning within the framework of national development planning and steps which may be taken to facilitate health planning were defined. A review was also made of the structural organization and administrative services of the health departments of Antigua, St. Lucia, and Trinidad and Tobago, and of the organization for health planning in Trinidad and Tobago.

An administrative methods consultant assisted in improving the organization and defining the functions of the Ministry of Health and Social Welfare of the Dominican Republic and in strengthening the operation of its administrative services unit. He also helped materially in the re-establishment of vital Government services during the civil disturbance.

The activities in Central America and Panamá were restricted to the consultant services provided by the advisers assigned to the water supply and the malaria eradication programs. The services were provided at all levels of the Health Ministries, particularly in the area of organization, transportation and training of administrative personnel. A short-term consultant studied the records management practices used in Costa Rica and advised the Ministry of Health accordingly.

The Government of Perú approved a new structural organization and considerable progress was achieved in its implementation. Corresponding revisions were made in budget and personnel systems, and plans for intensive training of administrative personnel were developed. Assistance was also provided to the Institute of Municipal Affairs of Colombia.

Assistance in varying degrees was provided with regard to the organization and other administrative activities in

several health institutions of Argentina, Chile, and Uruguay, and in every phase of planning and development of a course for administrative staff held by the Administration Institute of the University of Chile. Plans were developed for future courses, to be held both at the Institute and at the University of Buenos Aires.

The Second Seminar on the Organization and Administration of Health Services for the Countries of South America was held in Buenos Aires, Argentina, from 13 to 18 December, under the auspices of the Government and PAHO/WHO. The participants in this seminar were 23 public health administrators and planners from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Perú, Uruguay, and Venezuela; and PASB technical officials and advisers. An observer from the United Nations Technical Assistance Board and representatives from several governmental and nongovernmental institutions from Argentina, Chile, and Paraguay were also present. The seminar made a detailed analysis of the role of administrative services, personnel administration, and supply management in the national health plans and advanced valuable recommendations to promote their development.

See also *Administrative Methods and Practices*, Chapter III.

EVALUATION

Satisfactory progress continued to be made in the evaluation of projects in which the Organization is assisting the Governments. This activity was begun in 1963 and is based on measuring how many of the established targets were filled.

To permit each project to provide data susceptible of objective evaluation, the system of project reports was changed to include a clear definition of the objectives, the annual targets established, and the results achieved. The definition of target was the one suggested by the Working Party of the Regional Advisory Committee on Health Statistics that met in 1964, and reads as follows: "the numerical expression of a health activity planned for a given number of persons in a community, in a given period of time."

Since over 70% of the projects submitted reports in the new format more objective data have become available, as may be seen in the project descriptions appearing in Chapter VIII of this *Report*.

In view of the amount of objective data available, a study was begun to determine the possible use of modern computer techniques in classifying the data for future presentation in usable form, not only as simple information on accomplishments but as a tool for analyzing performance, funds needed, and for making projections of the future developments of each program. An objective retrospective study of project activities can also be based on such quantitative yardsticks.

B. SPECIFIC PROGRAMS

MEDICAL CARE

There was a definite strengthening of the medical care programs and activities outlined in recent years and, at the same time, work in this area was intensified to meet the increasing requests for advisory services.

Broader working relationships with the Organization of American States and the Inter-American Development Bank enabled the Bureau to expand its field of action on a far more solid basis, as well as to obtain the participation of other disciplines, with regard to activities in medical care, social security, and planning of hospitals and other health facilities. The Bureau intends to maintain these working relationships and to develop them even

further to include national and international agencies interested and engaged in activities relating to the administration of medical care services.

In July a Study Group met to discuss the Coordination of Medical Care in Latin America, in particular the relationship between medical care programs of social security agencies and those of Ministries of Health. The Group, convened by the Pan American Union and the Bureau, carefully studied the aims and fields of action of the health services of ministries and of social security services, and arrived at the conclusion that they had common objectives and goals, since both seek to attain the highest possible degree of health for the population.

The Study Group also discussed the degree of social

II. PROMOTION OF HEALTH: SPECIFIC PROGRAMS

security coverage as one of the elements that might contribute to the financing of health services covering the whole population of Latin America. The Group recognized that the attainment of that ideal situation would take some time, because the area has masses of rural population living without the benefits of services existing in urban areas. Moreover, this population usually widely dispersed, does not have the wherewithal to obtain suitable medical services or pay social security contributions. The Group therefore considered that the countries of Latin America were not at the moment in a position to apply social health insurance such as exists in technologically developed countries, nor were they likely to be in that position in the near future.

Mention was made of the modern idea of the right to health, as expressed in numerous international instruments, such as the Atlantic Charter, the Declaration of Philadelphia, the Constitution of the World Health Organization, and the Universal Declaration of Human Rights, all of which have confirmed a policy the basic elements of which are the right to comprehensive health care and the need to regionalize and coordinate the services provided by the State so that such right may be satisfied.

The Study Group recommended that the countries take the necessary steps to gradually achieve the highest possible degree of coordination between private and public health care services, and stated that the goal could best be achieved through total planning of the health sector, with the participation of all public and private agencies responsible for public health and social security in both planning and execution. The Group also recommended, as a first step for determining the nature and scope of the countries' health problems, that a survey be made to gather information on the resources available, their cost, and the use made of them by the population which has access to them.

The Bureau organized, in cooperation with the Inter-American Development Bank, the meeting of an Advisory Committee on Planning of Hospitals and Other Health Facilities to study the inability of many countries to construct and equip hospitals and outpatient departments. The Committee noted that in some cases, even though it had been possible to finance the building program, shortage of professional staff or insufficient funds had prevented its being put into operation.

After analyzing the shortcomings of hospital systems in most Latin American countries, the Committee recommended that the Bureau strengthen its advisory services in this field and try to obtain the financial participation of the international loan agencies, particu-

larly IADB, so as to help the countries to carry out their programs for the construction of hospitals and for other health facilities. Emphasis was placed on training as an integral part of medical care services, and it was therefore recommended that buildings constructed should be the university-hospital type, since teaching activities raise the scientific caliber of medical work and at the same time medical-care activities enable students to acquire a broad and realistic understanding of the nature of professional practice in the community.

The Report of the Study Group and that of the Advisory Committee were submitted to the XVI Meeting of the PAHO Directing Council which adopted Resolutions XIX and XXXVII recommending that studies be made, advice offered, meetings promoted, and working relations with the public and private international institutions engaged in this field be intensified so as to achieve the coordination of the various groups participating in planning the health sector and to ensure that provision is made in such health plans for the organization of regional or decentralized services, including hospitals, and that suitable training of technical and administrative personnel is promoted.

The two Reports were published in a single volume and were distributed to the Member Countries to serve as the basis for the Technical Discussions of the XVII Pan American Sanitary Conference, in 1966, which according to Directing Council Resolution XXIX will be on the topic: "Means for Promoting and Making Effective the Coordination between the Services and Programs of Ministries of Health, Social Security Institutes, and Other Institutions that Conduct Activities related to Health."

Preparations were begun for the survey recommended by the Directing Council on the relations between the medical programs of social security agencies and those of the Health Ministries. The countries participating in this survey are Brazil, Chile, Colombia, Costa Rica, El Salvador, Honduras, México, Panamá, Perú, and Venezuela.

The medical care programs continued to complete the stages provided for in the plans of operation in Argentina, Colombia, El Salvador, Panamá, Perú, and Uruguay. Medical care projects were begun in Barbados, Dominican Republic, Honduras, Nicaragua, and in Trinidad and Tobago. Short-term consultants were sent to Costa Rica and Venezuela. The projects in Costa Rica, El Salvador, Honduras, and Nicaragua were carried out in cooperation with the Organization of American States.

REHABILITATION

Rehabilitation activities have been increasing in proportion as the countries have sought ways of improving the condition of the disabled and the chronically sick, and of enabling them to once more lead a productive life. In 1965 the Regional Adviser gave consultant services to the Governments and interested institutions in Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Honduras, Paraguay, Perú, and Venezuela.

Collaboration in Argentina was provided particularly in assisting in the organization of the Latin American Committee on Prosthetics and Orthotics as well as the First Latin American Meeting on Prosthetics and Orthotics and Technical Assistance, and with the establishment of a prosthetics school for training and research for both technicians and physicians.

Recommendations were made in Bolivia on the number of personnel needed for the new rehabilitation center of the social security service, not yet inaugurated, and on an educational program for hospital physiotherapists. Advice was also given by a prosthetist on training programs in this field.

In Brasil, in addition to the continuing consultant service provided for the rehabilitation courses taught in São Paulo, advice was also given to several institutions in that city and in Belo Horizonte, State of Minas Gerais, on the reorganization of rehabilitation services.

The Pilot Rehabilitation Center was officially inaugurated in Chile. The center carried out courses on prostheses and occupational therapy and organized the First National Rehabilitation Seminar, at which a special study of personnel needs throughout the country was made. Rehabilitation activities were also carried out in the provinces of Antofagasta, Concepción, Talca, Temuco, Valdivia, and Valparaíso.

The Regional Adviser visited several rehabilitation institutions in Colombia and made recommendations on the training of physiotherapists, occupational therapists, and speech therapists, as well as on prostheses work proper and vocational rehabilitation.

The Regional Adviser visited several institutions in both Quito and Guayaquil, Ecuador, and recommended measures in connection with physiotherapy and the training of prostheses and orthoses technicians.

A short-term consultant specialized in physiotherapy was sent to San Pedro Sula, Honduras, in connection with a poliomyelitis epidemic. The consultant advised the Government of Honduras on the organization of physiotherapy services and training courses.

In Paraguay the appointment of a national committee to study a rehabilitation program was recommended.

Perú established a Rehabilitation Council at the Ministry of Public Health and Social Welfare, with the cooperation of the Regional Adviser, who recommended the necessary technical measures for developing a program of services and personnel training.

Several countries expressed interest in beginning rehabilitation programs.

MATERNAL AND CHILD HEALTH

The delivery of health care services to mothers and children is a major activity of the general health services projects operating in the countries of the Hemisphere. Designing a successful program of service delivery requires a survey of community health needs. In 1965 six projects undertook community health studies directly related to problems of mothers and children in Argentina, Colombia, Costa Rica, Jamaica, Panamá, and West Indies.

Although malnutrition continued to be a major problem in many countries, all projects reported an increased awareness of the problem and new or strengthened activities in this field. As to diarrheal disease, which is another major problem in Latin America, the above-mentioned projects reported intensified rehydration activities, particularly those of Argentina, Costa Rica, and Nicaragua. Projects in the Dominican Republic, Panamá, and West Indies introduced technical innovations of importance, such as emergency care, training of indigenous birth attendants, and health courses for school teachers. Evidence of improvement in the quality of services, through better coverage and skilled personnel, was reported from 7 projects. Ten projects expanded areas of influence by the opening up of new facilities to serve mothers and children. Integration of maternal and child health care services with community health care services and integration of the preventive and curative aspects themselves were reported by 2 projects in Argentina, and 1 each in Costa Rica, Cuba, and Panamá. New operating standards of service to mothers and children were prepared in Cuba, the Dominican Republic, Panamá, and Paraguay.

Evaluation of health care services to this segment of the population was approached by setting quantitative goals—number of persons to reach and the variety of

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services to be delivered—against which to measure the year's accomplishments. Ten of the projects set such goals.

In the field of nursing-midwifery, noticeable progress was reported in the countries of Zones V and VI. In Brazil the Organization sponsored and supported the first seminar in this country which brought together midwives, nurse-midwives, and nurses with obstetrical service responsibilities, 25 participants in all. In the wake of the seminar, improved relationships and joint planning extending beyond the participant groups became noticeable, and the Organization received several requests for study and advisory services in this field.

A series of similar seminars were held in Chile, resulting in improvements in service organization and personnel utilization. Similar improvements also occurred in some areas of Argentina and Uruguay as offshoots of general health services and nursing projects carried out with PASB cooperation through the provision of consultants in nursing-midwifery.

(See also Education and Training, Chapter III; Planning, Chapter IV; and Research, Chapter V).

NUTRITION

The nutrition programs of the Organization continued actively with limited expansion into new projects and substantial consolidation of existing efforts especially in the field of education and training. Emphasis was placed on the need for adequate planning and evaluation of nutrition programs, both national and international, in order to achieve a more logical and coordinated approach to this field within the context of national health services.

Applied Nutrition Programs

The majority of the applied nutrition programs continued to develop successfully. In 16 countries and territories the initial phase was completed, and a planned extension to other areas of the country was undertaken in Brazil, Colombia, Costa Rica, Nicaragua, Paraguay, St. Lucia, and Trinidad and Tobago. Preparations to initiate nutrition projects were undertaken in British Guiana and Cuba.

As some of these programs had been functioning for up to 6 years, in early 1965 the national authorities

in charge of the programs and the international agencies concerned expressed the need for an evaluation of the results achieved. In response to this demand the Organization planned and carried out in collaboration with FAO a technical conference on evaluation of applied nutrition programs. The PASB-FAO Working Group met in Washington, D.C., U.S.A., from 6 to 10 December. Present were representatives of Colombia, Costa Rica, Ecuador, Panamá, Paraguay, Perú, and Trinidad and Tobago and of ILO, UNESCO, UNICEF, and OAS. Background information for this undertaking was previously collected by a short-term consultant and PASB staff who visited 5 national programs in various stages of development in order to assess their status, problems, and needs; their findings were analyzed by the Working Group, which then prepared comprehensive guides in English and Spanish on methods and indices for evaluation of health, education, and agricultural aspects of applied nutrition programs.

Other Activities

Closely related to the evaluation of such programs was the increasing demand for improved methods of comprehensive planning of nutrition programs, especially in relation to national health programs and the health planning systems currently recommended. It was evident that current health planning practices could not be applied to nutrition without considerable modification. Therefore, a special technical conference was held in Washington, D.C., from 17 to 28 May, for the purpose of preparing a guide for the planning of nutrition programs. As a result of this meeting, PASB undertook the preparation of a manual intended to assist nutrition personnel to present their programs in an understandable and acceptable manner to health and national development planners. This manual should also enable general health planning units to determine the problems and needs in the field of nutrition as related to the total health problem.

Plans were continued for establishing, in collaboration with FAO, a Food and Nutrition Center in the Caribbean Area. A PAHO consultant visited several countries of the area to draw up a detailed plan of operations for the Center and to determine Government interest and commitments to this project. A FAO consultant also visited the area to complete the infor-



Children recovering from malnutrition attended by a supervisor of the Nutrition Rehabilitation Center at Mejía, Marulandia, Pereira, Colombia. This child's interest in food (*above*) shows that he has recovered from malnutrition.

mation and planning of the agricultural aspects of this endeavor.

A Seminar on Salt Iodization for the Prevention of Endemic Goiter was held in Salta, Argentina, in June, in collaboration with the Ministry of Social Welfare and Public Health. Designed to study the problems related to salt iodization programs in the Hemisphere, including technical, administrative, and financial aspects, the seminar was attended by 29 participants from 13 countries. The participants from each country represented either the public health interests or the salt-

producing industry. The exchange of ideas produced a series of detailed conclusions, and recommendations were drawn-up for the final report. As an immediate result of this meeting, Ecuador and Venezuela requested of the Organization and received the services of 1 short-term consultant to advise the respective Government on technical and administrative aspects of salt iodization programs.

The Organization continued promoting the establishment of nutrition recuperation services for children suffering from advanced protein-calorie malnutrition but

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without other diseases. These services are based on medical selection of cases, the provision of a specially enriched diet prepared and administered to the children under trained supervision in a day-care center, and the active participation of the child's mother or relatives. During 1965, Colombia and Haiti began pilot services of this kind, which are carried out as an activity of the integrated health services, and Costa Rica and Guatemala continued theirs.

Headquarters staff and Zone III Office collaborated with the U.S. Interdepartmental Committee on Nutrition for National Development and INCAP in planning a series of national clinical nutrition surveys for the countries of the Central American Isthmus (*see* INCAP, below).

At the request of Georgetown University, which was responsible for training Peace Corps members, the Organization planned and conducted in Washington, D.C., a 2-month nutrition course for 70 volunteers who were to be assigned to Brazil to work with the school lunch program. The course was oriented to the development of practical activities in school feeding and nutrition education by making use of the resources available bilaterally and locally.

Institute of Nutrition of Central America and Panamá

Since the causal factors of the severe problem of nutritional deficiencies are very diverse and highly complex and since any approach to the solution of this problem requires action on the part of the national planning and programming sectors, INCAP, in addition to cooperating with the member countries in their applied nutrition programs, operates a multidisciplinary research program. Another contribution the Institute makes to national efforts to improve the nutritional status of the population is the maintenance and continued expansion of its educational program, and the preparation and distribution of appropriate types of literature.

Programs in Member Countries

Nutrition surveys. To obtain quantitative data on the nutritional status of the population of the area, as well as on the causal factors of this present situation, INCAP prepared a nationwide nutritional survey for

each of the 6 member countries. The survey was made possible through the support given by the Governments of these countries and the Department of Nutrition of the Office of International Research (OIR) of the National Institutes of Health (NIH) of the United States of America. The survey covered sociocultural, agricultural, dietetic, cliniconutritional, anthropometric, and dental aspects; examinations of physical capacity, biochemistry, diabetes, parasitology, and serology in the civilian population, and in some countries in the military population, were also included.

In El Salvador the survey was carried out from 13 September to 12 November. In Guatemala, the nationwide nutritional survey was conducted between 8 February and 23 April; subsequently a further survey limited to the Capital was carried out and a start was made on the analysis and interpretation of the data collected. Arrangements were made to carry out the survey in Nicaragua in early 1966.

Expanded nutrition programs. In Costa Rica the expanded nutrition program continued its activities, which since the 1963 expansion of the program has been carried out through 124 elementary schools, 3 teacher-training colleges, 37 health units, 29 nutrition centers, and 31 agricultural extension agencies. In view of the results obtained, the Government drew up a plan to further enlarge the program and requested the assistance of international development agencies. The aim is to bring an additional 40 elementary schools, 5 health units, 5 nutrition centers, and 5 agricultural extension agencies into the program.

The El Salvador program initially included 79 elementary schools, 9 health centers, and 7 agricultural extension agencies. The Government now wishes to convert it into a nationwide program in which all health, education, and agricultural agencies with the pertinent resources will participate.

In Honduras, 28 elementary schools, 2 health centers, 1 health subcenter, 6 health posts, and 3 agricultural extension agencies participated in the expanded nutrition program in its second year of activity. This program was hampered by a lack of trained nutrition personnel. One professional nutritionist and 2 auxiliary workers trained at INCAP carry the entire responsibility for this program.

As a first step the medical officer appointed to direct the Department of Nutrition in that country remained at INCAP throughout the year, undergoing training that will enable him to discharge the duties entrusted to him. He returned to Honduras at the end of the year.

The year also saw the extension of the expanded

nutrition program in Nicaragua into the North of the country. Seven nuclear schools, 65 elementary schools, 1 teacher-training college, 8 health centers, and 5 agricultural extension agencies are participating. Satisfactory progress was made in the Panamá program. In regard to the establishment of vegetable gardens, it was interesting to note that they had expanded from the schools to a considerable number of households.

Nutrition rehabilitation services. In Costa Rica special attention was given to the rehabilitation of children suffering from malnutrition. Since the children cannot be successfully treated as ambulatory patients, they are admitted to the Nutrition Rehabilitation Clinic attached to the Nutrition Department of the Ministry of Public Health.

Guatemala now has 4 nutrition education and rehabilitation services. They are located in various parts of the country and although attached to health centers are directed centrally. They take care of undernourished children for whom ambulatory treatment is not suitable but who do not require hospitalization. These services are of special interest to INCAP which is evaluating their effectiveness with a view to their possible use in other countries.

To combat malnutrition, the Association of Newspapermen of Guatemala has organized a campaign which is receiving advisory services from INCAP. Initial efforts will be aimed at establishing nutrition education and rehabilitation services at all health centers in the country.

Prevention of endemic goiter. Negotiations were resumed to secure the introduction of salt iodization in all countries in the region. El Salvador was provided with advisory services in connection with a review of its legislation and the framing of salt iodization regulations.

The results of the program in Guatemala exceed even the most sanguine forecasts made 5 years ago, since the prevalence of endemic goiter has been reduced to 5%.

The Government of Panamá requested and was given advisory services in connection with the possible institution of a salt iodization program at an early date and the establishment of nutrition rehabilitation services.

Commercial distribution of Incaparina. In 1965, a total of 3,372,885 pounds of this product were sold. This 95% increase in sales over 1964 was achieved by the authorized commercial producers in Guatemala and Colombia, where Incaparina was sold throughout the year (Figure 7).

Incaparina marketing surveys were begun in June in

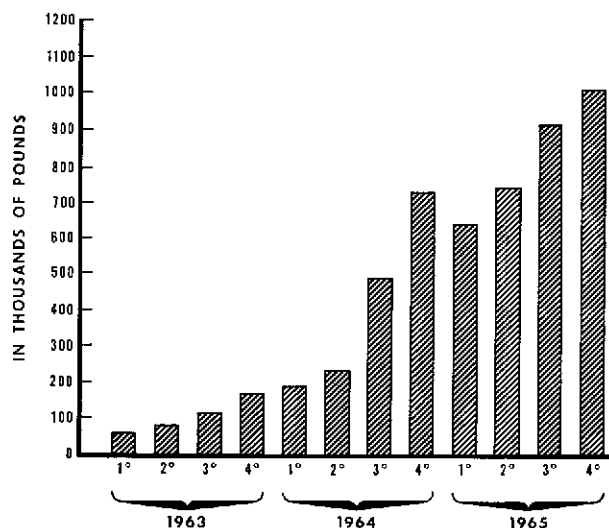


FIG. 7. QUARTERLY SALE OF INCAPARINA.

Panamá and Venezuela, and in Brazil the acceptability test was completed.

Acceptability tests. The mounting sales of Incaparina during the year and its successful commercial distribution in Guatemala prove that after 5 years the product is now accepted in the country, where it was first put on the market. Two consumer surveys, one conducted by INCAP, and the other by the producer, confirmed that Incaparina is widely known as an inexpensive, nourishing food which is consumed by almost 50% of the persons interviewed. Incaparina sales in Guatemala equal or exceed those of many other packaged products that have been on the market for some time. Because of the volume of sales the producer was able to reduce the price of a 1-lb. package of Incaparina, which nutritionally is biologically equivalent to 18 glasses of milk, to Q/0.20.¹ At the end of the year, new production capacity was being installed in Guatemala to meet the increasing demand for this product. The increased sales of Incaparina in Colombia in the last part of the year appear to indicate a degree of acceptance similar to that achieved in Guatemala.

Opening of new markets. The acceptability studies in Brazil were completed. Marketing tests were begun in Valencia, Venezuela, and in two provinces in Panamá.

The necessary permit to produce and distribute Incaparina was given to a commercial firm each in Costa Rica, El Salvador, Honduras, and Nicaragua, which together have a population of 7 millions. Acceptability tests in these countries were begun in October.

Modification of Incaparina. Up to the present time all commercial producers of Incaparina used precooked

¹ Equivalent to US\$0.20

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corn as the cereal base for the formula. In 1965, however, INCAP completed several laboratory studies, including the biological assessment and stability testing of a formula using roasted corn.

Education in nutrition. One of the most important activities of the expanded nutrition program in Costa Rica was the incorporation of education in nutrition into the curricula of teacher-training colleges so as to enable teachers to teach the subject in elementary schools. Advisory services and basic teaching materials necessary were provided in connection with the development of this phase of the program at the Heredia Teacher-Training College, the largest in the country. In view of the success of the project, it will now be possible to duplicate it in the other similar colleges in the country.

In cooperation with the Nutrition Department of the Ministry of Public Health of Costa Rica, INCAP reviewed all the educational material produced for teachers in the past 10 years. An 800-page mimeographed *Nutrition in the School* textbook was prepared and will be distributed by the Ministry in early 1966 to teachers and students in teacher-training colleges in the country.

In El Salvador, INCAP personnel conducted a 44-hour training course for the home educators who recently joined the staff of the Department of Agricultural Extension.

In cooperation with UNESCO, INCAP held a course on health and safety in November. The course was attended by 102 inspectors of elementary and secondary schools and dealt with the feeding of the school child and the incorporation of nutrition into the elementary school curriculum.

A 40-hour course on education in nutrition was given in Honduras and was attended by 123 elementary school teachers from the Choluteca and Danlí areas, where the country's expanded nutrition program is in operation.

Nicaragua incorporated nutrition into its elementary school curriculum through the developing of working units. The teaching of nutrition was begun in schools in which the teachers' training and interest made it possible to try out the new program and acquire sufficient experience to allow it to be introduced into all schools under the supervision of the technical staff of the Nutrition Department of the Ministry of Public Health, which has been receiving international advisory services throughout.

In collaboration with the Nutrition Division and INCAP, the home educators of the Agricultural Extension

Service held a 2-day seminar whose main topic was the incorporation of nutrition into the home economics activities they perform.

In Panamá, 27 home educators of the Agricultural Extension Service attended a course on education in nutrition, conducted by staff of the Institute. The course coincided with the Fourth Annual Meeting of the National Federation of Housewives, and discussions centered on the incorporation of Incaparina into their club programs.

Research

One of the contributing factors to nutrition deficiencies in developing countries is the shortage of foodstuffs, especially of animal origin. It has been emphasized that this problem may become aggravated by the rapid population increase. In order to establish an agriculture and trade policy, quantitative and qualitative data on the minimum food requirements of both present and future populations must be available.

The addition of an economist to the professional staff of the Institute made it possible in 1965 to prepare estimates of the minimum amounts of each food group necessary to meet the nutrition requirements of the present population of each country in the Central American Isthmus, as well as the requirements of the estimated population 10 years hence. The study pointed up agricultural and livestock production as areas in which greater activity will be required to remedy already existing deficiencies or to prevent future shortages. The study in question was made available to national, regional, and international agencies engaged in programs for the social and economic development of the Isthmian countries.

It was once again confirmed that cereals, especially corn and rice, and to a lesser extent wheat, constitute and will continue to constitute a basic part of the regular diet of the inhabitants of the area. During the year, an assessment was made of various possibilities of increasing the protein content of the byproducts of these three grains with different protein concentrates that are available or potentially available in the area. As the food processing industry is only just beginning and it is still the custom to process cereals at home, INCAP has been exploring ways of improving their nutritional and biological value, as well as that of other products of basic importance to the diet. It was possible, for example, to verify that the biological value of the protein in corn and beans can be improved by using cer-

tain specific fertilizers, which not only contribute certain trace elements but also increase the yields. However, the possibility of enhancing biological value through genetic changes is far more promising. Certain experiments succeeded in isolating a given genetic characteristic which, added to any variety of corn, produced a grain with a far higher protein value than the variety of corn commonly in use. The proteins in the hybrid corn are almost as good, in nutritional terms, as proteins of animal origin. Considering that about 70% of the protein intake of some populations, such as that of rural Guatemala, for example, is derived from corn, this discovery undoubtedly opens up the possibility of a speedy and effective means of overcoming the present severe protein deficiencies of the population of the area, and what is more, it requires no change in dietary habits or in social, economic, and cultural patterns.

As a first step, it is now essential to obtain confirmation, through studies of nitrogen balance in children, of the biological value of the proteins in these new corn varieties when consumed by the human being. Whether or not this discovery is applicable to the human diet in the area of Central America, and whether or not the foodstuffs once prepared retain their organoleptic qualities, which is the prime requisite for ensuring their acceptability, and hence inducing the people to cultivate such new corn varieties will be determined.

The byproducts of industrial processing of grains were studied for possible use as animal feed. The information collected will be added to the "Composition Table and Nutritive Values of Feeds and Fodder in Central America and Panamá," on which INCAP has been working for some time. The Table, which includes the chemical composition, nutritive value, and various uses of feeds and fodder, will supply information that is usually needed by the stockraising industry.

The Table will also include indications for preparing cottonseed cakes as a protein concentrate for feeding pigs and domestic fowl. At present these preparations are usually made from soy beans, which have to be imported and are expensive. Until now it has not been possible to use cottonseed meal for this purpose because it was toxic to pigs, and the eggs of hens that fed on it had an undesirable pigmentation. Both problems were solved by INCAP as a result of laboratory studies. When the pertinent pilot tests are completed, and the applicability and economic value of the procedures now being tested are demonstrated, the Institute will issue the pertinent recommendations.

In the area of vegetable mixtures, other possible for-

mulas were developed and evaluated in order to adapt them to various situations.

The Institute also studied factors determining inadequate utilization of nutrients not because of the diet as such but because of the host. In this connection, mention should be made of the study on the epidemiology of diarrheal diseases, action mechanisms, and the effects they produce on nutrition in childhood.

The longitudinal study underway in a rural community in Guatemala entered its second year; it deals with the colonization of the intestines of children by bacteria, viruses and parasites, and the relationship of these to the diet and health of the child. The study included all children born during the year. Additional data were thus obtained on pregnancy and delivery, diet of the child, its growth, development, and general state of health, and the appearance of possibly pathogenic bacteria, viruses, or parasites in the feces, samples of which were collected at regular intervals. A correlation of all these observations indicated that host characteristics are of a major importance in determining the degree of damage such pathogenic agents can produce. It also suggested that such agents can seriously affect the growth and development of the child by acting synergically with nutrition deficiencies, even though no clinical pathology may be apparent.

Studies on the relations between enteropathogenic agents and health likewise suggested that the indigenous, or autochthonous flora, which is considered to be non-pathogenic, may be of far greater importance to the health and nutrition of the child than was previously believed. This suggestion arose out of the various experiments on laboratory animals. For that reason preliminary studies were begun on the method to be used and arrangements were made for qualitative and quantitative investigations on that flora to establish its relationship both to the diet and to the general state of health of the child.

Studies on the nutritional deficiencies in the area placed emphasis on those aspects which are of most importance from the public health point of view, namely: (1) development of practical methods for early and, if possible, quantitative assessment of the status of protein depletion; 2) the effects of slight but prolonged deficiencies on the population, with particular attention to child growth and development, and work capacity and performance of adults; and (3) clarification of specific problems connected with the physiopathology of severe protein malnutrition.

As to the first item, methods for assessing the status of protein nutrition in population groups, a determina-

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tion of the magnitude of this problem was considered essential, as was an evaluation of the results of programs aimed at correcting it. An evaluation was begun of the reliability and practical applicability of certain biochemical tests which the Institute laboratories had previously developed, using the findings of earlier nutritional surveys in the countries of the Isthmus. At the same time, new biochemical methods to study possible alterations in the metabolism of the human organism in its adaptation to conditions of low-protein intake were explored by analyzing the enzyme systems in such readily obtainable material as leucocytes.

Regarding the second item, the effects of subclinical malnutrition on the population, the financial support of the Institute of Child Health and Human Development of NIH made it possible to begin the first stage of a longitudinal study to evaluate the effects of malnutrition on the mental development of children, specifically whether the psychomotor development of children in Central America, which according to previous studies differed from the norm, are due to nutritional deficiencies alone, or to multiple social and cultural factors.

The effects of chronic subclinical malnutrition on work capacity and performance of adults were explored initially by studies on the body composition of various adult groups selected according to their diet and other living conditions. Adults who on the basis of other studies could be considered to be undernourished had a thin body very akin to that considered normal among



A field worker tests the mental development of a young child suffering from chronic mild undernutrition.

well nourished people. These data seem to point to the existence of a process of adaptation to low intake, especially of proteins, and were corroborated by the initial work done in evaluating the cardiovascular response to severe physical exercise. In fact, when the "Harvard step" test was used in a low-income rural population group of 800 young adults, the average index was 84, which is higher than the reported index for North American soldiers after a certain period of training. During the year, a work physiology laboratory, which will make it possible to clarify these questions, was installed and equipped.

Finally, in connection with the study of severely undernourished children, it was possible to devise a more practical and precise procedure than that hitherto in use for quantifying the degree of severity of protein depletion. It consisted in comparing the amount of creatinin excreted in the urine in a 24-hour period by a malnourished child with that excreted by the well-nourished child of the same height. The correlation between the reports obtained by these methods and the biochemical or functional parameters, known to be altered in cases of protein destruction, was very good.

Considerable progress was made in studies on anemia in undernourished persons. Indications are that anemia must be assessed, not in terms of the red blood cell or hemoglobin concentration in the peripheral blood, but of the total mass of red blood cells and hemoglobin in the circulating blood. By these terms, undernourished children show a greater deficit than the usual hematological studies indicate. It was also demonstrated that in studying anemia in this way, no suitable response is obtained to the administration of such specific hematopoietic agents such as iron, folic acid, or Vitamin B₁₂, except in rare cases where there is a marked deficiency of one of these elements, superimposed on basic protein-calorie malnutrition. In the majority of cases the hematological response coincided with protein repletion and with the general metabolic stimulus which this produces.

Lastly, the studies aimed at clarifying the mechanism responsible for intestinal absorption, previously verified in protein-calorie malnourished children, were continued. These studies are important because poor absorption may be the factor which maintains and aggravates the deficiency and prevents a more rapid recovery in response to treatment. Studies of absorption activated through stimuli were therefore begun in order to assess the possible role of the pancreas in this mechanism, and in addition, histological and histochemical studies in biopsies were used to investigate changes

in the intestinal mucose. Tests were made also in experimental animals, for the same purpose, using the intestinal loop technique to study the various processes of intestinal absorption *in vitro*.

Training

A Division of Education exclusively devoted to planning and coordinating all training activities was established at the Institute. The Division concentrated its efforts on organizing the first university-level course to prepare nutritionists and dietitians for Central America and Panamá, and on preparing the syllabus and installing the technical and physical facilities required for the course. A total of 180 applications were received for the course, to which the University of San Carlos, in Guatemala, gives academic recognition. In common agreement with the health authorities of the member countries and in accordance with the criteria established by the above-mentioned university, 20 students were chosen and awarded UNICEF fellowships,

which will be supplemented with funds from the INCAP regular budget.

All previously established programs continued to be conducted in the interim and simultaneously with the reorganization of the teaching program in accordance with the new plan (Table 26).

Publications

The number of requests for publications prepared by the INCAP Nutrition Education Service continued to increase. During 1965, a total of 126,963 copies of such publications were distributed. Publication of the quarterly *INCAP informa . . .* was also continued.

MENTAL HEALTH

The problems bearing on mental health in the Hemisphere are many, but the human and material resources

TABLE 26. COUNTRY OF ORIGIN AND TYPE OF STUDY OF ATTENDANTS AT INCAP TRAINING PROGRAMS, 1965

Country	Type of training					Number of fellows
	Programs			Nutrition in public health (2½-month course)	Applied nutrition for Latin American dietitians (11-month course)	
	Applied nutrition	Laboratory	Clinical nutrition			
Argentina.....	—	—	—	3	3	6
Barbados.....	—	—	—	1	—	1
Bolivia.....	—	—	—	1	1	2
Brazil.....	—	1	1	—	2	4
Colombia.....	—	1	—	4	—	5
El Salvador.....	4	5	—	—	—	9
Guatemala.....	9	17	2	1	1	30
Haiti.....	—	—	—	2	—	2
Honduras.....	—	—	—	2	—	2
India.....	—	1	—	1	—	2
Jordan.....	—	—	—	1	—	1
Malasia.....	—	—	—	1	—	1
Nicaragua.....	—	1	—	—	—	1
Panamá.....	—	—	—	2	—	2
Paraguay.....	—	—	—	1	—	1
Sweden.....	—	—	1	—	—	1
United States of America.....	1	2	5	8	—	16
Uruguay.....	—	—	—	2	—	2
Venezuela.....	—	—	—	1	2	3
Total.....	14	28	9	31	9	91 ^a

— None.

^a Does not include 6 fellows (including 1 from Iran and 1 from Kenya) who made observation visits.

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available for solving them are few. It is therefore difficult to provide preventive and curative psychiatric services for all those in need of them. The shortage and unequal distribution of such services for both children and adolescents is especially notable, since these services are only available in a few clinics in the most populous cities.

In 1965 the countries of Latin America continued their efforts to improve the care given in the traditional psychiatric hospital by accentuating the therapeutic aspects and playing down the custodial ones. The countries also expressed interest in expanding curative and preventive activities outside the hospital, through the establishment of outpatient clinics, psychiatric wards in general hospitals, and dispensaries.

The Organization has been collaborating with several countries in various ways, such as drawing up national mental health programs and, where these already existed, providing consultants for specific programs. In Argentina, for example, research work was continued on attitudes and modes of communication of families of schizophrenic patients, and in Chile an epidemiological investigation on mental diseases, in particular epilepsy, was begun. As a result of advisory services given in the past 3 years, a mental health plan was prepared and put into execution in Jamaica, and psychiatric nursing courses were conducted at a demonstration unit in Venezuela.

The need for epidemiological studies on mental diseases in Latin America was the subject of a meeting of a study group which discussed nomenclature and the order of priority of transcultural epidemiological studies, particularly those relating to epilepsy.

A Seminar on Mental Health for the Caribbean Area was also held, in Kingston, Jamaica, from 6 to 11 September. The 32 participants from Aruba, Bahamas, Barbados, Bermuda, British Guiana, Curaçao, Dominica, Grenada, Guadeloupe, Jamaica, Martinique, Puerto Rico, St. Lucia, St. Vincent, Surinam, and Trinidad and Tobago, together with 5 temporary advisers and 1 short-term consultant, discussed general aspects of mental health. The report of the meeting contained specific recommendations on mental health programs at both the national and international levels.

The Mental Health Information Center on Latin America processed 60% of the 1,005 completed questionnaires received from psychiatrists in Latin America. The Center also began to compile a collection of laws concerning mental patients, for which the initial survey was completed in Argentina, Bolivia, Brazil, and Chile. Bibliographical services continued to be provided and

information was given, on request, to Government agencies and professional health workers.

DENTAL HEALTH

In Argentina the Organization cooperated in a round-table discussion held during a meeting of Argentinean and Uruguayan dentists and also in a training course in social dentistry, held in Buenos Aires from 20 to 23 September for 39 dentists from both countries.

A consultant cooperated in Rio Grande do Sul with officials of the Government of Brazil, in order to include fluoridation aspects in a course on water supply, and equipment was supplied for trials to find out whether calcium fluoride could be used to reduce the present cost of fluoridation in Latin America.

In Colombia 2 consultants cooperated with national officials in order to incorporate dentistry aspects in the study on Human Health Resources and Medical Education, for the purpose of formulating a National Dental Plan. The preparatory phase of the study, which included designing the population sample for the epidemiological dental investigation, was completed.

Assistance was again given to the University of Antioquia in the study (begun in 1964) involving the use of cooking salt as a vehicle for fluor for the prevention of dental caries in rural areas. At the present time fluoride is being distributed to the communities included in the program, and the necessary controls are in effect. A consultant attended an international meeting on public health dentistry, which was held in Santiago, Chile, from 1 to 5 December.

The Organization provided advisory services to Venezuela for the preparation of a comprehensive dental plan for the whole country, covering present status of dental health and the factors contributing to that state (social, anthropological, and economic aspects); the human and physical resources available; general aspects of dental practice; and the status of teaching of this discipline, from its inception to the present. The study is to be used for formulating a national policy for dental education and the professional practice of dentistry, and as a guide for similar studies in other countries.

Assistance was also provided to the Venezuelan Ministry of Public Health and Social Welfare to study the possibility of reorganizing the Division of Dentistry, to whose chief the Organization also awarded a 3-month fellowship to study public health dentistry at the School

of Dentistry of the University of São Paulo, in Brazil. The Dental Association was advised in the formulation and application of a national plan for the installation of dental clinics which would operate in cooperation with the Ministry of Public Health. Two consultants helped with this plan which was started in 2 areas of the capital.

The Organization collaborated with the Latin American Association of Dental Schools (ALAFD) with regard to the organization of a headquarters office and its installation and the establishment of a plan of action. In addition, assistance was given in the preparation of a plan for requesting financial assistance from the American Dental Association.

Special literature was prepared and distributed during the year to all Member Countries.

RADIATION AND ISOTOPES

The growing use of radiation and isotopes in medicine—both clinically and for research—as well as in industry makes it essential that the safe application of these tools be adequately understood. Furthermore, since nuclear energy is becoming an important source of power it requires proportionate development in radiation protection.

The Organization is carrying out a program designed to: (a) stimulate national health services to adopt international standards and develop procedures and regulations for radiation protection in the use of X rays and radioisotopes and for the disposal of radioactive wastes; (b) promote the teaching of basic health physics, radiobiology and radiation protection techniques in professional schools; (c) foster the use of radioisotopes for medical diagnoses, therapy and research; (d) encourage research in applications of radiation which may have medical, public health or veterinary significance; (e) organize training courses for paraprofessional personnel who will be working in radiation protection health services; and (f) promote courses for professional personnel to receive instruction in the medical uses of radioisotopes.

Six stations have been provided with air sampling equipment and 2 of these are also cooperating in the milk sampling program. The surveillance stations are manned by local personnel and the samples are sent through the Organization to the United States Public Health Service laboratories in Rockville, Maryland, and

Montgomery, Alabama. After the analysis is carried out the USPHS sends the results to the Organization, which provides administrative and reporting services to the stations.

With the addition of a radiation physicist to the field staff in 1965 it was possible to encourage countries to join this program. From his field station in Lima the adviser visited Argentina, Brazil, Chile, Colombia, Jamaica, Trinidad, Uruguay, and Venezuela, as well as places in Perú to assist and advise in the establishment of radiation protection programs. He distributed educational material in Spanish and provided advice in a number of countries for the training of personnel for radiation health inspection services.

The services of 1 short-term consultant were provided to Jamaica to assist in establishing a more extensive type of survey involving rainfall, altitude, and animal feed in order to establish, if possible, their relationship to differences in radionuclide content of milk samples from diverse milk sheds.

As a result of the consultant service in food preservation by irradiation provided to Venezuela in 1964, in 1965 a request was received to provide additional training for the radiation physicist of the Venezuelan Institute of Scientific Research to study the techniques for shellfish preservation. This was carried out through the cooperation of the Louisiana State University.

In areas such as Latin America, where food preservation devices are scarce, the potential value of irradiation looms very important to ease food distribution procedures, reduce food wastage, increase the economy and, above all, to improve human and animal nutrition. The distribution of technical information bulletins to the Member Countries has been planned to bring the latest information on this subject to the attention of the Ministries of Health. Initial contacts were made in 1965 with experts in the field of food preservation through irradiation so that their services can be procured when requests for this kind of program are received.

Close contact is maintained with the USPHS Division of Radiological Health, so as to provide updated publications, some translated into Spanish, to Latin America. The Organization received cooperation from the U.S. Atomic Energy Commission relative to research and the provision of publications. In order to better assist the field staff in developing radiation programs, guidelines were prepared for distribution.

The Organization collaborated with WHO in providing physical facilities and in conducting a Meeting on Epidemiological Studies in Human Radiation Biology

for 40 participants from Europe, the East, Latin America, and the United States of America.

INDUSTRIAL HEALTH

The Organization presented a paper at the 11th Session of the Economic Commission for Latin America (United Nations), held in México City from 6 to 17 May 1965. The paper stressed the need to take health problems into consideration when planning for industrial development. The Commission agreed to discuss this subject at the Regional Symposium on Industrial Development, planned for March 1966 in Santiago, Chile.

A project was developed for the establishment of an air pollution surveillance network in cooperation with 10 Latin American cities to obtain comparable data on the extent of the air pollution problem in Latin America. A manual of instructions for the operation of this project was being prepared at year's end, at which time several cities, notably in the outlying area of São Paulo, Brazil, and in Buenos Aires, Argentina, had already begun project activities.

The First Argentine Congress on Environmental Health was held in Buenos Aires in October. The Regional Adviser on industrial health presented a paper on the importance of occupational health in industrial development, and on the type of program which Argentina could pursue in industrial hygiene and air pollution. In December industrial hygiene lectures were presented by the School of Sanitary Engineering in the University of Buenos Aires, with assistance from the Organization.

An appraisal of the program of the Institute of Occupational Health of Bolivia was conducted during September. At that time the Institute was occupying a new building, had acquired a considerable amount of equipment for physiology studies and industrial hygiene chemistry, and had a staff of nearly 40 persons, half of them professionals. The appraisal of the program contained 16 recommendations. If carried out, they should go a long way towards strengthening the program in occupational health in Bolivia.

The Regional Adviser paid a brief visit to Jamaica, in May, to explore the possibility of presenting an orientation course in industrial hygiene for certain interested groups in that country and the need to develop an industrial hygiene program within the Ministry of

Health. As a result of discussions with personnel in the Ministries of Health and Labor and in the University of the West Indies a program of work in industrial hygiene was outlined in the report of this visit.

Institute of Occupational Health and Air Pollution Research

Training activities in the Institute of Occupational Health and Air Pollution Research, located in Santiago, Chile, were intensified. The first training course in industrial hygiene and safety was held between 3 May and 30 September and was attended by 16 students: 1 each from Argentina and Panamá, 3 from industry, and 11 from the Chilean National Health Service; all were either employees needing additional training or else had received fellowships. Every one of the National Health Service trainees was immediately assigned to industrial hygiene and safety work, thus considerably increasing the Service's staff in this field.

Other teaching activities also carried out in Chile included: nine 3-hour sessions for students of preventive medicine; lectures on radiological protection sponsored by the College of Medicine; and a course for chemists, with 18 students, sponsored by the Catholic University. Individual instruction was given to members from industry working in industrial hygiene. Members of the Institute's staff participated in an introductory course in industrial hygiene at the School of Public Health which was presented to 32 students, a safety course for hospital directors, an orientation course for industrial workers with an attendance of 60, and lectures in industrial medicine to medical students in the sixth year, which included 50 students.

Research conducted on heat exposure and pulmonary function, as well as on health conditions, involved 834 iron miners, some 2,000 copper miners, and 406 nitrate field workers. The program on radioactive fallout was continued, as was the dosimetry service of the Radiological Protection Laboratory; some 800 exposed persons participated in the latter. A study of the effects of gas exchange on pulmonary ventilation in silicotics was also initiated in order to determine their incapacity, for medico-legal purposes.

Three outside consultants worked at the Institute during the year. One was engaged on air pollution, with particular emphasis on meteorology; his report on the air pollution problem in Santiago outlined action which will be carried out by Institute personnel. The second consultant was a specialist who contributed to a curric-

ulum for physicians and engineers in occupational health; he also outlined a program of research in occupational health and made suggestions for its implementation, presented a series of lectures on toxicological subjects at universities and hospitals in Santiago, and directed round-table discussions for Institute staff. The third consultant, a physiologist, worked with the Institute's physiologist in outlining a course of investigation with particular emphasis on work physiology.

In addition to its teaching and research activities, the

Institute provided an increasing amount of services to industry, the National Health Service and other governmental agencies.

At the end of the year, nearly 80% of the funds allotted for equipping the Institute with modern instruments had been used and the equipment installed and in operation. As to staff, the Institute had 10 professionals working full time, 16 administrative and clerical staff members, and received 60 man-months in part-time professional and technical services.

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This Chapter contains information on education and training projects proper, on education and training activities conducted as part of general and specific health projects, and on the fellowships granted or administered by the Organization.

The educational activities conducted by the Pan American Zoonoses Center and the Pan American Foot-and-Mouth Disease Center will be found in Chapter I.A., *see under* Zoonoses. For corresponding activities by the Institute of Nutrition of Central America and Panamá, *see under* Nutrition; and for those of the Institute of Occupational Health and Air Pollution, *see under* Industrial Health, both in Chapter II.B.

Schools of Public Health

The Organization continued to give advisory services to schools of public health in the Hemisphere in accordance with requests received from the countries.

The IV Conference on Schools of Public Health in Latin America was held in Puerto Rico from 14 to 19 November and dealt with "The Teaching of Epidemiology in Schools of Public Health." The meeting was attended by the deans and the heads of the epidemiology departments of the 10 Latin American schools of public health. Besides the host school, the others represented were those of Argentina, Brazil, Chile, Colombia, México, Perú, and Venezuela. Each dean reported on and discussed the progress achieved in the school under his supervision since the III Conference.

At the above-mentioned meeting, 5 temporary advisers presented papers on: "The Bases of Epidemiology"; "Use, Goals, and Purposes of Epidemiology"; "Recent Advances in Epidemiology"; "Postgraduate Training in Epidemiology"; and "The Role of the Epidemiologist in Planning Economic Development."

A Traveling Seminar on the Organization and Administration of Schools of Public Health in the Eastern Mediterranean Region was conducted from 6 to 23

March for the deans of 14 public health schools of the United States and Canada. The group visited the Institute of Public Health in Alexandria, Egypt; the School of Public Health of the American University in Beirut, Lebanon; and the School of Public Health in Ankara, Turkey. The principal topics discussed were public health curriculum and field training and work; teaching of epidemiology and statistics; occupational health; and methods and techniques of teaching. The objective of the seminar was to acquaint the authorities of schools which receive a large number of foreign students with the situation in other countries.

A consultant assisted in a revision of the curriculum of the recently reorganized School of Public Health of Cuba. The report reviewed the aspects to be taken into account in providing the school with the minimum resources required for teaching.

The PAHO Governing Bodies have stressed the need for increasing the collaboration with the countries in the matter of training auxiliary personnel, since the shortage of such personnel is becoming increasingly acute as the countries of the Hemisphere expand the coverage of their health services. It was recommended that a study be made of the factors bearing on the training of auxiliary personnel to serve as a basis for convening a meeting of experts to examine the problem and suggest appropriate solutions. A consultant therefore visited Brazil, El Salvador, México, Perú, and Venezuela to collect data for the study; the report contained general and specific data on the countries visited and recommendations on a policy for personnel training and utilization. When that stage was completed, preparations were begun for convening the meeting of experts.

New books continued to be periodically distributed to the libraries of public health schools in Latin America.

Medical Education

Medical schools in Latin America continued to improve and develop their education and training pro-

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grams at all levels. Assisting in this development, the Organization awarded 103 fellowships to faculty members of 43 medical schools to receive advanced preparation in teaching, and 25 consultants and 2 staff members of the Bureau visited 28 medical schools and 6 national associations of medical schools in 18 countries to provide advisory and consultation services. Assistance provided by the Organization included: improvement of the teaching program in a specific branch of the medical sciences, incorporation of a new subject into the curriculum or modernization of the whole curriculum, integration of the teaching of preventive and social medicine, development of laboratory and library services, development of research activities, establishment of training programs for both medical faculty and health personnel, correlation of related academic and field activities, and introduction of pedagogical approaches to medical teaching.

The School of Medicine of the Salvador University and the Medical Education and Clinical Research Center in Buenos Aires, Argentina, developed a closer relationship for the implementation of their teaching and research in order to attain their objectives. Four consultants of the Organization who visited the Medical School on 5 separate occasions during a 2-year period made recommendations to strengthen its teaching programs in basic sciences and preventive and social medicine.

A PAHO training center for teachers and research workers in microbiology was established at the Institute of Microbiology, University of Brazil, in Rio de Janeiro. The first fellow under the program was a research worker from Uruguay.

Important advances were made in the development of national and international associations of medical schools. The Pan American Federation of Associations of Medical Schools (founded in 1963) and the Organization established directives for joint planning and execution of medical projects. The Organization offered physical facilities to the Federation, and the latter installed its headquarters at the PAHO Zone V Office, in Rio de Janeiro, Brazil. With the Organization's assistance, the Brazilian Association of Medical Schools held a seminar on the teaching of nutrition in conjunction with its third annual meeting, from 24 to 30 October, and the Peruvian Association of Medical Schools held its second annual conference on medical education from 1 to 6 November.

A program for the training of medical demographers was underway in São Paulo, Brazil, and Santiago, Chile, and a similar program for the training of pathologists was in the planning stage.

A national health survey was launched by the Ministry

of Public Health of Colombia as the first phase of a 2-year study of health manpower and medical education in the country, a joint undertaking of the Government and the Colombian Association of Medical Schools in collaboration with the Organization and the Milbank Memorial Fund. Valuable data have been collected on the health needs of the country, its demands and availability of health services, and the supply, responsibilities and activities of health workers.

A program of continuing education for medical professionals in rural areas was organized, with the collaboration of the Organization, by the Association of Colombian Medical Schools. Series of short courses on the latest practical medical advances are taught by faculty of the medical schools and pertinent information is distributed. The program was inaugurated in April and about 30 courses had been conducted by the end of 1965.

The Organization assisted in organizing 2 international centers for medical faculty training—in Medellín, Colombia, and in Monterrey, México. The Center in Medellín was planned to train 50 faculty members during a 5-year period.

The First Seminar on the Teaching of Anatomy in Central America was held in San Salvador, El Salvador, from 10 to 13 October. The seminar was organized by the Department of Anatomy of the School of Medicine of the University of El Salvador and the Central American Anatomical Association. As part of the preliminary preparations for the seminar a PAHO consultant visited all medical schools in the Isthmus, examined and discussed with the respective faculties their teaching programs in anatomy, and formulated recommendations for the improvement of the teaching of this subject.

A 2-week course in medical pedagogy was conducted at the University of El Salvador. This was the first of a series of courses designed for improving the pedagogical work of faculties in medical schools in Central America and Panamá.

The University of Venezuela conducted a national course in medical pedagogy for 26 professors and instructors of medical schools.

With the assistance of 2 short-term consultants a study was conducted to examine the needs and potentialities for the development of a Regional project to provide textbooks to medical students in Latin America, at reasonable cost, by means of a revolving fund. The idea was enthusiastically received by the faculty members and university authorities that the consultants interviewed in 32 medical schools of 11 countries. The Organiza-

tion initiated measures to finance and implement the project.

The Medical Education Information Center held its annual meeting at the National Institutes of Health of the U.S. Public Health Service on 7 May, and the Bureau continued providing secretariat services. Supported by 16 private and public agencies active in the promotion of international cooperation in medical education, MEIC provides a continuous forum for an exchange of ideas and experience, and for voluntary coordination of program development, policies, and planning.

An updated issue of the Directory of Schools of Medicine in Latin America was prepared during 1965.

Nursing

The Organization collaborated in 25 nursing education projects and 11 of them included two or more levels of training. There were 15 projects at basic-nursing level, 11 at advanced level, and 8 for the training of auxiliaries. The following countries and territories had specific projects: Argentina, Barbados, Brazil, British Honduras, Chile, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Jamaica, México, Paraguay, Perú, Uruguay, and Venezuela.

Collaboration in nursing education with other countries of Latin America was provided by means of advisory services by the Zone nurses, the awarding of fellowships, the remittance of nursing literature in Spanish, and participation at seminars. In addition to the services of 15 nursing educators and of 6 short-term consultants, the assistance to 5 projects included a small amount of supplies and equipment.

The number of schools included in the year's Directory of Schools of Nursing was reduced from 109 in 1964 to 103 in 1965, because a few of the schools had been closed, and schools which had not graduated their first group were not included. However, the number of students entering the first year class in these nursing schools increased from 3,180 in 1964 to 3,672 in 1965.

In the Caribbean Area, 23 schools of nursing were included in a survey, begun in August 1964 and completed in June 1965. Data concerning each school were collected through several questionnaires, documents supplied by the school, and survey visits. These 1-week visits were made by the project nursing adviser and a regional visitor—usually an instructor in a school of nursing from a neighboring country or territory—and allowed time for study of all documents and for interviews with faculty, students, and administrative personnel of school

and clinical facilities. A report was written on each school using a standard guide in order to ensure comparable data. The survey reports were sent to the 7 members of a Board of Review that evaluated each school on the basis of criteria established by the Board in 1964. At a meeting in August the Board of Review assessed the suitability of each school and recommended general future goals.

After the meeting, the Board of Review held a seminar with 7 senior nursing members from territories not represented on the Board and with Government representatives from other professions including finance, planning, administration, and education. The objectives of the seminar were to study the Board's evaluation, so as to seek improvement of nursing services through better nursing education, and to plan for the future development of nursing education keeping in mind the needs of the area, the aims sought, and the fact that the phasing of any change in the programs would need to be spread over a period of time. The seminar reached the conclusion that in order to meet the nursing service needs of the area two categories of nurses are necessary; and it recommended that the basic nursing education programs be improved, orienting them towards the characteristics of a good school of nursing as defined in the criteria adopted by the Board of Review in evaluating the schools of the area, and that steps be taken to set up a regional nursing organization to provide advice and assistance in the improvement of nursing education, carry out periodic evaluation of nursing education programs in order to maintain the desired standards, and accredit the nursing schools that meet the standards.

In Mendoza, Argentina, a short intensive course in public health was given for 30 midwives. With regard to lay midwives, 33 were trained in the Mato Grosso area of Brazil, 28 in Bolivia, and 65 in the Dominican Republic. In Brazil a seminar with 25 participants—nurses, nurse-midwives, and midwives—was held to discuss the role of each group in the maternal care program of the country. In Paraguay, 10 nurses were graduated from the midwifery course, and an intensive inservice education program was organized for 20 midwives, to better prepare them for their functions.

Interchange of faculty members. In the field of basic nursing education the Organization collaborated with a number of schools that no longer needed full-time consultation from international advisers. To fill their more limited needs, a change in direction of collaboration was worked out and plans for the first pilot project—which will be tried out in Costa Rica—were drawn up. This is essentially a plan for the exchange of faculty

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members between university schools of nursing in the United States of America and Latin America. It will be carried out during the summer months in the United States which coincide with active schools months in many Latin American countries. In accordance with the plan, one or two members of a faculty of nursing in the United States will be employed as short-term consultants to one university school of nursing in a Latin American country. There they will work with their counterpart instructors and participate in faculty meetings, as well as assist in clinical instruction and possibly in improving the service areas where the students work.

At the end of the summer the national counterpart instructors will be given 1-year fellowships at the university from which the American nurses had come for each to take a few courses as appropriate but mainly to gain experience in her specialty, as assistant to the professor. The latter, after having been in Latin America, will understand better the needs of the national nurses and will tailor a program especially for them. The degrees required to teach in the Latin American universities will be obtained by the nationals in their own country and not through this experience abroad.

In the case of the pilot project mentioned above, the dean of the School of Nursing of the Medical Center of the University of Kansas will go to Costa Rica in September-October 1966 to draw up, jointly with the faculty of the National School of Nursing, a 5-year plan of operations which will stipulate the areas of nursing from which instructors to participate in the project will be drawn and the order of priority. Several of the members of the U.S. university faculty were studying Spanish to participate in the project.

Since several university schools of nursing in the United States are interested in this exchange program, it can be extended to other countries. Furthermore, planned use of short-term consultants and fellowship funds will benefit the countries concerned.

Programed instruction. Although the training of nursing auxiliaries was continued in 1965, the shortage of this type of personnel was still keenly felt in the Latin American countries. The greatest problem in the preparation of large numbers of nursing personnel at both the auxiliary and professional levels is the shortage of instructors, and the services cannot be improved until a greater number of supervisors and administrators are prepared. The main reasons for the shortage are (a) the deficiencies in the educational background of nurses in Latin America, (b) the scarcity of courses in advanced education for nurses—only 5 countries have set up permanent centers for supplementary or advanced nurs-

ing education and at most 40 to 50 nurses can be prepared yearly in each, and (c) the insufficient number of nurses trained at a higher level to teach advanced courses.

This situation is gradually improving because the Governments are becoming aware of the problem and are requesting the collaboration of the Organization in providing more opportunities for advanced studies. In addition, in many countries nurses have recognized this lack and at great personal sacrifice have attended university courses in fields related to nursing in order to qualify for teaching positions. In 1965 the Organization collaborated with 9 countries in planning and/or carrying out advanced courses of 3 to 9 months to give additional preparation to nurses holding teaching, supervisory, and administrative positions.

Another form of assistance from the Organization was that it continued to provide the countries with new teaching materials and to prepare graduate nurses in programed instruction and the use of programed-teaching units. Large numbers of a Spanish-language pamphlet explaining the principles of programed instruction were distributed. In the next 2 years, when programed instruction materials are introduced in the training of auxiliary nursing personnel, the pamphlets will be useful to faculties in schools of nursing, nursing students of principles of teaching, graduate nurses in the health services, and health authorities.

A workshop on programed instruction was held in Teachers College, Columbia University, New York, from 6 July to 13 August. Five PAHO/WHO nursing education advisers and 10 nurse educators from Argentina, Brazil, Chile, Colombia, Guatemala, México, Nicaragua, and Panamá participated. As a practical exercise in programing, the group prepared a unit on immunization. The draft was in English at the level of basic nursing education but was to be adapted to the level of auxiliaries with 6 years of general education and will be translated into Spanish by the participant Spanish-speaking nurses. A field trial of the unit will be carried out in Mexico in June 1966.

A nurse consultant was appointed to the project on programed instruction in July and was stationed in Santiago, Chile. Beginning in March 1966 she will be stationed in Lima, Perú.

In a few years, the programed instruction project will supplement the efforts of instructors in the training of auxiliary nursing personnel, by providing materials for self-instruction at the level of primary school education, and thereby enable the few instructors available to deal with many more students.

Environmental Sanitation

The increasing awareness of the relationship of man's physical environment and the state of his health is creating growing appreciation of the needs in engineering services essential to an effective public health program. Accelerated urbanization and the consequent pressure for rapid improvement of the environment raises many problems that can only be solved by developing new techniques fitted to new problems and conditions. A particular need is that of providing training that will emphasize the value of seeking new and imaginative solutions to technical and managerial problems.

To carry out or expand programs requires large numbers of trained personnel; this in turn demands expansion of the educational, training, and research opportunities. Sanitary engineers formally trained in graduate courses are needed for consultation and specialized guidance of programs. A great number of civil engineers with basic training in sanitary engineering is also needed for design, construction, operation, maintenance, and administration of water and sewage works. Besides expansion of undergraduate and graduate education, there is an urgent need of providing the engineering staffs with opportunities for keeping up with recent technological advances and for personal improvement.

In order to attend to these needs the Organization's assistance in 1965 was focussed on engineering schools in the Hemisphere. Agreements were signed which provided for consultants for reviewing or initiating programs; advisory services for improving physical facilities and for preparation of requests to financing agencies; fellowships for the teaching staffs; promotion of continuing education through short courses; and promotion of research activities. The 18 Agreements signed raised the total of projects in operation during the year to 25, distributed as follows: Argentina, Bolivia, Brazil (8), Colombia (2), Costa Rica, Chile, Ecuador, El Salvador, Honduras, México (2), Nicaragua, Panamá, Perú, Trinidad and Tobago, Uruguay, and Venezuela.

With the cooperation of universities in the countries the Organization intensified and expanded its program of short courses (started in 1963) in an organized effort to integrate the training programs into the regular activities of the universities. The responsibility for organizing the courses was assumed by the cooperating engineering school, with the Organization providing technical and financial assistance. The grants provided were to help defray local costs, but emphasis was placed on the need for a significant local contribution toward the activity. This same principle was strengthened re-

garding lecturers. International consultants assisted in the organization of the courses and delivered some lectures, but the local professors were in charge of 80% or more of the course programs.

A total of 40 short, intensive, and specialized courses were conducted in 16 countries, as follows: 11 in Brazil, 5 in México, 4 each in Argentina and Colombia, 2 each in Chile, Panamá, Perú, and Trinidad and Tobago, and 1 each in Bolivia, Costa Rica, Ecuador, El Salvador, Honduras, Nicaragua, Uruguay, and Venezuela (Table 27).

The courses were directed mostly to engineers but some were attended by other professionals and by auxiliary personnel. About 1,000 persons attended.

The subjects of the courses were selected by the schools in consultation with governmental agencies and other interested institutions. In most cases these agencies also contributed toward the organization and financing of the courses. Some aspect of water supplies was dealt with in 31 of the courses, such as water quality control and treatment, administration, operation and maintenance, design and planning, economics, ground water development, water resources, pollution control and sewage disposal. The rest were on sanitary aspects of housing, solid waste disposal, industrial hygiene, swimming pool operation, food control, use of digital computers (2), maintenance of hospital equipment, and training of auxiliary personnel.

The manuals produced in relation to each course were a significant contribution to the technical literature of the Americas and included the texts of 2,675 conference hours that were the work of 417 lecturers. The distribution of these manuals established an active exchange and communication among the cooperating universities and governmental agencies working in the sanitary engineering field.

The education program made extensive use of short-term consultants, 35 of whom provided assistance in 55 different activities, as follows: Bolivia (2), Brazil (11), Chile (3), Colombia (2), Costa Rica (5), Ecuador (2), El Salvador (6), Honduras (5), México (3), Nicaragua (5), Panamá (5), Perú (2), Trinidad and Tobago (1), Uruguay (1), and Venezuela (2).

Worth mentioning also is the increasing exchange of personnel among Member Countries. The 35 short-term consultants came from 11 countries. By country of origin, the missions they accomplished were as follows: Argentina (1), Brazil (3), Chile (1), Colombia (15), Costa Rica (1), Guatemala (5), Panamá (4), Perú (7), Uruguay (1), Venezuela (2), and the United States of America (15). PASB personnel also traveled outside their normal

TABLE 27. SHORT COURSES AND SEMINARS ON SANITARY ENGINEERING HELD OR CONDUCTED IN COOPERATION WITH UNIVERSITIES, 1965

Place of training	Dates	Subject	Duration (hours)	Instructors		Trainees	
				National	International	National	International
ARGENTINA:							
University of Buenos Aires	11-22 Oct.	Ground water.....	70	7	2	24	2
	25 Oct.-20 Nov.	National plan for rural water supplies.....	254	16	5	31	1
	22 Nov.-4 Dec.	Operation of water treatment plants.....	60	7	1	24	2
	1-10 Dec.	Industrial hygiene, part 1.....	56	10	2	22	—
BOLIVIA:							
University of San Andrés, La Paz	19-28 April	Water utilities administration.....	52	13	3	20	—
BRAZIL:							
Institute of Sanitary Engineering (SURSAN) Rio de Janeiro	8-10 Nov.	Biological aspects of sea water pollution in the neighborhood of Rio de Janeiro.....	20	1	2	15	—
	1-15 Dec.	Operation of swimming pools.....	50	2	1	15	—
	6-9 Dec.	Chemical parameters for water quality.....	25	1	2	15	—
	27-29 Dec.	Biological aspects of water pollution control.....	20	1	2	15	—
University of Bahia, Salvador	11-22 Oct.	Operation and maintenance of water treatment plants.....	64	5	1	20	—
University of Paraíba, Campina Grande	1-13 Nov.	Water meters and house connections.....	66	3	2	20	—
University of Recife	18 Jan.-12 Feb.	Design of water supplies for small communities.....	123	11	3	30	1
	25 Oct.-5 Nov.	Water utilities administration.....	60	6	2	19	—
University of Rio Grande do Sul, Pôrto Alegre	20 Sept.-2 Oct.	Operation and maintenance of water treatment plants.....	68	9	2	22	—
University of São Paulo	18-22 Oct.	Urban solid wastes.....	31	10	2	90	—
	29 Nov.-11 Dec.	Operation and maintenance of water treatment plants.....	60	13	1	27	—
COLOMBIA:							
School of Engineering, University of the Andes, Bogotá	6-17 Dec.	Use of digital computers in sanitary engineering.....	70	4	1	14	2
	9-20 Aug.	Criteria for designing water treatment.....	70	15	3	25	—
National University of Colombia, Bogotá	25 Oct.-12 Nov.	Mechanization in water treatment plants.....	70	15	3	15	—
	15-26 Nov.	Hydrology fundamentals.....	70	10	2	15	—
COSTA RICA:							
University of Costa Rica, San José	27 Sept.-9 Oct.	Economic principles in water supply planning.....	63	9	8	19	1
CHILE:							
University of Chile, Santiago	1-11 Sept.	Water quality control.....	30	5	3	36	—
	11-20 Nov.	Stabilization ponds.....	37	6	2	24	1
ECUADOR:							
Central University of Ecuador, Quito	18 Oct.-17 Dec.	Water supply and sewerage design	191	16	5	34	—

TABLE 27. SHORT COURSES AND SEMINARS ON SANITARY ENGINEERING HELD OR CONDUCTED IN COOPERATION WITH UNIVERSITIES, 1965—Continued

Place of training	Dates	Subject	Duration (hours)	Instructors		Trainees	
				National	Inter-national	National	Inter-national
EL SALVADOR: Autonomous University of El Salvador, San Salvador	5-19 Oct.	Economic principles in water supply planning.....	54	7	5	25	—
HONDURAS: National Autonomous University of Honduras, Tegucigalpa	1-16 Oct.	Economic principles in water supply planning.....	60	7	5	25	—
MÉXICO: National Autonomous University of México, México, D. F.	16-28 Aug.	Use of digital computers in sanitary engineering.....	70	3	1	13	—
	20 Sept.-9 Oct.	Ground water.....	116	6	3	44	—
	18-30 Oct.	Water supply design for small communities.....	45	7	4	30	—
	8-20 Nov.	Administration and financing of water supplies.....	70	8	5	30	—
Nuevo León University, Monterrey	15-27 Nov.	Water supply and distribution....	70	12	1	28	1
NICARAGUA: National University of Nicaragua, Managua	29 Sept.-13 Oct.	Economic principles in water supply planning.....	36	9	5	37	—
PANAMÁ: University of Panamá	22 Sept.-5 Oct.	Economic principles in water supply planning.....	64	10	6	13	—
	15-27 Nov.	Food control.....	58	13	2	26	—
PERÚ: National University of Engineering, Lima	13 Sept.-23 Oct.	Equipment maintenance and basic sanitation of hospitals.....	129	6	3	20	5
	8-20 Nov.	Organization, administration, and operation of water supplies....	62	17	1	16	1
TRINIDAD AND TOBAGO: University of the West Indies (Faculty of Engineering at Port-of-Spain)	29 Nov.-4 Dec.	Training needs of water supply personnel in the Eastern Caribbean.....	30	1	1	5	9
	5-10 Dec.	Technical and administrative water supply problems in the Eastern Caribbean.....	30	1	1	5	9
URUGUAY: University of the Oriental Republic of Uruguay, Montevideo	14-23 Oct.	Operation and maintenance of water supplies.....	56	5	1	17	2
VENEZUELA: University of Zulia, Maracaibo	22-26 Nov.	Seminar on environmental sanitation in slum areas.....	45	3	3	35	2
Total.....			2,675	310	107	960	39

— None.

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duty station to provide advisory services to the co-operating universities.

To further implement its educational activities the Organization intensified its cooperation with other international agencies, particularly with the U.S. Agency for International Development, in Colombia, Guatemala, and Perú. In Colombia also, assistance was provided to the United Nations Special Fund project which, with UNESCO as the executing agency, is being carried out to expand the School of Engineering of the National University in Bogotá. Exploratory contacts were established with the Inter-American Development Bank and the W. K. Kellogg Foundation to conduct joint programs of short courses, to be held through the network of co-operating universities already developed by the Organization.

Preliminary studies on the possibility of establishing sanitary engineering institutes that would provide Governments with research and technical services were undertaken in Argentina, México, and Trinidad and Tobago.

With the Organization acting as its executing agency, the United Nations Special Fund is financing projects in Brazil and Venezuela.

In Brazil the UNSF cooperated with the Superintendency of Urbanization and Sanitation (SURSAN), an authority of the State of Guanabara, and the State University in the development of the Institute of Sanitary Engineering of SURSAN. The Special Fund allocation for this 4-year program is \$467,700, and the Government's contribution is \$1,247,870. The function of the Institute is to provide a center for research and technical services which include consultation, preparation of standards, training, and the development of an information center. The Institute will be responsible for providing technical advice to SURSAN and other governmental agencies, entering into agreements or contracts in the country or abroad, and developing at the University of Guanabara graduate and undergraduate programs. A chief technical adviser was appointed full time to the project, which officially started operations on 13 July. Five fellowship applications were processed and 3 were approved. Purchasing orders for equipment and library needs were prepared and partial delivery was received.

Seven consultants reviewed and evaluated programs in industrial waste control, training, marine biology, air pollution, sanitary chemistry, fresh water biology, and sanitary bacteriology. Their recommendations were implemented and several of them induced new legislation in the State. As part of their assignments, 3 consultants gave a series of lectures in their specialties and, though

intended primarily for orientation of the personnel of the Institute of Sanitary Engineering of SURSAN, staff members of other agencies also attended. Institute staff conducted 2 short courses, and 1 basic course in sanitary engineering was provided at the State University.

The plan of operations of the project in Venezuela specifies that the Special Fund will contribute \$736,400 and the Government \$936,275 throughout the 4-year program. A national coordinator and a consultant were appointed by the Government, the Organization appointed a chief technical adviser full time, and operations started officially on 8 January. The teaching institutions involved in the project are the Central University of Venezuela and the Andrés Bello Catholic University, both in Caracas, Zulia University, in Maracaibo, and the Andes University, in Mérida.

A consultant assisted the 4 universities in laying out their laboratories and preparing lists of equipment. Fellowship awards for specialization abroad in sanitary science laboratory practices and sanitary biology were given to 4 nationals. One consultant assisted in the establishment of a graduate course in sanitary engineering and advised in the research program to be developed at the Central University. Recruitment of the permanent personnel was initiated. Purchasing orders for books, audiovisual materials, and laboratory equipment were prepared and some of these were delivered during the year.

Veterinary Medicine

The need to increase veterinary medicine training in Latin America, both in quality and quantity, becomes obvious when it is realized that, according to estimates, only 8,675 veterinarians are at present available for an animal population of over 467 million, or a ratio of 1 veterinarian for every 58,000 animals, whereas in the United States, there are 22,000 veterinarians for an animal population of 212 million, or 1 veterinarian for every 9,600 animals.

In an effort to correct the above-stated situation, and in conformity with the recommendation of the Standing Committee for the Teaching of Preventive Medicine and Public Health at Schools of Veterinary Medicine in the Americas, the Organization expanded its compiling of information on curricula and other matters related to schools of veterinary medicine in Latin America and made it available to the countries as a guide to the professional training given in the various countries. On the basis of the information collected, the Organization also pre-

pared a document on clinical education at schools of veterinary medicine in Latin America and presented it at the Symposium on Clinical, Professional, Postgraduate, and Continuing Education in Veterinary Medicine, held under the auspices of the American Association of Veterinary Medicine and the Rockefeller Foundation, in Athens, Georgia, from 25 to 27 June.

Latin America has 41 schools of veterinary medicine, of which 9 are in Middle America and 32 in South America; 13 of these schools were established after 1955 (8 in the past 2 years) (Table 28). The Organization assisted in the planning of some of the schools and is actively cooperating in their development.

The Organization's projects in this field of activity are aimed at strengthening professional training in veterinary medicine. Special attention is given to the teaching of public health and preventive medicine because both subjects are of vital importance to veterinarians in the developing countries. In view of the fact that such preventable diseases as foot-and-mouth disease, brucellosis, animal tuberculosis, and paralytic rabies cause livestock losses in Latin America exceeding \$500 million a year, it is not difficult to envisage their impact on the economy of the countries and the importance of the concept of preventive medicine at all levels in the teaching of veterinary medicine.

In 1965, by means of 5 short-term consultants, the Organization assisted in the reorganization of the curricula of the departments of public health and preventive medicine and in a revision of general study plans and research activities in the schools of veterinary medicine of Buenos Aires and La Plata, Argentina; São Paulo,

Belo Horizonte, Pôrto Alegre, and Rio de Janeiro, Brazil; Medellín, Colombia; Santiago, Chile; Quito, Ecuador; Guatemala City; México City, Villa Hermosa, Veracruz, Guadalajara, and Tamaulipas, México; Lima, Perú; Montevideo, Uruguay; and Maracay, Venezuela. Advisers in veterinary public health also cooperated in teaching activities and extension programs at schools of veterinary medicine in Guatemala, México, and Perú.

In collaboration with the Pan American Foot-and-Mouth Disease Center and the Pan American Zoonoses Center, the schools of veterinary medicine in Brazil, Chile, Colombia, Ecuador, Guatemala, and Perú were provided with reagents, biological products, and technical publications relating to zoonoses and to food hygiene. Technical publications and audiovisual material for medical teaching was also provided to other schools.

Dental Health

The Organization collaborated with the Government of Argentina in a reorganization of the curriculum of the course for dental hygienists offered by the Health Services of the Army.

Advice was continued to the University of São Paulo, Brazil, in connection with the organization and establishment of an International Center for Training in Dental Epidemiology and Research. This project is being developed with the cooperation of the United States Public Health Service and the W. K. Kellogg Foundation. The Center began to function at mid-year. Advice was also

TABLE 28. VETERINARY SCHOOLS IN MIDDLE, SOUTH, AND NORTH AMERICA, 1965^a

Regions and countries	Founded			Teaching staff		Total enrollment	Annual admissions	Graduates
	Number of schools	Before 1957	After 1957	Full time	Part time			
Middle America: Central American Republics, México, Panamá, and Caribbean islands.....	10	5	5	131	142	1,921	806	201
South America: South American countries and the Guianas.....	33	21	12	568	1,002	4,715	1,642	463
North America: Canada and United States of America.....	21	19	2	1,401 ^b	316	4,280	1,238	908

^a World Directory of Veterinary Schools, FAO/WHO Geneva, 1963; Special Report: Project AMRO-6500, Veterinary Education, PAHO/WHO, Washington D. C., 1964 and 1965.

^b Members of the veterinary faculties and other regular staff of the 21 colleges and schools.

provided in the organization of the First International Course on Dental Epidemiology and Research, to be held in March 1967. The training of personnel in charge of this Center was also continued, and 2 of the instructors received specialized training in the United States to conduct the above-mentioned international course.

Assistance was continued concerning the organization of a course of advanced training for professors of oral microbiology of the various schools of dentistry in Brazil, which will be held in July 1966.

The Organization accepted the invitation of the Government of Brazil to hold in Petropolis the Third Latin American Seminar on the Teaching of Dentistry, from 28 November to 2 December 1966. This seminar is being cosponsored by the Kellogg Foundation and is intended for the schools of dentistry of Argentina, Brazil, Paraguay, and Uruguay.

Advisory services to the Pilot Department of Preventive and Social Dentistry for Latin America, in the University of Antioquia, Colombia, were continued in connection with the establishment of a new curriculum, aimed at reducing the traditional 5-year course of the School of Dentistry to 4 years, as well as establishing regular courses for dental hygienists and assistants, scheduled to begin in 1966. Two professors of the Pilot Department received 3-month training, each, in the United States.

Advisory services were provided to the National University of Colombia in the matter of establishing a joint department of preventive and social medicine and dentistry for the purpose of pooling the resources of its schools of dentistry and medicine to teach the preventive and social aspects to students of both schools. The University established the joint Department and, under it, created a Section of Preventive and Social Dentistry. Concepción University in Chile was also encouraged to introduce this innovation in the teaching of dentistry in Latin America.

A round-table discussion was held in Costa Rica, in November, on the teaching of dentistry and aspects of dental health, especially fluoridation.

An agreement in the draft stage will provide a base for collaborating during 5 years with the Department of Preventive and Social Dentistry of the Autonomous University of El Salvador, in San Salvador. The Department, which has been receiving assistance in connection with its reorganization, will be used as a demonstration area for other Central American countries. In 1965 the training of teaching personnel for this project was begun.

The Organization continued cooperating in the reorganization of the recently created School of Dentistry at the University of Ica, Perú. The dean of the School was

awarded a fellowship to enable him to make observation visits to other Latin American schools.

The School of Dentistry of the University of Puerto Rico held a Conference on Aspects of Dental Health in the Hemisphere, at which the Organization delivered a paper on "Fluoridation of Public Water Supplies in Latin America through the Coordinated Action of Engineers and Dentists."

In Venezuela, where the Central University is revising the curriculum of the School of Dentistry, the Organization awarded 1 fellowship for one of the professors to study planning and assisted in the preparation of teaching programs and in the planning and reorganization of the Department of Social and Preventive Dentistry, as well as in the planning and carrying out of a national seminar on the teaching of dentistry in which professors from the 3 schools of dentistry of the country participated. The Organization assisted the National Council of Universities in planning and carrying out a meeting on the teaching of dentistry.

The principal papers presented during the Second Latin American Seminar on the Teaching of Dentistry (México, D.F.; 1964) were compiled and some 2,500 copies of the publication were distributed.

Health Statistics

The need for large numbers of adequately trained personnel for improving statistical systems has become increasingly important, and therefore training activities were carried on throughout the Americas at professional, intermediate, and auxiliary levels.

Professional level education for health statisticians is provided mainly in courses in the United States of America and in the graduate level course offered biennially at the School of Public Health in Chile.

Courses to meet specific statistical and research needs of professional personnel were offered in Brazil, Jamaica, and Uruguay. In Brazil a course on nonparametric statistics in the health field was given in the Department of Statistics at the School of Medicine of Ribeirão Preto, State of São Paulo, by a short-term consultant who also visited other medical teaching centers in the country to advise on the teaching of statistics in medical schools. The Faculty of Medicine of the University of the West Indies, at Kingston, Jamaica, added biostatistics instruction to the curriculum for preclinical studies. Two 1-month courses on statistical analysis and design of experiments were conducted for professors and graduate

students of the School of Medicine of the University of Montevideo, in Uruguay.

Intermediate-level courses were given in schools of public health in Argentina, Colombia, Cuba, México, and Perú; similar courses were also initiated in Jamaica and Paraguay. These courses were designed to emphasize the statistical programs in the health departments of the countries and combined the teaching of basic statistical methodology with practical experience in collecting, recording, and tabulating health data on notifiable diseases, mortality, and hospital statistics and medical records. A total of 150 students were trained in intermediate-level courses (Table 29).

The first continuing training course in statistics in the Caribbean Area was conducted under the auspices of the University of the West Indies, from July to November. The course was designed to stimulate improvement in the reporting and recording of data; 25 of the 28 students who attended received UNICEF fellowships.

The 7 statistical auxiliaries who had already completed courses at the auxiliary level in the Carlos J. Finlay School of Public Health in Havana, Cuba, received intermediate-level training.

In Paraguay a 6-month course began on 15 October—6 students were registered from the Social Security Institute, the Armed Forces, the Barrio Obrero Hospital and the Department of Biostatistics of the National Health Service, and UNICEF furnished fellowships for 10 students from health centers in the interior of the country.

In Chile a 2-week course on medical records was conducted for 11 supervisory statisticians from district health services who would each be responsible for training groups of auxiliary statistical personnel for hospitals throughout the country.

In Venezuela the Ministry of Health and Social Welfare and the Organization prepared a 3-week advanced course on teaching methods for 9 instructors who were responsible for teaching courses on medical records and

TABLE 29. STATISTICIANS TRAINED AT INTERMEDIATE LEVEL IN THE AMERICAS, 1965

Place of origin	Country of study							Total
	Argentina <i>9 months</i>	Colombia <i>6 months</i>	Cuba ...	Jamaica <i>4 months</i>	México <i>10 months</i>	Paraguay <i>6 months</i>	Perú <i>6 months</i>	
Argentina.....	32	--	--	--	--	--	--	32
Colombia.....	--	21	--	--	--	--	--	21
Costa Rica.....	--	1	--	--	--	--	--	1
Cuba.....	--	--	7	--	--	--	--	7
Ecuador.....	--	2	--	--	--	--	--	2
El Salvador.....	--	--	--	--	1	--	--	1
Honduras.....	--	--	--	--	1	--	--	1
Jamaica.....	--	--	--	13	--	--	--	13
México.....	--	--	--	--	19	--	--	19
Paraguay.....	1	--	--	--	--	16	--	17
Perú.....	--	--	--	--	--	--	19	19
Trinidad and Tobago.....	--	--	--	3	--	--	--	3
Uruguay.....	2	--	--	--	--	--	--	2
Antigua.....	--	--	--	1	--	--	--	1
Barbados.....	--	--	--	2	--	--	--	2
British Guiana.....	--	--	--	1	--	--	--	1
Dominica.....	--	--	--	1	--	--	--	1
Grenada.....	--	--	--	1	--	--	--	1
Montserrat.....	--	--	--	1	--	--	--	1
St. Kitts, Nevis, Anguilla.....	--	--	--	1	--	--	--	1
St. Lucia.....	--	--	--	2	--	--	--	2
St. Vincent.....	--	--	--	1	--	--	--	1
Surinam.....	--	--	--	1	--	--	--	1
Total.....	35	24	7	28	21	16	19	150

-- None.

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hospital statistics being given in the schools of public health in Latin America. In addition, the 11-month basic course for medical records librarians offered annually by the Ministry enrolled 20 students, including 3 from other countries on fellowships given by the Organization.

It has become increasingly apparent that improvement in the quality and quantity of statistical data, so necessary for planning, administering, and evaluating health services, depends on training of auxiliary personnel who record, tabulate, and report these data. Thus in 1965 special emphasis was focussed on the training of auxiliary personnel.

There were 19 short courses for auxiliaries in 11 countries (Table 30). The average duration of the courses was 4 weeks.

The Organization collaborated in the development of methodology for training courses of auxiliary personnel and took an active part in the planning of several pilot projects and in some of them assisted in the teaching. Some courses were experimental in the sense of designing teaching materials and training techniques and in determining the maximum and most useful training which can be given in a short period of time to groups with limited and varied educational backgrounds. For this

TABLE 30. AUXILIARY STATISTICAL PERSONNEL TRAINED IN THE AMERICAS, 1965

Place	Duration of course weeks	Training for:	Number trained
Argentina:			
Buenos Aires	2	Hospitals	22
La Plata .....	...	Ditto	30
Tucumán	2 ^a	Ditto	40
Brazil:			
Fortaleza	4	Health centers	30
Recife	4	Ditto	25
Chile:			
Santiago	2	Health centers and hospitals	11 ^b
Many areas	2	Ditto	120
Colombia:			
Cali	10	Health centers .....	...
Fusagasugá	3	Hospitals .....	...
Fusagasugá	3	Health centers .....	...
Costa Rica	2	Health centers and hospitals	34
Cuba:			
Havana .....	...	...	...
Pinar del Río .....	...	...	...
Camagüey .....	...	...	...
Guatemala	4	Health centers and hospitals	43
Honduras	4	Ditto	47
Paraguay	2	Ditto .....	...
Perú:			
Arequipa	6	Health centers	27
Venezuela			
.....	3 months	Hospitals	30
.....	3 months	Ditto	40

... Data not available.

^a Two courses of 2 weeks each.

^b Trained to teach 120 auxiliaries a year.

reason, the content and methods used in the courses varied, depending to some extent upon the functions of the auxiliaries being trained but also related to techniques which were being tried. The courses were generally designed to give maximum emphasis to practical experience and field work, stressing the development and use of teaching aids including manuals, diagrams, and illustrative materials. Moreover, the content of each course was

based on practices in use in the given country, using as illustrative material the current forms and guidelines.

The Latin American Center for the Classification of Diseases continued providing instruction and teaching materials on the Classification and its use. A total of 171 students were trained in courses held in Argentina, Brazil, Ecuador, and Jamaica (Table 31). One student from Paraguay and 2 from Uruguay attended the course in Argentina; and 3 students from Trinidad and Tobago and 12 from various islands in the Caribbean attended the course in Jamaica. In addition, teaching materials were also provided for the intermediate-level course on statistics at the School of Public Health in Medellín, Colombia.

TABLE 31. COUNTRY OF ORIGIN AND NUMBER OF STUDENTS TRAINED IN COURSES CONDUCTED BY STAFF MEMBERS OF THE LATIN AMERICAN CENTER FOR THE CLASSIFICATION OF DISEASES, 1955-1965

Place of origin	Number of students	
	1955-1964	1965
Argentina.....	195	44
Bolivia.....	35	—
Brazil.....	66	43 ^a
Chile.....	36	—
Colombia.....	185	—
Costa Rica.....	34	—
Cuba.....	4	—
Dominican Republic.....	16	—
Ecuador.....	5	52
El Salvador.....	22	—
Guatemala.....	10	—
Haiti.....	1	—
Honduras.....	4	—
Jamaica.....	5	14
México.....	10	—
Nicaragua.....	6	—
Panamá.....	49	—
Paraguay.....	28	1
Perú.....	52	—
Trinidad and Tobago.....	2	3
Uruguay.....	—	2
Venezuela.....	9	—
Antigua.....	—	1
Barbados.....	1	2
British Guiana.....	1	1
Dominica.....	—	1
Grenada.....	1	1
Montserrat.....	1	1
Netherlands Antilles.....	2	—
St. Kitts, Nevis, Anguilla.....	1	1
St. Lucia.....	1	2
St. Vincent.....	1	1
Surinam.....	1	1
Total.....	784	171

— None.
^a One 2-week course in São Paulo and one 3-week course in Belo Horizonte, Minas Gerais.

Malaria

The 22nd International Course on Malaria and Environmental Sanitation was given in Maracay, Venezuela. Twenty-five students attended, of which 19 were Venezuelans and 6 were from other countries; 3 of these were PAHO fellows—1 from Paraguay and 2 from Brazil. The Organization sent 2 fellows to the courses at the Department of Parasitology of the Faculty of Public Health and Hygiene, University of São Paulo, Brazil: the fellow from Panamá studied malariology and the one from Perú medical entomology. The Organization also provided seven 1-month travel grants, 1 was for an official of the Mexican program to visit Venezuela and the other 6 were for officials of the Colombian program to visit the Ecuadorean campaign.

An additional vehicle for the diffusion of technical information throughout the program in the Americas con-



Students of the 22nd International Course on Malaria and Environmental Sanitation, conducted in Maracay, Venezuela.

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sisted of an Advanced Course on the Epidemiology of Malaria, held at the School of Malariology in Maracay, under the auspices of the Organization and the Directorate of Malariology and Environmental Sanitation of the Ministry of Health and Social Welfare of Venezuela. The course was attended by 16 international malaria consultants. It included 2 weeks of seminars and laboratory presentations, with lectures on specialized subjects, followed by 2 weeks of field trips within Venezuela and Colombia for the study of various epidemiological problem situations.

A large number of training and retraining courses were conducted within national campaigns in Brazil, Colombia, México, and Central America. There was also, among several countries, interchange of program personnel for comparison of field work.

In Nicaragua the Malaria Eradication Service conducted training courses in malaria parasite diagnosis for microscopists of the National Health Services.

Under the WHO project of Research Training and Exchange of Research Workers a grant was awarded to a staff member of the National Center for Primate Biology, at Davis, California, for study of laboratories and schools of tropical medicine in Europe and Israel.

Leprosy

A course on the prevention of deformities and the physical rehabilitation of leprosy patients, with emphasis on the use of nonsurgical methods, was held in Caracas, Venezuela, from 3 May to 16 July under the auspices of the Government and the Organization, with the cooperation of the American Leprosy Mission, the Department of Physical Medicine of the University of New York, the World Rehabilitation Fund, Inc., and the International Society for the Rehabilitation of the Disabled. The course was attended by 15 physicians: 3 from Argentina, 3 from Colombia, 2 from Ecuador, 1 each from México and Paraguay, and 5 from Venezuela. The teaching was carried out by professional staff members of the Division of Physical Medicine and Rehabilitation of the Ministry of Public Health and Social Welfare of Venezuela and 5 short-term consultants provided by the Organization.

The course dealt with rehabilitation, both in general terms and in regard to leprosy, and included the administration of rehabilitation programs which should be an integral part of leprosy control programs.

Ecuador held its annual meeting of Regional Services which reviewed the data registration systems and the rehabilitation and care of leprosy patients. Personnel

was trained in handling data registration systems. A short course on leprology was given to health inspectors and health educators of the integrated health plan of the province of Manabí. At the Universities of Guayaquil and Quito, classes on leprology were conducted for medical students as a part of the courses in tropical medicine and dermatology.

Venereal Diseases

The Organization collaborated with the Governments of Chile and Nicaragua in the organization of training courses in venereal diseases, providing them, besides advisory services, some teaching equipment and supplies.

Two courses on laboratory techniques for the diagnosis of venereal disease were taught by 2 international experts at the Bacteriological Institute of Chile, in Santiago, during November. Each of these courses was attended by 10 physicians from Chile, and the second course also had 1 from Argentina.

In Nicaragua, 3 short courses on venerology were conducted in the last quarter of the year and were attended by 94 physicians. The courses dealt with the clinical, epidemiological, therapeutic, laboratory, and control aspects of venereal diseases.

Zoonoses

Through the fellowship program of the Organization, veterinarians, microbiologists, and members of other professions were trained in zoonoses control, diagnosis, research, and teaching.

Five officials from Argentina, Bolivia, Brazil, Ecuador, and Paraguay received long-term specialized postgraduate training in the zoonoses at the Pan American Zoonoses Center. Training in laboratory techniques for the diagnosis of brucellosis and rabies was provided to 5 laboratory technicians from Argentina, México, and Paraguay. PAHO consultants assisted in an international training course in laboratory techniques and rabies control, which the Center organized in Buenos Aires, in May, in collaboration with the Carlos G. Malbrán National Institute of Microbiology of Argentina. The course was attended by 22 officials from Argentina, Bolivia, Brazil, Chile, Perú, Uruguay, and Venezuela. A course on fluorescent antibody techniques in rabies diagnosis, organized by the National Institute of Health in cooperation with the Pan American Zoonoses Center, was held at Lima, Perú,

in February; it was attended by 27 Government officials and university faculty members.

The Pan American Foot-and-Mouth Disease Center held 2 training courses: the XX Course was held in June in Maracay, Venezuela, for 9 veterinarians from countries free of foot-and-mouth disease; and the XXI Course was held in September in Rio de Janeiro, Brazil, for 12 veterinarians from South America. The latter course was primarily devoted to principles of evaluation in foot-and-mouth disease campaigns. In addition, 11 fellowships were awarded to officials of the Ministries of Agriculture of Brazil, Colombia, Ecuador, Perú, and Uruguay for specialized studies at the Center and in programs of Argentina, Colombia, Perú, and Venezuela.

General Health Services

The training of the personnel needed for health institutions is an abiding objective of general health-service projects. The type and nature of courses held during 1965 was determined by the needs of each country or area; they included postgraduate training, for professionals, and the training of technical and auxiliary personnel. Courses for professional health workers included the following: 11 courses in public health administration, attended by 148 physicians and nurses; 5 courses on various aspects of water supply administration, attended by 161 engineers or public administration personnel; 2 courses on health planning, attended by 50 officials; 5 courses on nursing administration and supervision, attended by 126 nurses; 2 courses on hospital administration for physicians, attended by 36; 1 course on psychiatric nursing, for 9 professional nurses; 1 course for supervisor-inspectors, attended by 16 students; and 1 postgraduate course on midwifery, attended by 9 professional nurses.

Training courses for technicoauxiliary personnel were as follows: 11 courses that trained 202 health inspectors; 49 courses that trained 1,497 nursing auxiliaries; 7 courses that trained 164 statistical auxiliaries; 6 courses on nutrition that trained 174 assistants; 5 courses for laboratory personnel, attended by 47 persons; 2 courses that trained 104 health auxiliaries; 3 courses that trained 64 visiting nurses; 2 courses on community development, for 54 students; 2 courses on first aid and notions of public health, for 60 students; and 3 courses for 100 lay midwives. Inservice training was given to 319 employees. In addition, other courses were given in the following specific fields: control of venereal disease, tuberculosis, and leprosy (54 students); home economics, (15 students); training was given to 5 health education

auxiliaries; 30 students were trained in classification of diseases; 1 course in economic criteria had 22 participants; 1 course on dental hygiene was attended by 30 students; 1 course on principles of public administration had 25 students; 1 course on sanitation practices had 30 students; and 1 orientation course in public health had 60 participants.

Administrative Methods and Practices

The training of administrative personnel, to meet the increasing needs of the Governments, continued to be one of the main phases of the program of the Organization to improve the organization and administration of the health services of the Hemisphere.

The objectives of this training are: (1) to develop the motivation and to impart sufficient knowledge in the various administrative disciplines basic to understanding public health problems and the basic principles of health administration; (2) to enable the student to analyze and deal with the administrative problems related to health agencies; (3) to prepare the student so that in adopting and carrying out decisions he is correctly interpreting and integrating the knowledge and techniques he was taught; (4) to prepare the student so that he will lead inservice training in the sectors in which he works; and (5) to arrange seminars and practice exercises so that students acquire a broader knowledge of effective administration.

A public health training course for administrative personnel was held in Santiago, Chile, from 17 May to 31 August. This was a joint effort of the Administration Institute (INSORA) of the University of Chile, the National Health Service, and the Organization. Of the 26 students, 6 were fellows of the Organization and came from Costa Rica (3), Guatemala, Honduras, and Uruguay. The main subjects covered were general administration, public administration, budget and accounting, personnel management, social psychology, and principles of public health. Plans were developed to hold similar courses at INSORA, with participation of a larger number of students from other countries of South America.

Another course was held in cooperation with the Central American School of Higher Education in Public Administration (ESAPAC), in San José, Costa Rica, from 20 September to 19 December. Twenty-four students attended the course, 18 of them with fellowships awarded by the Organization, as follows: Guatemala, 4; Honduras, 6; Nicaragua, 3; and Panamá, 5. The basic disciplines taught were: principles of administration, theory of state and public administration, administration for de-

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velopment, introduction to development, administration of health programs, organization and methods, personnel management, financial management, supply administration, records management, and transport administration.

In addition, the Organization continued providing administrative training to officials engaged in the national malaria eradication campaigns and the water supply programs throughout the Hemisphere.

Public Health Laboratories

The growing complexity of present-day medicine and public health is increasing the demand for trained laboratory personnel for diagnosis and for epidemiological investigation. To meet this demand, in 1965 the Organization took steps to establish a training center for laboratory directors and planned short courses in enterobacteriology, mycobacteriology, fluorescent antibody techniques, and tissue culture.

The Organization cooperated with the countries in the training of scientific personnel by awarding fellowships and by giving advisory services in the planning and conduct of national courses.

In connection with 2 refresher courses for personnel of the Oswaldo Cruz Institute, in Rio de Janeiro, Brazil, 1 consultant assisted in teaching the theory and practice of tissue culture and the isolation and typing of enteroviruses.

In Chile consultants assigned by the Organization conducted 2 courses on the laboratory diagnosis of venereal disease for staff members of the Institute of Bacteriology and of the peripheral laboratories. Professional health workers from Argentina, Ecuador, and Paraguay also attended the course.

The Department of Pathology of the Faculty of Medicine of the University of the West Indies, in Kingston, Jamaica, continued to serve as a training center for laboratory technicians from the English-speaking countries and territories of the Caribbean Area. A manual on laboratory techniques was made available, for which the Organization defrayed publishing costs. As consultant for the Organization, the director of the training center visited the laboratories of Antigua, Barbados, Dominica, Granada, Montserrat, St. Kitts, St. Lucia, St. Vincent, and Trinidad and Tobago, where graduates of the University of the West Indies course are working.

With the assistance of the Organization, Cornell University, of New York, U.S.A., continued its training activities in México for personnel engaged in research on the ecology of arthropod-borne viruses.

Food and Drug Control

The First Seminar on Food and Drug Control for Central America and Panamá was held in Guatemala City from 6 to 11 September. It was attended by 16 representatives of food and drug control services of the Ministries of Public Health in those countries, by officials of the Central American Institute of Investments and Industrial Technology, INCAP personnel, and consultants engaged for this purpose by the Organization.

The Zone III veterinary public health adviser gave a course on the technological and health aspects of food-stuffs to students at the INCAP School for Dietitians.

The El Paso Field Office made arrangements for public health veterinarians from the state of Chihuahua, México, to observe teaching techniques and study programs at the School for Food Handlers in El Paso, Texas.

Rehabilitation

In Argentina, with the cooperation of the prosthesis specialist of the Pilot Rehabilitation Center, of Santiago, Chile, a course for instructors was held for 12 students and another for prosthesis technicians was organized.

In Brazil, 9 students graduated from the 2-year course at the Rehabilitation Institute, and 11 entered the second year. The course on the manufacture of orthopedic appliances was attended by 12 technicians from Bolivia, Brazil, Colombia, Dominican Republic, and Ecuador.

Four students completed the second prosthesis technician course in Chile, and 10 registered in a new course, begun in May. Seven students completed the 3-year occupational therapy course, 12 students entered the second year, and 11 began the first year.

In Venezuela a 3-month course on the rehabilitation of leprosy patients was attended by 10 leprologists from Argentina, Colombia, Ecuador, México, and Venezuela. A 2-year physiotherapy course was begun, with 17 students.

Maternal and Child Health

An *ad hoc* group of pediatric educators was assembled in Washington, D.C., for 1 day, to advise the Organization concerning development of activities aimed at strengthening pediatric education in the Americas and linking pediatric centers more closely to the planning and delivery of health services. A number of ideas were pre-

sented which will be subject to further review at a Meeting of the PAHO Advisory Group on Pediatric Education, scheduled for 1966.

Two international training centers in social pediatrics, located in Santiago, Chile, and in Medellín, Colombia, are sponsored and supported by the Organization. In 1965 each of these centers gave a 3-month course in social pediatrics, designed for pediatric medical school faculty and pediatric clinical service administrators. Twenty-three fellows from 13 countries attended these courses, in addition to 4 national fellows of each host country. The courses combined a special orientation to the field of community and child health with an extended review of all aspects of selected clinical fields, such as nutrition and diarrheal diseases. The courses were organized by the pediatric departments of the local medical schools with the collaboration of the national schools of public health and Ministries of Health of Chile and Colombia.

The School of Public Health of Chile admitted midwives for the first time as regular students (4 were registered), and a number of nursing schools were planning to include midwifery in their curricula.

The international Children's Center, of Paris, the Inter-American Children's Institute, of Montevideo, and the Organization sponsored and supported technically and financially a 4-week course in growth and development, held at INCAP in Guatemala. The course was attended by 30 physicians from 13 Latin American countries.

In Mendoza, Argentina, a 3-month course of orientation in public health, nursing, and community maternal and child health practice was attended by 30 graduate midwives. The Organization's assistance included 1 short-term consultant in nursing-midwifery.

In Recife, Brazil, refresher and practical training in pediatrics was provided to 42 practicing physicians of the health services of the Northeast of the country. This activity is part of a general program of assistance aimed primarily at strengthening the pediatric department of the University of Recife and linking its personnel more closely to the health services of the area.

A PAHO consultant in nursing-midwifery, working as a member of the health-service project team, assisted the School of Nursing of the National University of Paraguay to improve the School's postgraduate course in midwifery for nurses and the midwifery aspects of the undergraduate program. A rural internship for midwives was inaugurated and practice areas were improved. A 6-week refresher course was conducted for 13 graduate midwives, and 2 seminars were held.

Requests for PAHO assistance in nursing-midwifery educational activities were received from Córdoba, in

Argentina, and from Uruguay. Plans were developed to respond to these requests in 1966.

Nutrition

In order to meet the increasing demand for nutrition educational material for medical undergraduates in Latin America, the Organization translated into Spanish a handbook on nutrition for medical and paramedical personnel.

National nutrition units have been established in every country of the Hemisphere; however, there has been a serious delay in decentralizing the activities of these units by implementing their plans and recommendations through Government services at the local level. One of the principal reasons for this delay is the lack of adequately trained personnel in sufficient numbers to staff these services. The key professional for this purpose is the non-medical, public health nutritionist. Though a substantial number of this type of personnel has been trained on PAHO fellowships in such institutions as INCAP, the majority has been incorporated into the staff of the central unit. In order that this personnel may be trained in sufficient numbers for community action programs, national training centers must be strengthened. For this reason a questionnaire was circulated to 19 schools of nutrition and dietetics in Latin America to obtain information about current training, programs, problems, and instructional needs. On the basis of the data thus obtained a short-term consultant visited 17 of these schools during a 2-month period to undertake a precise assessment of their status and to make specific recommendations for an action program by PAHO aimed at strengthening these institutions. The report of the consultant was being prepared for distribution; and, as an initial step, a technical conference for the teaching staff of these institutions was planned for 1966.

A total of 31 academic and short-term fellowships were awarded for training in the field of nutrition. The major part of the academic fellowships were for physicians and dietitians to obtain specialized training in public health nutrition. The majority of short-term fellowships were for public health physicians to attend the short course on nutrition at INCAP. Fellowships were also awarded for research training in endemic goiter and nutritional anemias as part of collaborative studies carried out under the auspices of the Organization.

In view of the widespread concern over the inadequacy of nutrition teaching at the undergraduate level for medical and paramedical personnel, the Organization, with

financial assistance from the Williams Waterman Fund, sponsored a Seminar on Nutrition in Medical Education which was held in Pôrto Alegre, Brazil, from 24 to 30 October. Representatives from 32 medical schools attended and discussions were centered on technical content—the multidisciplinary approach to teaching and the resources required for improvement. The recommendations were later approved by the Brazilian Federation of Medical Schools for progressive implementation.

In response to an expressed need by the health services in Brazil, short courses on public health nutrition for medical and paramedical staff of state and federal services were set up and carried out in a medical school each in Belém, Belo Horizonte, Pôrto Alegre, and Recife. The courses, which were attended by 73 physicians and 10 paramedical personnel, will be repeated annually and will focus on modern concepts of nutrition science and its application to public health practice.

The Second Seminar on Public Health Nutrition for Country Representatives of PAHO was held at INCAP. The meeting was designed to provide information on the modern concepts of nutrition in public health and to discuss the incorporation of nutrition into national health plans. This 2-week seminar was attended by Representatives stationed in Argentina, Brazil, Colombia, Ecuador, Honduras, Panamá, Paraguay, and Uruguay.

A Seminar on Salt Iodization for the Prevention of Endemic Goiter was held in Salta, Argentina, in collaboration with the Ministry of Social Welfare and Public Health and UNICEF. The seminar was designed to study the problems related to salt iodization programs in the Hemisphere, including technical, administrative, and financial aspects. Twenty-nine participants from 13 countries represented either public health interests or the salt-producing industry. Their interchange of ideas produced a series of detailed conclusions, and recommendations were drawn up to be included in the final report. As an immediate result of this meeting, the Governments of Ecuador and Venezuela requested and received the services of a short-term consultant to advise them on technical and administrative aspects of salt iodization programs.

Mental Health

The training of personnel specialized in mental health is a matter of concern to many countries, and some of them are conducting, with cooperation from the Organization, psychiatric residency programs.

In 1965 the Organization awarded a fellowship to an

instructor in the psychiatric residency program of the Manuel Antonio Chapuí Psychiatric Hospital of San José, Costa Rica, to observe techniques of teaching group psychotherapy in the United States of America.

The Organization provided advisory services in connection with a 1-week workshop in psychiatric nursing which was held in Kingston, Jamaica, and attended by 22 nurses. During this workshop it became obvious that the teaching of psychiatric nursing should be integrated into the general nursing education and training program.

A course on psychiatric nursing in Venezuela was attended by 5 students; 6 students began a second course.

Radiation Protection

To aid in promoting the use of radioisotopes in medicine for diagnosis, therapy, and research, 6 physicians—from Colombia (2), Costa Rica (2), Ecuador, and Perú—and in addition one technologist in radioisotope procedures—from Uruguay—were granted fellowships to attend the fourth annual 7-month training course on this subject, conducted at the Salvador Hospital, in connection with the University of Chile in Santiago. These fellows were trained in the general clinical application of radioisotopes, and they received specialized training in gastroenterology, endocrinology, cancerology, hematology, cardiology, urology and renography.

While the teaching program was due to run for 1 additional year, plans were being made to extend it for at least 3 more years. A Brazilian professional received a 2-month fellowship for studies in cytogenetics; a Jamaican, a 2-month award for studies in radiochemistry; and a Venezuelan, a short-term award for studies in food preservation by irradiation.

A Meeting on Epidemiological Studies in Human Radiation Biology was held in December in Washington, D.C. The Meeting was attended by 2 temporary advisers from Brazil and 38 scientists and physician researchers from various European and Eastern countries and the United States of America.

Throughout the Hemisphere extensive use was being made of 3 films translated into Spanish and produced by the Organization. These films, which illustrate the fundamentals of radiation physics, radiobiology, radiation protection and medical uses of ionizing radiation, were being used as teaching media in medical schools as well as by hospitals and professional societies. Various printed items in Spanish were also made available by the Organization for the same purpose.

The publications in this field included the American College of Radiology's *A Practical Manual on the Medical and Dental Use of X Rays with Control of Radiation Hazards*, translated into Spanish by the College and distributed by the Organization to a number of countries in Latin America; copies in English were distributed to Jamaica and Trinidad. This activity was carried out in accordance with an agreement with the College, by which the PASB both prints and distributes the Spanish version of the Manual. The Spanish translation of the USPHS Training Course Manual *Basic Radiological Health* was updated. The article "What Nurses Should Know about Radiation Hazards," published in the *International Nursing Review*, II:4, was translated into Spanish and more than 2,000 copies of the article were distributed to 109 Nursing Schools in Latin America.

Planning

Training of various levels of health personnel in the methodology of national health planning continued to be a major activity of the PASB.

The fourth international Spanish-language course was held in conjunction with the Latin American Institute of Economic and Social Planning, in Santiago, Chile, from 6 September to 11 December. Trainees included 29 medical officials, including teachers of public health, 2 dentists, 1 economist, 1 engineer, and 1 nurse. The Organization assigned 2 full-time staff members and 2 short-term consultants to the teaching program.

The third international English-language course was held at Johns Hopkins University, Baltimore, Maryland, U.S.A., from April to June. The 25 trainees included 6 WHO staff members. This course offered the opportunity of exploring health planning on a global basis. A staff member of the Organization assisted in the teaching program.

PAHO/WHO consultants assisted in the organization of national health planning courses in Bolivia, Brazil, Chile, El Salvador, Nicaragua, Perú, Trinidad and Tobago, and Venezuela. The courses formed part of the national health planning process. Trainees received specific instruction on their individual roles in the formulation and implementation of the national health plan.

PASB staff members also gave a variety of lectures, conducted short courses, and led round-table discussions on health planning for students at schools of public health, for participants in service training programs in Ministries of Health, and for members of various professional groups in a number of countries.

Fellowships

There was substantial growth in the fellowship program. The distribution of fellowships by type of training was very similar to the pattern of earlier years and was in line with the policy of the Organization to give the highest priority to fellowships for academic studies and intensive short courses and less priority to travel grants.

The fellowships awarded in 1965 rose to 830. The increase of 29.9% over the 639 fellowships awarded in 1964 was due to the greater number of fellowships awarded for special short courses. These amounted to 40, a 14% increase over 1964. The 830 fellowships accounted for 4,127 fellowship months, an average of 5 months per fellowship. This is a very satisfactory average since most of the fellowships (565) were short-term. In addition, 27 extensions were approved and accounted for 66 fellowship months.

The applications received from the Americas totaled 1,325 and 243 of them were transferred to 1966. In addition, 296 applications were received from other WHO Regions.

The 358 fellowships awarded for attendance at special short courses accounted for 43.1% of the total; the 265 long-term fellowships for academic studies, for 31.9%; and the 207 fellowships for observation visits, for 24.9% (Table 32). In the first category there was an increase of 38.8% over 1964 (258), which was the result of the larger number of courses held; the second category remained at about the same level (265 in 1964 and 253 in 1965); and the third category increased by 61.7% (128 in 1964), which increase was due to the greater number of fellowships awarded to faculty members.

Fifty-two percent of the fellows attended courses organized or sponsored by the Organization. Of these, 11% attended courses on public health administration; 12%, courses on sanitation; 14%, courses on nursing; 20%, courses on communicable diseases; 15%, courses on medical education; 5%, courses on maternal and child health; and 23% miscellaneous courses.

The distribution of fellowships by field of study and specialty (Table 33) was in line with the general program of work of the Organization: 19.6% were for fellowships to study communicable diseases; 16.4% for medical education and related sciences; 16.7% for environmental sanitation; 16.4% for other health services; 13% for public health administration; 13% for nursing; 3.7% for maternal and child health; and 1% for clinical medicine.

III. EDUCATION AND TRAINING

TABLE 32. FELLOWSHIPS AWARDED IN THE AMERICAS, BY COUNTRY OF ORIGIN AND TYPE OF TRAINING, 1965

Country of origin of fellows	Type of training			Total	
	Courses organized or assisted by PAHO or WHO		Regular academic courses		Travel grants and other awards
	Special	Academic			
Argentina.....	26	9	25	14	74
Bolivia.....	11	1	2	3	17
Brazil.....	24	16	11	28	79
Canada.....	—	—	1	1	2
Chile.....	12	—	4	17	33
Colombia.....	26	4	11	20	61
Costa Rica.....	16	4	17	5	42
Cuba.....	5	2	9	1	17
Dominican Republic.....	2	2	8	—	12
Ecuador.....	9	2	11	5	27
El Salvador.....	7	7	8	18	40
Guatemala.....	12	1	9	2	24
Haiti.....	2	—	—	—	2
Honduras.....	16	3	8	4	31
Jamaica.....	15	1	6	8	30
México.....	11	3	2	10	26
Nicaragua.....	13	—	5	2	20
Panamá.....	12	2	7	14	35
Paraguay.....	18	—	5	3	26
Perú.....	23	1	10	8	42
Trinidad and Tobago.....	3	—	1	4	8
United States of America.....	2	—	—	17	19
Uruguay.....	17	3	8	4	32
Venezuela.....	20	4	12	15	51
British Territories.....	54	7	11	4	76
Surinam and the Netherlands Antilles.....	2	—	2	—	4
Total.....	358	72	193	207	830

— None.

A comparison with 1964 discloses some significant changes. Fellowships to study communicable diseases increased from 90 in 1964 to 163 in 1965 (81.1%); those for nursing from 88 to 108 (22.7%); those for sanitation from 129 to 139 (7.8%); those for maternal and child health from 24 to 31 (29.2%); and those for public health administration from 79 to 108 (36.7%). Of the last mentioned, 24 were awarded to enable personnel to attend the Planning Course in Santiago, Chile.

The fellowships in medical education and related sciences increased from 117 in 1964 to 155 in 1965 (32.5%) and were awarded to faculty members of medical and public health schools and to professors in related fields (Table 34). The awards made to professors of schools of medicine accounted for 65% and the ones to professors of schools of public health for 23%. Instruc-

tors from dental schools accounted for 9% and those from veterinary schools for 3%.

In view of the experience acquired and the results obtained, the policy of sending fellows to countries whose language, governmental organization, living conditions and health problems were similar to those of their countries of origin was continued (Table 35). As in previous years, assistance was received from the authorities and educational institutions of the Member Governments. Of all studies, 65% were carried out in Latin American countries; 17% in Canada and the United States of America; 9% in Jamaica, British Territories in the Caribbean, and Trinidad and Tobago; and 9% in other WHO Regions. Of the last mentioned, 87% were carried out in Europe and included the inter-Regional courses organized by WHO headquarters.

TABLE 53. FELLOWSHIPS AWARDED IN THE AMERICAS, BY FIELD OF STUDY AND COUNTRY OF ORIGIN, 1965

Field of study	Country of origin of fellows																			Total								
	Argentina	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	El Salvador	Guatemala	Haiti	Honduras	Jamaica	México	Nicaragua	Panama	Paraguay		Peru	Trinidad and Tobago	United States of America	Uruguay	Venezuela	British Territories	Surinam and the Netherlands Antilles	
Health organization	3	1	2	1	—	—	7	—	1	2	—	7	—	7	1	—	4	5	3	3	1	1	3	1	—	—	—	50
Public health administration.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25
Hospital and medical administration.....	4	—	1	—	1	5	2	1	1	—	1	1	—	1	—	—	1	—	—	—	1	—	2	2	—	1	—	33 ^a
Other.....	6	4	3	—	1	2	3	2	—	—	—	—	—	2	—	—	1	—	—	—	3	—	1	1	3	—	—	
Sanitation	—	—	—	—	—	—	2	—	—	—	2	2	—	2	6	—	2	—	—	—	—	—	—	—	—	—	22	
Sanitary inspection.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	81	
Sanitary engineering.....	3	—	10	—	1	6	2	—	3	1	3	2	—	3	—	8	6	7	4	—	3	1	1	3	—	—	—	
Other.....	—	—	2	—	—	—	1	—	—	—	19	1	—	2	—	—	—	—	1	2	—	1	1	1	—	—	36	
Nursing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Nursing education.....	7	—	4	—	1	1	3	—	—	1	2	1	—	—	2	1	1	2	—	—	—	—	1	1	—	—	37	
Public health nursing.....	1	—	—	—	—	3	1	1	2	—	—	1	—	2	3	—	—	—	—	—	—	—	—	—	—	—	54	
Nursing services.....	4	—	1	—	—	2	4	—	1	—	—	1	—	—	—	—	—	2	—	—	—	—	1	—	—	—	17	
Maternal and child health.....	3	3	1	—	1	1	1	1	—	1	—	1	—	1	—	—	—	4	1	3	—	—	5	4	—	—	31	
Other health services	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Mental health.....	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	
Health education.....	—	—	2	1	—	—	1	—	—	1	—	—	—	1	—	1	—	—	—	1	2	—	2	1	—	—	9	
Occupational health.....	3	—	1	—	—	1	—	1	—	—	—	—	—	—	1	1	—	—	—	1	—	—	—	—	—	—	9	
Nutrition.....	6	1	2	—	—	3	1	2	—	—	—	—	2	2	1	1	—	3	1	1	—	—	1	2	—	—	30	
Health statistics.....	1	—	1	—	1	1	1	—	—	2	1	1	—	1	10	1	—	—	—	—	—	—	2	1	—	—	40	
Dental care.....	2	—	3	—	—	6	2	1	1	3	—	—	—	1	1	—	—	—	—	—	2	—	—	3	—	—	27	
Rehabilitation.....	2	1	3	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	10	
Control of pharmaceutical preparations.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	1	—	—	—	—	—	—	—	5	
Communicable diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Malaria.....	—	—	2	—	—	12	2	1	—	—	—	—	—	—	—	2	—	1	1	1	1	—	—	—	—	—	23	
Tuberculosis.....	4	1	1	—	1	1	—	—	—	2	1	—	—	2	—	1	—	—	5	—	1	—	1	—	—	—	21	
Zoonoses.....	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	
Foot-and-mouth disease.....	1	1	7	—	1	3	1	—	—	1	1	1	—	1	—	1	1	2	1	3	—	—	2	1	—	—	29	
Leprosy.....	2	1	—	—	—	3	—	—	—	2	—	—	—	—	—	1	—	—	—	2	—	—	—	—	—	—	11	
Other communicable diseases.....	2	—	4	—	1	—	1	—	—	2	1	1	—	1	2	2	2	2	1	2	—	—	4	4	—	—	36	
Laboratory services.....	2	1	3	—	—	—	1	1	—	3	—	2	—	—	1	2	—	2	—	—	2	—	—	—	—	—	30	
Veterinary public health.....	—	—	2	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	1	3	—	—	—	—	—	11	
Medical education and related sciences.....	18	3	21	—	23	10	3	6	2	7	5	1	—	1	1	3	2	—	2	9	—	6	5	8	—	—	136	
Clinical medicine.....	—	—	—	—	—	—	2	—	1	—	1	—	—	—	1	1	—	1	—	1	—	—	1	—	—	—	9	
Total.....	74	17	70	2	33	61	42	17	12	27	40	24	2	31	30	26	20	35	26	42	8	19	32	51	76	—	4 830	

— None.

^a Of these, 24 attended the planning course.

TABLE 35. FELLOWSHIPS AWARDED IN THE AMERICAS, BY COUNTRY OF ORIGIN AND BY COUNTRY OR REGION OF STUDY, 1965

Country of origin	Countries of study in the Region of the Americas															Other Regions of study									
	Argentina	Brazil	Canada	Chile	Colombia	Costa Rica	Ecuador	El Salvador	Guatemala	Honduras	Jamaica	México	Nicaragua	Panama	Perú	Trinidad and Tobago	United States of America	Venezuela	British Territories	Africa	Eastern Mediterranean	Europe	Southeast Asia	Western Pacific	
Argentina.....	—	16	—	21	7	1	1	1	11	—	—	3	1	—	4	—	13	7	—	—	—	—	7	—	—
Bolivia.....	—	2	—	4	1	—	—	—	3	—	—	2	—	1	—	—	—	2	—	—	—	1	—	—	—
Brazil.....	6	5	—	12	8	—	—	3	6	—	4	—	—	2	3	—	27	7	—	—	1	12	—	—	—
Canada.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	4	—	—	—	1	9	—	—
Chile.....	3	4	—	14	—	—	—	2	5	—	4	—	—	—	2	—	10	14	—	—	—	3	—	—	—
Colombia.....	3	7	—	12	3	—	7	2	2	—	2	—	—	1	1	—	8	4	—	—	—	—	—	—	—
Costa Rica.....	—	5	—	8	—	—	—	6	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—
Cuba.....	—	—	—	1	—	—	—	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—
Dominican Republic.....	—	2	—	1	—	—	—	—	—	—	—	5	—	—	—	—	2	—	—	—	—	—	—	—	—
Ecuador.....	1	8	—	6	3	—	—	—	1	—	—	1	—	—	—	—	2	3	—	—	—	3	—	—	—
El Salvador.....	1	7	—	3	17	9	—	2	1	—	1	—	—	8	—	—	4	3	—	—	—	2	—	—	—
Guatemala.....	—	1	—	6	1	6	—	2	2	—	—	3	—	1	—	—	3	1	—	—	—	—	—	—	—
Haiti.....	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Honduras.....	—	2	—	5	2	7	—	4	2	—	—	4	—	—	—	—	1	5	—	—	—	—	—	—	—
Jamaica.....	—	—	6	1	—	—	—	—	—	—	10	—	—	—	—	2	8	8	—	—	—	—	—	—	—
México.....	1	1	—	1	2	—	—	3	—	—	—	—	—	—	3	—	6	8	—	—	1	6	—	—	—
Nicaragua.....	—	—	—	3	1	5	—	3	3	—	—	3	—	—	—	—	1	1	—	—	—	—	—	—	—
Panamá.....	—	2	4	5	2	5	—	—	6	—	—	—	—	—	1	—	5	8	—	—	—	1	—	—	—
Paraguay.....	8	6	—	2	2	—	—	1	1	—	—	3	—	—	—	—	1	4	—	—	—	—	—	—	—
Perú.....	3	11	—	8	6	1	—	—	2	—	—	2	—	—	—	—	6	6	—	—	—	5	—	—	—
Trinidad and Tobago.....	—	—	1	1	—	—	—	—	—	3	—	—	—	—	—	—	5	6	—	—	—	—	—	—	—
United States of America.....	—	2	—	1	1	1	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	4	12	1	2
Uruguay.....	4	5	—	11	6	1	—	—	4	—	—	2	—	—	—	—	5	3	—	—	—	—	—	—	—
Venezuela.....	—	7	—	7	3	—	—	1	5	—	—	—	2	—	1	—	23	—	—	—	—	7	—	—	—
British Territories.....	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	6	—	—	—	—	—	—	—	—
Surinam and the Netherlands Antilles.....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35	—	—	—	—	—	—
Total visits.....	30	93	13	130	69	36	9	29	58	3	44	46	3	14	17	2	151	80	44	2	6	73	1	—	2

— None.

III. EDUCATION AND TRAINING

TABLE 36. PROFESSION OR OCCUPATION OF FELLOWS, 1965

Profession or occupation	Number
Physician.....	326
Nurse.....	115
Engineer.....	96
Veterinarian.....	46
Dentist.....	30
Other professions.....	139
Sanitary inspector.....	30
Other nonprofessional occupations.....	48
Total.....	830

According to the nature and development of the programs, 90.6% of all fellowships were awarded to professional and 9.4% to nonprofessional health workers (Table 36). In the professional group (752) most fellowships were awarded to physicians (43.4%); nurses received 15.3%; engineers, 12.8%; veterinarians, 6.1%; and dentists, 4%. The remaining fellowships were awarded to members of other professions or occupations (18.5%).

Tables 33 and 36 show discrepancies in the number of nurses and dentists who received fellowship awards. The discrepancies, however, are only a matter of classification, whether as to profession or specialty. The

TABLE 37. FELLOWS FROM OTHER REGIONS WHO BEGAN STUDIES IN THE AMERICAS, BY FIELD OF STUDY, TYPE OF AWARD, AND REGION OF ORIGIN, 1965

Field of study and type of award	Region of origin and number of fellows					Total
	Africa	Eastern Mediterranean	Europe	Southeast Asia	Western Pacific	
Public health administration						
Academic courses.....	4	2	1	—	3	10
Travel grants.....	—	—	2	1	4	7
Sanitation						
Academic courses.....	1	3	—	1	2	7
Travel grants.....	1	—	3	3	—	7
Nursing						
Academic courses.....	4	5	4	5	8	26
Travel grants.....	1	—	2	1	1	5
Maternal and child health						
Academic courses.....	1	—	—	—	1	2
Travel grants.....	—	—	1	—	—	1
Other health services						
Academic courses.....	3	3	1	3	7	17
Travel grants.....	—	—	6	2	2	10
Communicable diseases						
Academic courses.....	1	1	—	8	1	11
Travel grants.....	—	4	3	2	4	13
Medical education and related sciences						
Academic courses.....	—	2	1	4	5	12
Travel grants.....	1	2	15	1	3	22
Clinical medicine						
Travel grants.....	—	—	4	—	4	8
Total.....	17	22	43	31	45	158

— None.

figure of 115 nurses who received fellowships accounted for in Table 36 is composed of the 108 nursing fellowships shown in Table 33 plus 7 other awards made to nurses but classified by area of specialization—1 in health education, 2 in teaching of public health, 3 in tuberculosis, and 1 in environmental sanitation (an observation program to visit health-service premises). As to dental fellowships, 30 were awarded: the 27 easily identifiable in Table 33 and 3 others that were classified under medical education and related sciences because the recipients were professors of dentistry in schools of public health.

The number of fellows from other WHO Regional Offices who came to the Americas increased by 8.2% (146 in 1964 and 158 in 1965). Fifty-four percent of these fellows attended academic courses and 46% made observation visits; of the latter, half were fellows from Europe (Table 37). The majority of studies and visits were made in the United States and Canada (87%) and the remainder in various Latin American countries.

All the preceding data relates solely to activities connected with the 830 fellowships awarded in 1965 and the 158 fellows from other Regional Offices who studied in the Americas in that period. Therefore, in order to arrive at the total number of fellows who in that period were under the technical and administrative supervision of the Bureau, it is necessary to add the number of fellows who began their studies in 1964 and completed them in 1965. This total amounted to 1,054 as compared with 962 in 1964. Of these, 578 fellows studied in Latin America (54.8%), 404 in the United States and Canada (38.3%), and 72 in other parts of the world (6.8%); and as to where they hailed from, 819 fellows were from the Americas (77.7%) and 235 from other WHO Regions (22.3%).

Each fellow received every assistance in accordance with the regulations, and the usual cooperation from technical personnel was provided through interviews at Headquarters or in the places of study. These interviews have proved to be of great value in orienting fellows with respect to their studies and in averting and solving problems which often have to be faced by persons on their first trip abroad. Relations with government agencies and educational institutions responsible for the training of fellows proceeded normally.

As in previous years, technical advice was again given to the fellowship program of the Organization of American States: 244 applications for fellowships in the field of medicine and allied sciences were examined and evaluated, as compared with 207 in 1964. In addition, some of these fellows were interviewed at their places of study.

Technical advice and cooperation was also provided to the fellowship program of the Government of Venezuela. At the request of that Government the Organization looked after 69 fellows, most of whom were interviewed at their place of study (48 in the United States, 7 in Canada, and 10 in Latin American countries; the others studied in Europe).

Programs of study and observation visits were prepared for 41 officials of the Organization.

The country directories of fellows, which are being used to ascertain the positions occupied by former fellows, were completed.

Finally, in the course of 1965 the fellowship program was evaluated in 2 countries of the Americas. The results were very satisfying because the analysis of a representative sample showed that most of the former fellows were holding posts connected with the training they had received.

IV. PLANNING

National Health Planning became a well established sectoral activity within the general context of economic and social development planning. It was accepted more and more as a practical approach to the analysis of the national health situation and offered a means of systematically instrumenting operational activities to meet the priority needs.

In most countries planning was first introduced and applied to the health services operated by the Ministries of Health; however, to an increasing extent, other health subsectors, such as social security, were introducing the recommended systematic planning method. Only when all the subsectors constituting total health in a country are involved in coordinated planning, can a truly national approach be adopted.

In some of the countries it was found expedient to have the planning efforts of the various health subsectors coordinated through such mechanisms as National Health Planning Councils. The inclusion of health sections in central economic development planning agencies assisted in the macroanalysis of the health sector and facilitated high level decision-making. Legislation formalizing national health planning was passed in many countries.

The fact that 125 health planners were trained over the last 4 years in cooperation with the Latin American Institute of Economic and Social Planning, in Santiago, Chile, ensured a uniformity of approach between health and economic development planning. The health planning course also served as the technical focal point for gathering together the experience gained in each individual country committed to the national health planning process.

Increased difficulty was experienced in meeting the many requests from Governments for technical assistance in health planning, and it was only possible to meet these requests through the generosity of Governments in releasing planning personnel for short-term consultant assignments. This international exchange of personnel was having a stimulating effect on the whole health

planning concept in the Hemisphere. Technical uniformity was also promoted by having PAHO Country Representatives and other key Zone and Headquarters staff attend the health planning course.

At the international level, the formulation of national health plans within the individual countries helped to bring to the attention of the international lending agencies the need for investments to promote a social as well as an economic infrastructure for balanced development. The plans also indicated which specific lead sectors in health required international assistance. A country with a well-developed national health plan, integrated into the national development plan, is in a stronger position to attract international financial assistance in the form of grants and favorable loans for development in the field of health.

On the national scene, the process of national health planning was instrumental in bringing about a better understanding by the economic advisers to Governments of the problems inherent in health development. It also acted as a means of contact between the subsectors constituting total health within the countries.

Principal Developments of 1965

PASB health planning staff were assigned to Zones I, IV, V, and VI. Consultant assistance was given also in the formulation of national health plans in Bolivia, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Nicaragua, Perú, and Trinidad and Tobago.

National health planning courses were held with the assistance of consultants, provided by the Organization, in Bolivia, Brazil, Chile, El Salvador, Nicaragua, Perú, Trinidad, and Venezuela.

Conversations concerning the future organization of national health planning were held with the Government in Argentina, Brazil, Colombia, Jamaica, and Panamá.

The fourth international course for health planners

was held in Santiago, Chile, from 6 September to 11 December, in association with the Latin American Institute of Economic and Social Planning (see Planning, Chapter III, Education and Training).

The Office of National Health Planning at Headquarters represented the health sector at the Inter-American Committee of the Alliance for Progress (CIAP) country reviews which were conducted in Washington, D.C., from June to October. During this round of confrontations, the Committee examined the pattern of the planning organizations functioning in each country. The social sector, including health, was also subjected to some scrutiny with a view to determining the requirements for international investment. It became apparent in the course of these examinations that the analysis of the health sector contained in the submission of national development plans presented by many countries required some additional definition to bring out the priority fields within the health sector suitable for international grant and loan assistance.

National Health Planning was the subject of the Technical Discussions during the Eighteenth World Health Assembly held in Geneva in May. The Region of the Americas was represented in these discussions out of which many helpful suggestions were made.

It was recommended that the World Health Organization should institute or support experimental research

into the establishment of norms for use in the planning of health services. The WHO was also asked to support courses of training in health planning and to develop guidelines to facilitate planning operations in developing countries.

Pan American Center for Health Planning

A request was prepared and submitted to the United Nations Special Fund (incorporated in early 1966 into the United Nations Development Program) for support of a Pan American Center for Health Planning. This submission received the technical support of the Director-General of WHO.

The United Nations Special Fund was asked to contribute \$1,616,000 towards the establishment and operation of the Center for a preliminary period of 5 years. The Government of Brazil indicated that it will subscribe \$125,000 during the same period, and the Governments of Chile and Perú each indicated that they will contribute \$100,000.

The project is intended to advance training and assist Governments in the health planning process, and the Center itself would act as the focal point of research for health planning in the Americas.

V. RESEARCH

The research program of the Organization continued to develop according to policies and guidelines which in large part have evolved from the recommendations of the Advisory Committee on Medical Research (PAHO/ACMR). The Committee maintains an active interest in specific research projects and in the program as a whole, its balance as to major emphases, and its priorities.

At its fourth annual meeting, held in Washington, D.C., from 14 to 18 June, the Committee gave particular attention to a fundamental study of national research policies, their structures, and processes, observing that a scientific tradition had been slow to develop in Latin America. The basic need, therefore, was to foster a climate of opinion that understands the role of scientific investigation to be a part of the cultural life of the community. The Committee pointed out that research and teaching must go hand in hand and that the universities are natural centers for developing a research tradition, and stressed the importance of academic and scientific organizations in the dissemination of knowledge and associated technical skills.

It was made clear that the purpose of all research, whether conducted in the laboratories of basic medical science or in the community viewed as a laboratory for public health research, is fundamental and the same, namely, the acquisition of knowledge and skills with which to solve problems. The approach to problems of health and related socioeconomic development through research and research training has become accepted as a necessary component of all planning and operations.

Substantial progress was made in defining and developing the Organization's policy and program on the health aspects of population growth and socioeconomic development. The pronouncement of the Eighteenth Meeting of the World Health Assembly (WHA18.49) authorized WHO to provide, upon request, "technical advice on the health aspects of human reproduction and

should not involve operational activities," it not being "the responsibility of WHO to endorse or promote any particular population policy," and that "it is a matter for national administrations to decide whether and to what extent they should support the provision of information and services to their people on the health aspects of human reproduction." Resolutions of the XVI Meeting of the Directing Council of PAHO (XVII Regional Committee of WHO for the Americas) assure a coordinated program in the Western Hemisphere among organizations of the Interamerican System.

Health Manpower

In considering the development of health resources of a country, the determination of health manpower requirements, including auxiliary personnel, as to both quantity and specializations, is of critical importance. The research approach to this problem was being tested and perfected in Colombia in a cooperative study by the Ministry of Public Health and the Association of Colombian Medical Schools, with the technical and financial assistance of the Milbank Memorial Fund and the Organization. The study was well advanced and promises to be a major contribution to knowledge and skills in measuring resource requirements in the context of the socioeconomic development of fast-growing populations toward higher standards of living.

A critical aspect of biomedical research development in Latin America is the shortage of specialized health manpower, aggravated by the fact that emigration, chiefly to the United States, constitutes a drain of medical scientists and professional personnel. An intensive study of this phenomenon is underway to identify the relevant factors, forces, and circumstances leading to migration of scientists.

Research Policy

A study group was assembled to examine the national policies for biomedical research in Argentina, Brazil, Chile, Colombia, Guatemala, Perú, Venezuela, and the English-speaking countries and territories in the Caribbean. After observation visits, data collection, opinion exchange and review by the PAHO/ACMR, a report was prepared wherein (a) the central role of the university in nurturing research was recognized, (b) the need was expressed for clarification of the university's objectives to aim at the development of the student's mind and not solely at his information, (c) the desirability of maintaining continuity and stability in institute leadership was emphasized, and (d) an intellectual common market was proposed.

With respect to national policies for public health research, 2 short-term consultants were assigned—at the request of the Ministry of Social Welfare and Public Health of Argentina—to identify the needs and opportunities for research in the country and to formulate recommendations for a public health research program for the Ministry.

Scientific Communications

Following visits by PAHO consultants to Argentina, Brazil, Chile, Colombia, Uruguay and Venezuela, preliminary plans were made to establish a regional medical library center. The installation, under the joint sponsorship of the Pan American Federation of Associations of Medical Schools and the Organization, would supply a central core of information resources for the biomedical community in South America, would introduce computerized information technology, and would serve as a demonstration and training center in promoting the development of medical library services in Latin America. Deliberations were in progress as to means of financing the center.

Research and Research-Training Centers

To strengthen basic medical science disciplines of schools of medicine and public health, a Regional Training Center for advanced teaching and research training in microbiology was organized by the Institute of Microbiology of the University of Brazil, in Rio de Janeiro, Guanabara, with the assistance of the Rocke-

feller Foundation and the Organization. Studies were made concerning the possibilities of establishing similar centers in pathology and in immunology.

Two consultants were appointed to survey the status of immunology in Argentina, Brazil, Chile, México, and Venezuela. Data were gathered on current research activities in basic and applied immunology, on staff and facilities in institutions in which immunology work was being done, and on the role which information exchange plays among workers in this field. The consultants' report included recommendations bearing on the establishment of research training centers in immunology in Latin America and on the desirability of supporting, with a modicum of finances, specific groups of investigators so as to maintain continuity.

With the participation of the University of São Paulo (Brazil), the U.S. Public Health Service, the W.K. Kellogg Foundation, and the Organization, an International Center for Training in Dental Epidemiology and Research was established in São Paulo and became operative in early 1965. A manual for epidemiological studies on dental caries was being prepared and training of staff had begun; research activities were scheduled to begin in 1966.

Nutrition

The PAHO Scientific Group on Research in Endemic Goiter held its Second Meeting in Cuernavaca, México, in October, in order to review results of research of participating laboratories in the last 2 years and to plan further research. The meeting was attended by 14 participants from 11 laboratories in Brazil, Chile, Colombia, Ecuador, México, Perú, United States of América, and Venezuela. A report of the proceedings was produced and circulated.

The PAHO Coordinated Research Program on Endemic Goiter encompasses studies on (a) the etiology of endemic goiter, focussing on its genetic and environmental parameters; (b) epidemiology, with particular emphasis on methodology in prevalence surveys and on criteria for assessing the extent of the forms in which the disease manifests itself among human populations in Latin America; (c) a number of clinico-physiological correlates of goiter endemicity; and (d) new prophylactic measures.

These studies are based on data from collaborating laboratories in 7 Latin American countries, which are being serviced by the PAHO Reference Laboratory and Training Center for Iodine Determinations, recently es-

established in Santiago, Chile, under a grant from the Williams-Waterman Fund. Among the research projected are investigations to identify presumptive goitrogens in foodstuffs; surveys to yield data of an epidemiological, ecological, and socioeconomic nature; and the testing of intramuscular injections of iodized oil in areas where commercial salt iodization is not feasible, for which a pilot study was set up in Ecuador.

The joint PAHO/WHO Collaborative Study on Nutritional Anemias incorporated a laboratory each in Colombia, Guatemala, México, and Trinidad. The reference laboratory for this study, established at the Venezuelan Institute of Scientific Research, provided training in methodology of research on anemias, undertook the checking of duplicate samples from collaborating laboratories, and provided advisory services on research techniques. Plans were drawn for the selection of laboratories in Argentina, Brazil, Chile, Paraguay and Perú to collaborate in this study.

Protein-calorie malnutrition specifically in relation to its effect on physical and mental development and the effect of nutrition status on work output in adults were among the research activities being continued at the Institute of Nutrition of Central America and Panamá (see under Nutrition, Chapter II, Promotion of Health).

A short-term consultant was sent to Chile to cooperate in the preparation of a research protocol on Biodynamics of Vitamin D in Osteomalacia. The program was prepared and submitted to the U.S. National Institutes of Health.

Deprivation in Psychobiological Development

A special session on Deprivation in Psychobiological Development held during the fourth meeting of the PAHO/ACMR explored development at two levels (a) during a learning situation with characteristic or other changes in molecular, cellular, and neurophysiological parameters; and (b) during deprivations induced early in life by nutrition, psychosocial, and cultural changes.

A number of inferences were drawn, based on the studies under (a) above, reflecting the importance of fundamental processes to the understanding of psychobiological development, even though their bearing on public health practice may not be directly apparent. Evidence supplied by the second set of studies, under (b) above, amplified the bases for orientation on the multiplicity of factors interacting to produce primary-integration dysfunctions in man's behavior.

In reviewing the research needs and opportunities in Latin America in this field, it was concluded that, although situations for studying deprivation problems at molecular-cellular levels exist, other circumstances prevail which are identifiable and which derive from special social and cultural conditions that are unique and researchable. Outstanding examples of research needs and opportunities are mass cultural studies to delineate crucial dimensions of deprivation and critical ages at which these occur; ways in which deprivation may be associated with maternal or parental care; and policies and methodologies of nutrition as these relate to health and child care.

Malaria

Radical cures of malaria caused by *Plasmodium falciparum* and *P. vivax* infections were attempted in Colombia with 3-day treatments with a chloroquine-primaquine-pyrimethamine combination. The treatment showed promise, but it was too early in the study to guarantee the results.

The Insecticide Testing Team working in El Salvador progressed through several stages of testing OMS-33, a promising carbamate insecticide selected from among the series of insecticides submitted to laboratory tests last year. Experimental huts were constructed and utilized in preliminary field trials which were followed by village trials (Stage V of the WHO scheme of field trials of insecticides). Toxicological and operational data were gathered and expanded trials were scheduled because the results continued being promising.

Arbovirus

The arbovirus research and training program underway in México continued striving toward the primary objectives agreed upon in 1961, namely: to study arbovirus diseases from the virological, clinical, epidemiological, and ecological standpoint, with a view to their prevention and control; and to develop competent research investigators qualified in virology in the laboratory as well as in the field. The program is governed by an agreement between the Government of México and the Organization and funded by a grant from the National Institutes of Health, of the U.S. Public Health Service, to the Medical College of Cornell University.

Pre- and postdoctoral trainees were given extensive training in virology, both at Cornell University and in tropical areas of México, the latter at a time of the year when arbovirus activity was at a peak. Trainees become primarily virologists, but they also develop an appreciation of entomology, ornithology, mammalogy, and other areas of zoology. Of the 27 trainees under this program, 25 were from the Americas and 2 from Asian countries. This research training program has not been in effect long enough for predoctoral trainees to graduate, nor to see the fruition of the training of short-term trainees (mostly medical and veterinary students), but 1 of the first trainees returned to a virology center in México City to do arbovirus research, 1 planned to return to a post at a university, and 1 to an institute of tropical medicine.

New knowledge resulting from the research activities of the trainees—discoveries of the presence in México of Venezuelan encephalitis and other arboviruses potentially important to man and domestic animals—was incorporated into the scientific literature. This is only part of the potential long-term scientific productivity of the trainees which will become more apparent in the future.

Other current research concentrated on virus isolations from specimens in México and Central America likely to yield arboviruses, such as mosquitoes, mammals and birds, and on antibody surveys to detect arbovirus activity. Sufficient numbers of specimens from migratory birds had not yet been collected and tested to evaluate the possible role of birds in the intercontinental dissemination of arboviruses.

Rickettsial Zoonoses

The survey for evidence of involvement of human typhus in South American domestic animals was extended to the Cautín province of Chile and the La Quiaca plateau on the Argentina-Bolivia border. In collaboration with national health authorities, animal and some human blood samples were collected and the presence of human typhus was confirmed serologically in both foci, although no cases had been reported for some time in La Quiaca. More tests were conducted at the Rocky Mountain Laboratory of the National Institutes of Health of the U.S. Public Health Service but for conclusive evidence of such involvement further surveys will be needed, preferably at different seasons and in the vicinity of human outbreaks.

Complement-fixation reactions for tick typhus and for Q fever were positive among people sampled on the Argentine-Bolivian border.

Inter-American Investigation of Mortality

The final records for the Inter-American Investigation of Mortality were received and the initial processing of the data was completed. Histories were obtained from over 45,000 deaths in the 12 cities included in the study, namely: La Plata (Argentina), Ribeirão Preto and São Paulo (Brazil), Santiago (Chile), Bogotá and Cali (Colombia), Bristol (England) San Francisco (U.S.A.), Guatemala (Guatemala), México (México), Lima (Perú), and Caracas (Venezuela). Analysis of data for the first year of the study showed wide variations in mortality rates from such causes as cancers of certain sites, arteriosclerotic heart disease, chronic respiratory disease, cirrhosis of the liver, tuberculosis, and maternal causes. Several papers based on the Inter-American Investigation of Mortality were prepared.

Population Dynamics

The Organization convened the II Conference on Population Dynamics, in Washington, D. C., in January 1965. Since 1964 the Organization has served informally as a clearing house on the health aspects of population dynamics, exchanging information with the United States and other interested Governments, foundations, universities, and various international agencies and organizations—the Conference recommended that the Organization continue providing such service.

The Conference also recommended the establishing of research training centers concerning population dynamics and health, and in March a working group met to develop plans for courses on health and population and suggested that projects be established at the School of Hygiene and Public Health of the University of São Paulo, Brazil, and the School of Public Health in Santiago, Chile. Preliminary steps were taken to implement the suggestion.

Occupational Health

In an effort to elucidate the mechanisms by which chronic inhalation of manganese ores induces a schizophrenia-like syndrome followed either by Parkinsonism

or a syndrome similar to that of Wilson's disease, neutron activation analysis was employed to determine levels of manganese in human tissues and body fluids and relate these levels to various stages of toxicity. The Organization continued coordinating this research for which the clinical investigations were done by researchers of the Medical School of the Catholic University in Chile and the neutron activation analysis was carried out at the Medical Research Department of the Brookhaven National Laboratory, in Long Island, New York, U.S.A. Additional studies were carried out in Chile to help elucidate the uptake mechanism involved in manganese metabolism, and parallel investigations of the homeostatic mechanisms which control this trace element were performed in experimental animals.

Radiation

The Institute of Biophysics of the University of Brazil and the Department of Physics of the Catholic University, both in Rio de Janeiro, continued with the biological and physical studies in the country's areas of

high natural background radiation. A PAHO consultant continued coordinating this program, supported by the U.S. Atomic Energy Commission, by means of semi-annual visits to Brazil. The year's investigations indicated that an excessive number of chromosomal aberrations were present in residents of the high background radiation areas. To verify the findings and to delineate the extent and types of these aberrations a travel grant was awarded for a member of the Institute to work with cytogeneticists in the United States.

A second-year grant was approved by USPHS/NIH for the research project, being developed in Venezuela, on the biology and ecology of *Rhodnius prolixus*, using radioisotope tracer techniques to study the effects of radiation on the fertility of the Chagas' disease vector.

The foundations were laid to compare the relative effectiveness of film-badge dosimetry with pocket dosimeters under conditions of continuous high humidity and heat, i.e., in tropical areas. The Office of Civil Defense of the United States of America offered to provide the dosimeters and chargers for the purpose. Preparations were made to establish this program in several countries in Latin America.

VI. PUBLICATIONS AND INFORMATION

PUBLICATIONS

The Organization's program of publications covered a broad selection of technical literature (Tables 38, 39, and 40). This program included the publishing of original material, in Spanish and in English, and of technical texts selected for translation and distribution throughout Latin America.

Special Technical Publications

A major publication of the year was the Spanish translation of the tenth edition (1965) of the American Public Health Association manual *El control de las enfermedades transmisibles en el hombre* (Scientific Publication 120), which was published in a 20,000-copy edition. This Spanish-language 328-page volume, issued for the first time in the same year as the original English text, describes community management of 148 communicable diseases prevalent throughout the world. Most diseases of public health importance were included, with a good representation of the less significant infections which so often present problems in administrative action. This manual was given a wide distribution.

In the field of malaria eradication, 3 publications were issued: the revised second Spanish edition of

Scientific Publication 87, *Manual para el diagnóstico microscópico de la malaria* (the English and Portuguese editions appeared in 1964); *Erradicación de la malaria—Conferencia de Ministros de Salud de Centro América y Panamá* (Scientific Publication 116), which contained the working documents of the meeting held in April 1965 in Washington, D.C.; and the *Informe de los seminarios sobre la misión de los Servicios Generales de Salud en la erradicación de la malaria* (Scientific Publication 118), which contained selected documents of seminars held in Poços de Caldas, Brazil (June-July 1964) and in Cuernavaca, México (March 1965). These publications were given wide distribution to national health and malaria eradication services in Latin America.

To meet the continuing demand, a second printing was issued of the Spanish translation of the basic manual of the U.S. National Tuberculosis Association, *Normas para el diagnóstico y clasificación de la tuberculosis* (Scientific Publication 97). The volume *Tuberculosis* (Scientific Publication 112), published in Spanish, compiled the papers of the Technical Discussions on this subject held at the XV Meeting of the PAHO Directing Council (México, D.F.; 1964) and those of the Regional Seminar on Tuberculosis (Maracay and Caracas, Venezuela; 1964).

A report of previous Technical Discussions, *Control of Gastrointestinal Diseases* (Scientific Publication 100), was issued in second printings in English and Spanish.

Plague in the Americas (Scientific Publication 115) gave a detailed report on the status of this disease.

In the environmental sanitation field, *Utilización de Tuberías plásticas en abastecimientos de agua potable* (Scientific Publication 113) is a compilation of technical papers covering all phases of the subject, presented at the symposium on plastic pipes for water supply, held (1963) in Caracas, Venezuela. The publication *Primer Seminario Latinoamericano de Salud Ocupacional* (Scientific Publication 124) contains the conclusions and recommendations of the seminar and

TABLE 38. SUMMARY BREAKDOWN OF PUBLICATIONS, 1965

Series	Number	Pages	Pressrun
Scientific Publications.....	24	3,129	75,000
Official Documents.....	11	2,399	11,100
Miscellaneous Publications.....	2	96	7,000
Others.....	2	196	5,000
Total.....	39	5,820	98,100

VI. PUBLICATIONS AND INFORMATION

TABLE 39. PUBLICATIONS ISSUED, 1965

Serial number	Title	Pages	Pressrun
<i>Scientific Publications</i>			
43	Las radiaciones ionizantes y sus efectos en la población (2nd printing)	68	3,000
57	CIE—Principios básicos de los cuidados de enfermería (2nd printing)	58	3,000
87	Manual para el diagnóstico microscópico de la malaria (2nd edition)	130	3,000
97	Normas para el diagnóstico y clasificación de la tuberculosis (2nd printing)	86	3,000
100	Control of Gastrointestinal Diseases (Technical Discussions, XIV Meeting of the Directing Council) (2nd printing)	81	1,000
100	Control de las infecciones entéricas (Discusiones Técnicas, XIV Reunión del Consejo Directivo) (2nd printing)	87	1,000
110	Guía para la organización de un departamento de registros hospitalarios (2nd printing)	92	5,000
111	Health Planning—Problems of Concept and Method (CENDES Report)	76	1,000
111	Problemas conceptuales y metodológicos de la programación de la salud (Informe de CENDES)	84	3,000
112	Tuberculosis—Discusiones Técnicas y Seminario Regional	151	3,000
113	Tuberculosis plásticas—Utilización en abastecimientos de agua potable	175	2,000
114	Reported Cases of Notifiable Diseases in the Americas, 1963	62	1,000
114	Casos notificados de enfermedades de declaración obligatoria en las Américas, 1963	63	2,000
115	Plague in the Americas	159	1,000
116	Erradicación de la Malaria—Conferencia de Ministros de Salud de Centro América y Panamá	68	1,000
117	Enfermería—Recopilación de Trabajos No. 2	178	3,000
118	Informe de los Seminarios sobre la Misión de los Servicios Generales de Salud en la Erradicación de la Malaria	134	8,000
119	Política de la Investigación Científica en la América Latina	86	2,000
120	El control de las enfermedades transmisibles en el hombre (10th edition)	328	20,000
121	Segundo Seminario Latinoamericano sobre la Enseñanza de la Odontología	398	2,000
122	Pedagogía médica	349	2,000
123	Environmental Determinants of Community Well-Being	68	2,000
124	Primer Seminario Latinoamericano de Salud Ocupacional	84	2,000
125	Travelling Seminar on Organization and Administration of Schools of Public Health in the Eastern Mediterranean	64	1,000
<i>Official Documents</i>			
59	Financial Report of the Director and Report of the External Auditor (1 January–31 December 1964)	81	350
59	Informe Financiero del Director e Informe del Auditor Externo (1 enero–31 diciembre 1964)	81	350
60	Proceedings of the XV Meeting of the PAHO Directing Council, XVI Meeting of the WHO Regional Committee for the Americas	367	1,000
60	Actas de la XV Reunión del Consejo Directivo de la OPS, XVI Reunión del Comité Regional de la OMS para las Américas	375	1,000
61	Proposed Program and Budget Estimates: PAHO 1966; WHO, Region for the Americas, 1967; and PAHO, Provisional Draft, 1967	258	400
61	Proyecto de Programa y Presupuesto: OPS, 1966; OMS, Región de las Américas, 1967; y OPS, Anteproyecto, 1967	258	400
62	Informe Final, 52a Reunión del Comité Ejecutivo—Final Report, 52nd Meeting of the Executive Committee (Bilingual edition)	46	1,600
63	Annual Report of the Director, 1964	278	2,000
63	Informe Anual del Director, 1964	295	2,000
64	Précis Minutes, 52nd Meeting of the PAHO Executive Committee	176	1,000
64	Actas resumidas de la 52a Reunión del Comité Ejecutivo de la OPS	184	1,000
<i>Miscellaneous Publications</i>			
79	Health Trends in the Americas	47	5,000
79	Tendencias de la Salud Pública en las Américas	49	2,000

TABLE 39. PUBLICATIONS ISSUED, 1965—Continued

Serial number	Title	Pages	Pressrun
	<i>Other Publications</i>		
Informe sobre Enfermería No. 4	Seminario sobre Adiestramiento de Auxiliares de Enfermería.....	147	3,000
Nursing Reports No. 5	Seminar on Nursing Services: Planning for Continuity in Nursing Care.....	49	2,000

summaries of the working documents on the status of occupational health in the participating countries—Argentina, Bolivia, Brazil, Chile, Colombia, México, Perú, and Venezuela.

The study *Health Planning—Problems of Concept and Method* (Scientific Publication 111), prepared by the Center for Development Studies, in Caracas, Venezuela, in collaboration with PASB, was issued in English and Spanish.

An original text on medical pedagogy entitled *Pedagogía médica* (Scientific Publication 122), was published for distribution throughout Latin America. Another publication in the professional education field was the report of the *Travelling Seminar on Organization and Administration of Schools of Public Health* (Scientific Publication 125), which compiled information on the visits of Deans of United States of America and Canadian schools of public health to Alexandria, Egypt; Beirut, Lebanon; and Ankara, Turkey.

In the field of research, 2 publications were issued. The first was *Política de la Investigación Científica en la América Latina* (Scientific Publication 119), a report of the PAHO Study Group on Biomedical Research Policy, prepared for the Fourth Meeting of the PAHO Advisory Committee on Medical Research (this volume appeared in English in early 1966 under the title *Science Policy in Latin America*). The second publication was *Environmental Determinants of Community Well-Being* (Scientific Publication 123), which contains the transcript of the Special Session held during the Third Meeting of the PAHO Advisory Committee on Medical Research (1964).

A second printing was issued of *Las radiaciones ionizantes y sus efectos en la población* (Scientific Publication 34) in order to meet the continuing demand for this manual, originally published as *Public Exposure to Ionizing Radiations* by the American Public Health Association.

Segundo Seminario Latinoamericano sobre la Enseñanza de la Odontología (Scientific Publication 121) contains a compilation of the working papers of the Second Seminar on the Teaching of Dentistry, sponsored by the Organization.

In the field of nursing, a second compilation of current nursing articles of special interest in Latin America was issued under the title *Enfermería—Recopilación de trabajos No. 2* (Scientific Publication 117) and a second printing was made of *CIE—Principios básicos de los cuidados de enfermería* (Scientific Publication 57), a translation of the International Council on Nursing guide to the basic principles of nursing care.

The publications on health statistics included *Reported Cases of Notifiable Diseases in the Americas, 1963* (Scientific Publication 114), in both English and Spanish. A reprint was issued of the *Guía para la organización de un departamento de registros hospitalarios* (Scientific Publication 110), a translation of the Ameri-

TABLE 40. PUBLICATIONS DISTRIBUTED, 1965

Type of publication	Number of copies distributed	Total
Scientific Publications (PAHO).....	60,507	
Official Documents (PAHO).....	7,789	
Miscellaneous Publications (PAHO)...	4,295	
<i>Boletín de la Oficina Sanitaria Panamericana</i>	123,180	
Other PAHO Publications.....	34,899	
Total PAHO Publications.....		230,670
WHO Publications.....		28,418
Publications from other organizations.		7,725
Grand total.....		266,813

VI. PUBLICATIONS AND INFORMATION

can Hospital Association's guide to the organization of a hospital medical records department, which was in great demand in Latin America.

Periodical Publications

In the *Boletín de la Oficina Sanitaria Panamericana*, which completed its 44th year of publication, emphasis continued to be placed on selecting material of greatest usefulness to the public health administrator in the Americas. The journal seeks also to reflect the philosophy of public health and the goals of the Organization.

Twelve regular issues were published, with a total of 1,144 pages, which included 79 original articles, or approximately 70 per cent of the total. The subjects featured were environmental sanitation and water supply, tuberculosis, professional education, zoonotic diseases, maternal and child health, dental health, including fluoridation of water supplies, health statistics, nutrition, radiological health, organization of health services, nursing, medical care and hospitals, and a series of articles on the epidemiology and control of communicable diseases. The average monthly press-run was 11,000 copies. In addition, a special supplement published in January contained the 92-page report entitled *Las Condiciones de Salud en las Américas, 1961-1962*, which compiled basic data on health conditions throughout the Hemisphere. Many papers published were selected from the ones prepared for PAHO/WHO-sponsored technical meetings and seminars. The program to publish simultaneously original articles in English in the *Bulletin of the World Health Organization* and in Spanish in the *PASB Boletín* was continued.

The editorials included those on the World Health Day theme, "Smallpox—Constant Alert," and others on medical education, the new PAHO Headquarters building, and the inaugural ceremonies held at the XVI Meeting of the Directing Council.

The "Actualidades médicas y de salud" section included abstracts of articles published in other journals on a wide variety of subjects, including nutrition, professional education and training, medical care, maternal and child health, tuberculosis, mental health, rheumatism and cardiopathies, acute infectious diseases, cancer, and venereal diseases. In this section, the series of abstracts on nutrition, selected from *Nutrition Reviews*, was a special feature. Reviews of recently published books on public health also appeared regularly in this section.

In the section "Información General," 73 summaries and writeups were published, along with the regular monthly Calendar of Meetings and status of the *Aedes aegypti* campaign in the Americas. In this section, summary reports on technical meetings sponsored by the Organization, courses, and seminars, as well as of the meetings of the Governing Bodies, were regular features. News items on public health activities of the countries and of the Organization were published regularly. In the April issue, the entire section was devoted to World Health Day.

Other information carried each month included the bibliographic notes and the list of health authorities in the Americas.

The *Weekly Epidemiological Report* included tables showing the number of reported cases of the 6 quarantinable diseases and the geographic location of the cases reported in the Americas. In addition, summaries of the progress of the eradication program for *Aedes aegypti* and distribution of reported cases of selected diseases were given by country. The epidemiological notes presented current information on communicable disease, on epidemic outbreaks, and on the incidence of diseases of special interest in the Region. Poliomyelitis, hemorrhagic fever, infectious hepatitis, plague, dengue, louse-borne typhus, encephalitis, smallpox, and changes in the International Sanitary Regulations were among the topics included.

Official Documents

In the Official Documents series, the volumes published in English and Spanish were: *Financial Report of the Director and Report of the External Auditor, 1964* (Official Document 59), *Proceedings of the XV Meeting of the PAHO Directing Council* (Official Document 60), *Proposed Program and Budget Estimates, 1966-1967* (Official Document 61), the 1964 *Report of the Director* (Official Document 63), and *Précis Minutes of the 52nd Meeting of the PAHO Executive Committee* (Official Document 64). Changes were introduced in the 1964 *Report of the Director* to further adapt the document, for ease of comparison, to the program and budget document. The number of pages of this *Report* was 252 (220 in 1963).

The *Final Report of the 52nd Meeting of the PAHO Executive Committee* (Official Document 62) was published in a bilingual edition.

Other Publications

In the series Nursing Report, 2 more publications were issued: No. 4, *Seminario sobre Adiestramiento de Auxiliares de Enfermería*, and No. 5, *Seminar on Nursing Services: Planning for Continuity in Nursing*.

Informational pamphlets published during the year included English and Spanish editions of the booklet *Health Trends in the Americas* (Miscellaneous Publication 79).

INFORMATION

Mass-Media Coverage

Press

A total of 218 news releases were put out during the year, 5 more than in 1964. The increase was in the English and Spanish releases, since those distributed in Portuguese equalled the previous year's figure.

The official opening of the new Headquarters building on 27 September was the Organization's top news story in 1965. Hence it was around this event that the PASB public information office centered its major activity for the year. A total of 29 releases were issued in English alone, either about the opening or about events that formed part of it, including the Directing Council Meeting. A "mat" feature on the new Headquarters was sent to 2,000 papers in the United States of America, 900 in Canada, and 500 in the 19 countries of Spanish-speaking America. Text and glossy photos were sent to 200 Brazilian editors.

The publications issued in connection with the inauguration included a flyer, calling on Western Hemisphere nations to donate art and craft to the new Headquarters, and a souvenir booklet, light on text and heavy on photos displaying the beauty of the new building. Though printed in 1,000 English copies and intended for distribution only during the opening ceremonies, the booklet was revised for a second English printing of 10,000 copies, and a first Spanish and Portuguese printing of 5,000 and 1,000 copies respectively. The Organization also had printed a dedication special of the *P.I. Newsletter* and, as a souvenir for visitors, 12,000 color post cards of the Headquarters building captioned in English and 6,000 in Spanish.

Because more releases on meetings were distributed,

the meetings were covered by Washington, D.C., newspapers better than in previous years. Local dailies gave space to meetings on malaria, medical care, hospital planning, venereal diseases, and international transportation of human remains; the venereal diseases meeting received the most coverage in newspaper space and air time.

Five issues of the *P.I. Newsletter*, in English and Spanish, were put out. Because of the demand, the English pressrun was increased from 5,000 to 6,000, a number equal to the Spanish pressrun.

Radio and Television

Seven short films and 1 radio tape on the new building were released to area television and radio stations and a 6-minute television documentary from groundbreaking to opening ceremonies, entitled "Dedication of Health Headquarters," was produced for 50 Latin American outlets. Prints were airshipped to countries so that they could be shown while the delegates of countries were attending the Meeting of the Directing Council. The film also met these other needs: It was given to delegates as a memento of a historic event in Western Hemisphere public health; it is an audio and visual record for the Organization's Archives; and it was shown preceding the festival of Western Hemisphere health films, one of the events held as part of the opening ceremonies.

A 60-second film entitled "Michigan's Kellogg Foundation Contributes to Pan American Health" was also produced and distributed to 19 stations in Michigan.

Crews from Washington, D.C., television stations filmed the opening ceremony for their September 27th news programs. The Bureau also collaborated with the United States Information Agency in the production of a film for *Panorama Panamericano*, a weekly show televised throughout Latin America.

One result of the publicity given the new Headquarters was evidenced by the many newsmen, architects, public health officials, civic groups, and national and international students who asked to see the new building.

Other Activities

The 1965 World Health Day theme was "Smallpox—Constant Alert". As part of the program, the District of Columbia Health Department set up a vaccination clinic in the main lobby of the PAHO previous Head-

quarters, at Dupont Circle. The general public was invited to come for vaccination. In public ceremonies, the Director of the Organization commended the D.C. Health Department for its role in helping center area public attention on World Health Day.

Nation and Hemisphere-wide focus came through coverage given to messages issued by the President of the United States of America, the Director of the World Health Organization, high health officials in Latin America, and the Director of the Pan American Sanitary Bureau. To further focus the attention of area residents on the day, cards and posters were also used in schools, libraries, local transit busses, and places of heavy traffic.

World Health Day information was sent out in 5,000 kits in English, 5,000 in Spanish and 1,250 in Portuguese.

Inquiries for nontechnical information answered during 1965 totaled 1,892. Also 136,000 pieces of literature were sent out in about 45,000 kits. Both figures increased considerably over the 1964 amounts.

A total of 95 films were loaned to schools, colleges, citizen committees, government agencies, and other organizations interested in public health.

The program of international information, aimed at the Organization's staff both in Washington and in the field, was continued.

One of the most important publicity projects undertaken in 1965 was the making of "Health Comes First," the first film produced by the Bureau on the Organization's work. Some 200 of the most interesting pictures on file were used to make the film. Scored for dramatic music, the film will be printed in 3 languages.

Visual Aids

Six teaching filmstrips were finished and distributed—on sampling and testing drinking water, filtering installations for small water-treatment plants, etiology and epidemiology of schistosomiasis, introduction to bacteriology, and 2 on sanitary land-fill. Three additional filmstrips were being prepared for production, respectively on backsiphonage and cross-connections in plumbing systems, sanitary aspects of dug wells, and fundamental aspects of the human blood groups. The narratives for a filmstrip dealing with schistosomiasis control measures and for a comprehensive filmstrip in two parts dealing with the diarrheal diseases were completed.

A special exhibit on diarrheal diseases was prepared and displayed during the annual meeting of the American Public Health Association, at Chicago, Illinois, and an exhibit showing highlights of the history of the Pan American Sanitary Bureau was designed and displayed during and after the inaugural ceremonies at the new Headquarters building. One exhibit on malaria eradication was prepared and displayed during the April meeting of the Ministers of Health of Central America and Panamá, in Washington, D.C., and 2 exhibits on environmental sanitation were displayed at meetings held in South America.

A total of 639 maps and charts were prepared, the Bureau's files were increased with the addition of 402 projection slides and 1,149 negatives of program activities, and 1,827 prints were distributed to WHO headquarters, Zone and Field Offices and interested periodicals and civic groups.



As part of World Health Day activities arrangements were made for public smallpox vaccinations—administered at the building which for 15 years served as PAHO Headquarters. The Chief of the District of Columbia branch of the U. S. Communicable Disease Center vaccinates one of the District Commissioners.

Technical advisory services were provided to the SUDENE (Superintendency of Development of the Northeast), the agency responsible for the social and economic development of 10 northeastern states of Brazil. The ensuing report included recommendations for building, equipping, and staffing an audiovisual center in the University of Recife.

Library

The highlight of 1965 was the transfer of the Library to the modern, functional quarters in the new Headquarters building. Although the Library now has ample space for future expansion there, the collection was reviewed in order to better reflect the needs of the staff. Of the 5,331 items discarded, 2,500 pieces of literature were given to other libraries at the time of the review.

Collecting and coordinating the materials in the health-related sciences and correlating these materials with the needs of the staff members both at Headquarters and in the field continued being the principal

functions of the Library. The services of the Library can be extended with minimum delay to the Zone Offices and the staff in the field. This is possible through its lending services, the xeroxing of material, the compilation of bibliographies, the transmission of publications, and subscriptions to periodicals.

The collection was increased by 9,246 pieces of literature: 1,868 books, 299 pamphlets, 4,425 issues of periodicals, and 2,654 WHO documents and publications. In addition, 98 Agreements were added to the Archives. The acquisition of new periodicals was limited to 21 titles. A total of 11,989 cards describing the new literature was added to the catalogs.

Because during July and August the Library collection was packed and moved into the new building, very limited reference services were supplied during those months. However, the 3,262 reference questions received were answered. A total of 4,655 publications were circulated to staff members and lent to other libraries. Upon request, 3,689 pages of Xerox copies were supplied principally to staff members working in the Zones and in the field.



Representatives of the Delegations of the Member Countries and personnel of the Pan American Sanitary Bureau who attended the XVI Meeting of the Directing Council.

VII. ORGANIZATION AND ADMINISTRATION

GOVERNING BODIES

The Governing Bodies of PAHO held the following meetings in Washington, D.C.: the 52nd Meeting of the Executive Committee from 19 to 23 April; the XVI Meeting of the Directing Council, from 27 September to 8 October; and the 53rd Meeting of the Executive Committee on 8 October.

Directing Council

The following Governments were represented at the XVI Meeting of the Directing Council (XVII Meeting of the Regional Committee of WHO for the Americas): Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, France, Guatemala, Haiti, Honduras, Jamaica, Kingdom of the Netherlands, México, Nicaragua, Panamá, Paraguay, Perú, Trinidad and Tobago, United Kingdom, United States of America, Uruguay, and Venezuela. The Government of Canada designated official observers. The Director-General of the World Health Organization also attended, as did observers of the Organization of American States, the United Nations, the United Nations Children's Fund, and the International Labor Organization. In addition, there were observers from 21 nongovernmental organizations and other interested institutions. The representative of Brazil was elected President of the Meeting and the representatives of Columbia and of Honduras were elected Vice-Presidents.

The inaugural session, which was also the inauguration of the new PAHO Headquarters building, was held in the Council Chamber on 27 September, under the chairmanship of the Minister of Public Health and Welfare of México, acting President of the XVI Meeting of the Directing Council. In addition to the Delegations of the Member Countries, this session was also attended by members of the Diplomatic Corps and rep-

resentatives of national and international organizations.

Speeches were delivered by the acting President, the Secretary of Health, Education and Welfare of the United States of America, the Secretary General of the Organization of American States, the Director-General of the World Health Organization, the President of the W.K. Kellogg Foundation and the Director of the Pan American Sanitary Bureau.

Several scientific and cultural activities connected with the dedication of the new Headquarters building were held, and donations of works of art for the building were made by several Governments.

The Council held 15 plenary sessions and a closing session; the General Committee, 6 sessions; and the Committee on Credentials, 2 sessions. One day was devoted to the Technical Discussions. Forty resolutions were approved.

Among the most important items examined in the course of the meeting, in addition to the Report of the Director for 1964, was the Proposed Program and Budget Estimates for 1966 and 1967; the status of malaria eradication in the Americas and the financing of this program; the status of smallpox eradication in the Americas; the pollution of air and water in Latin America; the aspects of health related to population dynamics; the research policy and the program of PAHO; national health planning; the relationship between social security medical programs and those of Ministries of Health or other official health agencies; hospital organization and other health activities; the report of the Director on the Third Annual Meetings of the Inter-American Economic and Social Council at the Expert and Ministerial Levels; the international transportation of human remains; and a progress report on the program of administrative rationalization in the PASB.

After a detailed examination of the proposed program and budget of the Pan American Health Organization for 1966, the Council established a budget ceiling for that year at \$8,080,000 in accordance with

the recommendation of the Executive Committee at its 52nd Meeting.

The Council took note of the report on nongovernmental financial support for health activities, and of the Agreement signed between the Director-General of the World Health Organization and the Director of the Pan American Sanitary Bureau on 15 October 1964 regarding the World Health Foundation of the United States, and instructed the Director to continue to cooperate in the plan for establishing additional foundations for health activities in other countries.

On examining the report on the status of malaria eradication in the Americas, the Council voiced its satisfaction with the continued interest of the Governments in providing the resources necessary for continuing the campaign, and expressed its thanks to WHO, UNICEF, the Government of the United States of America, and PAHO for the assistance rendered during the 1964 campaigns, and at the same time reiterated the need for increased international assistance, both technical and financial. The Council stressed the importance of voluntary contributions to the PAHO Special Malaria Eradication Fund and the WHO Malaria Eradication Special Account, and urged the Governments to continue making their generous contributions. In addition, it recommended that the Bureau continue its negotiations with international credit institutions with a view to having them include in their policy the financing of malaria eradication programs through long-term low-interest loans. The Council also took note of the observations and conclusions of the Seminars on The Role of the General Health Services in the Eradication of Malaria and those contained in the report of the PAHO Advisory Committee on Malaria Eradication, and recommended that they be put into practice as soon as possible.

With regard to *Aedes aegypti* eradication, the Council declared Argentina free of the vector, and urged the Governments of countries and areas which were still infested to give the highest priority to their eradication campaigns, and recommended that those which had already eradicated the vector maintain active surveillance programs to prevent reinfestation. It also urged the Director to adopt appropriate measures to achieve the goal of eradication in the Americas as soon as possible.

The Council declared smallpox eradication to be one of the major objectives of the Organization. It recommended to the Governments the continuance of national vaccination campaigns, together with case-finding, maintenance and surveillance activities, and epidemio-

logical research. It urged the Bureau to continue to assist the national programs and requested the Governments which are in a position to do so, to supply other countries in need, not only with smallpox vaccine, but also with material resources and the services of specialists. It further asked the Director to prepare an estimate of the financial and other resources needed for smallpox eradication, and to submit that estimate to the 54th Meeting of the Executive Committee and the XVII Pan American Sanitary Conference.

The Council recommended to the Director that, in cooperation with the Governments, he develop a program of epidemiological research on epilepsy, and continue the study of the legal and social aspects of the disease.

The Council made a detailed examination of the report of the Director on the growing significance of air and water pollution problems in Latin America and their serious repercussions on the health and social and economic welfare of the population. It endorsed the proposals for technical assistance presented in the report, and recommended to the Governments that they give proper attention to these problems. It also urged the Director to make studies on the cost of control practices and to use Organization resources to determine the best methods for water treatment in accordance with the economic and operational capacities of the people to be protected, and within the financial and administrative capacity of the Governments concerned. It also requested that provision be made for the collection of such scientific information on the health and economic implications of air and water pollution and remedial practices as might be helpful and its distribution to the Governments.

The Council considered Resolution WHA18.49 of the Eighteenth World Health Assembly on health aspects of the world population situation and instructed the Director to provide technical advice in that regard, cooperate with the Inter-American Committee of the Alliance for Progress (CIAP) in the studies assigned to it, conduct studies on population dynamics related to the PAHO program, and support professional training as appropriate.

The Council also recorded its satisfaction that PAHO and WHO were collaborating in developing a coordinated research program for the Americas aimed at achieving a harmonious integration of the health, population growth, and community development components of national efforts to raise the standard of living throughout the Region. It also endorsed the programs and research studies for measuring present and future

requirements of medical and other professional and auxiliary personnel, as well as the establishment of Pan-American faculty and research training centers. In addition, the Council noted with satisfaction the recommendations of the PAHO Advisory Committee on Medical Research, asked the Governments to establish a permanent national fund for research on public health problems, and requested the Director to provide technical assistance in the organization of National Scientific and Technical Research Councils.

The Council thanked the countries of Central America and Panamá for their valuable help, through INCAP, in solving the problem of malnutrition not only in those countries but also in other countries in the Americas and throughout the world, and recommended to the Director to continue giving all possible technical and financial support to INCAP.

The Council expressed satisfaction for the promptness with which the Bureau had collaborated with Governments in implementing Resolution WHA18.36, approved at the last World Health Assembly, regarding the need for quality control of pharmaceutical products, and recommended that PASB continue studies on the possibility of establishing international reference laboratories for the analysis of pharmaceutical preparations. It also drew to the attention of the Governments the importance of the recommendations on quality and cost of essential drugs contained in the Final Report of the Working Party of the Task Force on Health (Washington, D.C.; 1963).

The Council recommended that the Bureau continue to promote research for the improvement of national health planning, and that it study the possibility of establishing a Pan American Center for Health Planning to act as a focal point for this kind of activity in the Hemisphere.

The Council examined the report of the Director on the Third Annual Meetings of the Inter-American Economic and Social Council (IA-ECOSOC) at the Expert and Ministerial Levels (Lima, Perú; 1964) and expressed its satisfaction with the recommendations approved on foot-and-mouth disease, rural and urban water supply, health investments, and requests for international loans for land settlement, road building, urbanization, and other programs. The Council instructed the Director to continue to develop and strengthen relations between the Organization, IA-ECOSOC, and CIAP; urged the Governments to include representatives of the Ministries of Health in their delegations to annual ECOSOC meetings; and endeavor to have included in the agendas of those meetings specific

items concerning the participation of the health sector in the dynamic process of development of the countries of the Americas.

The Council took note of the report of a study group on relations between the social security medical programs and those of Health Ministries, and instructed the Director to promote such relations through studies, diffusion of knowledge, advisory services, educational programs, and joint meetings between medical authorities and senior officials of both health ministries and social security institutions, in order to achieve the maximum degree of coordination in the provision of medical care.

The report of the advisory committee on planning of hospitals and health facilities was also examined. The Council recommended that the Pan American Sanitary Bureau, within the limitations imposed by program priorities, expand its cooperation with the countries and international agencies in the matter of planning and organization of national health services, personnel training, the incorporation of those subjects into the teaching programs of medical schools, and the costing and financing of various medical care systems, including independent and semi-independent services, as well as better use of those resources. It also recommended that the Bureau strengthen its working relations with public and private international agencies active in this field, with a view to ensuring that the planning of hospitals and other health facilities may occupy its appropriate place in medical care programs and consequently in national health programs.

The Council took note of the report of the Director on the international transportation of human remains and requested that a final draft of Standards for the Americas be prepared and transmitted to the Governments for review and comment at the earliest possible time, in order to submit it to the Executive Committee for its consideration and recommendations for action.

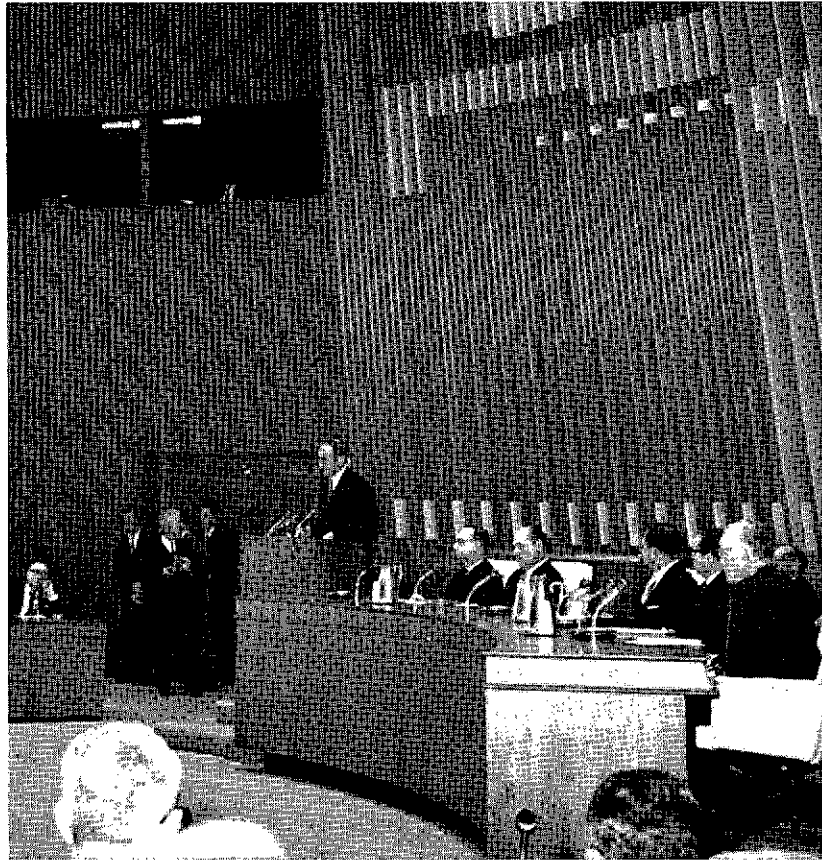
In other resolutions, the Council took note of the report on preparations for holding a meeting to formulate a policy for the training of auxiliary personnel; of the several resolutions of the 35th Meeting of the WHO Executive Board and of the Eighteenth World Health Assembly of interest to the Regional Committee; and of the procedure for the presentation of reports to the Directing Council, and in this regard recommended that the Director continue the project evaluations begun in recent years for the purpose of providing the Governing Bodies with an ever clearer account of the progress made in developing the programs in which the Organization collaborates with the Governments.



In behalf of the Americas, the Secretary of Public Health and Welfare of México, acting President of the XVI Meeting of the Directing Council, accepts the key of the new Headquarters of the Pan American Health Organization from the



Director of the Bureau. The Secretary of Health, Education, and Welfare of the United States of America addressing the inaugural session of the Meeting, on 27 September 1965. Partial views of the inaugural session.



The Council further decided to establish official relations with the Pan American Federation of Associations of Medical Schools, as a nongovernmental organization representing medical schools in the Americas; it authorized the Director to develop with the Federation, to the extent that financial and budgetary limitations allow, cooperative activities of mutual interest aimed at strengthening medical education programs in the Americas.

With regard to financial and administrative matters the Council approved the Financial Report of the Director and the Report of the External Auditor for 1964, and recommended that the Director continue the policy of prudent administration in maintaining budgetary expenditures within income. The Council also approved the Proposed Program and Budget of the World Health Organization for the Region of the Americas for 1967, for transmittal to the Director-General of WHO. It examined the Provisional Draft of the Proposed Program and Budget of PAHO for 1967 and requested the Executive Committee, at its 54th Meeting, to make a careful review of it and to submit its recommendations to the XVII Pan American Sanitary Conference.

The Council also noted the report on the collection of quota contributions. In view of the progress made in establishing plans for the payment of arrears within a specified period by countries which would be affected by the application of Article 6 of the PAHO Constitution, which provides for the suspension of voting privileges of Governments in arrears in an amount exceeding the sum of their quotas for 2 full years, the Council decided to grant them the right to vote at the meeting.

The Council expressed its appreciation to the Government of the United States of America for its gift of land and to the W.K. Kellogg Foundation for the grant of money which permitted the construction of the new Headquarters building. It also thanked the Permanent Subcommittee on Buildings and Installations for its valuable assistance in the prosecution of all activities relating to the construction of the building and requested it to continue to assist the Director on all matters concerning the Headquarters establishment. The Council also authorized transfers from the Building Fund of PAHO to the Special Fund for Health Promotion under such conditions and in such amounts as may be authorized by the Executive Committee.

After examining the report regarding administrative rationalization in the Pan American Sanitary Bureau, the Council requested that efforts to effect economies in administration through the recentralization of admin-

istrative activities and the introduction of data processing techniques be continued. The Council also took note of the various amendments to the Staff Rules of the PASB, already adopted by WHO.

The Council approved several amendments to the Constitution of PAHO, by virtue of which the Pan American Sanitary Conference shall meet every 4 years at Headquarters although the Conference may meet in any Member Country, at the invitation of the Government concerned and provided that the Conference or the Directing Council accepts the invitation. The Rules of Procedure of the Directing Council were amended to provide that the Council shall meet normally at Headquarters. It was further decided that the Executive Committee shall be officially represented by its Chairman, or any other member designated by the Committee, at future meetings of the Directing Council and of the Pan American Sanitary Conference.

The Council unanimously approved the Annual Report of the Chairman of the Executive Committee and commended him and the other members of the Committee for the work accomplished. The report dealt with the activities of the Committee during the period September 1964 to September 1965 and the resolutions adopted during that time.

The Governments of Ecuador and Guatemala were elected to the Executive Committee on the termination of the terms of office of Costa Rica and the United States of America.

Technical Discussions. The Council devoted the first day of October to the discussion of the topic "Methods of Improving Vital and Health Statistics."

The United States Representative acted as Moderator, the Representative of Colombia as Rapporteur, and the Chief, Health Statistics, PAHO, as Technical Secretary.

The Council examined the Final Report on the Technical Discussions in plenary session and recommended to the Organization and to the Governments that efforts be made immediately to implement the recommendations of the report aimed at producing satisfactory statistics for the planning and administration of health programs.

The topic selected for the Technical Discussions to take place during the XVII Pan American Sanitary Conference, in 1966, was "Means for Promoting and Making Effective Coordination between the Services and Programs of Ministries of Health, Social Security Institutes, and Other Institutions that Conduct Activities Related to Health."

Executive Committee

The 52nd Meeting of the Executive Committee was held from 19 to 23 April; present were the representatives of Brazil, Costa Rica, Jamaica, México, Panamá, United States of America, and Venezuela. Observers from Cuba, Perú, Kingdom of the Netherlands, and the Organization of American States also attended.

The Committee made a detailed study of the proposed program and budget of PAHO for 1966 and recommended to the Directing Council that it establish its level at \$8,080,000. It also examined various technical, financial, and administrative reports which it submitted to the Council for consideration. During this meeting a working party was established to study the organization, structure, and place of the meetings of the Governing Bodies of PAHO. The report of the working party, together with the modifications introduced by the Committee, was transmitted to the Council and served as the basis for the modifications subsequently introduced by the Council into the Constitution and the Rules of Procedure.

The 53rd Meeting of the Executive Committee, held on 8 October, was attended by representatives of Ecuador and Guatemala (new members) Brazil, Jamaica, México, Panamá, and Venezuela. The Representative of Brazil was elected Chairman, and the Representative of Panamá Vice-Chairman. The Chairman of the Executive Committee was authorized to fix the date for the 54th Meeting in agreement with the Director of the Pan American Sanitary Bureau.

COORDINATION WITH INTERNATIONAL AGENCIES

The Organization continued to strengthen its working relations with the international and inter-American organizations that assist in the economic and social development of the countries of the Americas.

Special mention deserves to be made of the close ties with the Organization of American States and its organs (OAS Council, Pan American Union, Inter-American Conference, Inter-American Economic and Social Council), as well as with the Inter-American Committee of the Alliance for Progress (CIAP). The Organization was represented at the Second Special Inter-American Conference; held in Rio de Janeiro, Brazil, in November. The Organization continued to be represented at the CIAP meetings at which national authorities and representatives of international credit agencies examine the countries' programs of economic and social development as well as sectoral programs. As in 1964, the Organization was the only nonfinancial agency represented at such meetings. CIAP supported the financing of foot-and-mouth disease control programs, and at the XVI Meeting of the Directing Council of PAHO the CIAP Chairman stressed the importance of health in development programs.

Relations with the Inter-American Development Bank continued to grow. A start was made on the preparation of a joint-action program to strengthen the health-sector activities of the Member Countries within the



53rd Meeting of the PAHO Executive Committee.

framework of their national socioeconomic development plans. In addition to providing financial assistance to urban and rural water supply programs, the IADB broadened its policy, to include loans for medical education, foot-and-mouth disease control, and biological products laboratories, and was examining the possibility of making loans for the construction and equipping of hospitals and other health institutions.

Greater participation in health activities by the United Nations Special Fund was obtained through the World Health Organization. Cooperation with the Economic Commission for Latin America (ECLA), the Latin American Institute of Economic and Social Planning, and the specialized agencies of the United Nations was increased. Working relations with UNICEF continued to benefit national health programs. The Bureau was represented at the Latin American Conference on Childhood and Youth in National Development, which was sponsored by UNICEF in cooperation with other United Nations specialized agencies. The Conference dealt with the planning of programs aimed at improving the living conditions of children and young persons.

HEALTH LEGISLATION

At the XV Meeting of the Directing Council (México City, 1964) the Delegation of the United States of America suggested that the Bureau collect information on the legislation in force in the Americas on the international transportation of human remains.

This information was submitted to the 52nd Meeting of the Executive Committee (Washington, D.C.; 19-23 April 1965), which in Resolution XVIII requested the Director to entrust the study of the matter to an advisory group and submit the results to the next meeting of the Directing Council. The report of the advisory group, which established the bases for regulations on the transportation of human remains in the Americas, was approved by the XVI Meeting of the Directing Council (27 September-8 October) in Resolution XXXVI, which also requested the Director to prepare a final draft for transmittal to the Governments.

Pursuant to that Directing Council resolution the Organization appointed an Expert Committee on the International Transportation of Human Remains, composed of members of the public health or consular services of 7 American countries, which met in Washington, D.C., from 13 to 15 December 1965. Representatives of

the Technical Unit on Tourism of the Organization of American States and of the National Funeral Directors Association of the United States also attended this meeting.

After defining "international transportation of human remains" and "impervious coffin," the Expert Committee approved a general declaration and drafted provisions governing the documentation to accompany human remains, health and shipping requirements, and modes of transportation.

The Chairman of the Expert Committee was the Chief of the Quarantine Division of the United States Public Health Service. The report of the meeting was distributed to the Governments for review and comment.

ADMINISTRATIVE MANAGEMENT

Headquarters Building

The construction of the new Headquarters building of the Pan American Health Organization was completed in August, at which time the Washington staff moved into their new offices. The official inauguration took place at the opening of the XVI Meeting of the Directing Council, on 27 September.

Budget and Finance

The total amount of PAHO/WHO funds budgeted for 1965 was \$17,345,690, representing an increase of 6.89% over the previous year (Table 41).

The amount available from all funds was about 105% of the amount budgeted, with variations according to fund. Among the funds that come to the Bureau through PAHO, those of the latter's Regular Budget and of the Special Fund for Malaria Eradication, as well as the OAS contribution from its Program of Technical Cooperation, were 100% available. The contributions to the Community Water Supply Fund were lower than the budgeted figures. However, the funds available from grants for PAHO and for INCAP were greater than the amounts shown in the budget, since at the time of budget preparation only known grants had been included.

Total PAHO/WHO obligations in 1965 amounted to \$16,666,504, representing an increase of 10.63% over

TABLE 41. PAHO/WHO FUNDS: AMOUNTS BUDGETED, AVAILABLE, AND OBLIGATED, 1965

Source of funds	Amount of budget 1965 *	Increase or decrease from 1964	Amount available 1965	Amount of obligation 1965	Increase or decrease from 1964
	<i>U.S. dollars</i>	<i>Percent</i>	<i>U.S. dollars</i>	<i>U.S. dollars</i>	<i>Percent</i>
Pan American Health Organization					
Regular Budget.....	7,190,000	9.60	7,190,000	7,189,494	15.00
Special Malaria Fund.....	1,897,773	-25.62	1,897,773	1,577,466	-26.82
Community Water Supply Fund.....	378,943	-37.74	351,085	177,000	-48.19
Grants and other contributions.....	645,804	-7.17	953,416	653,226	-1.00
INCAP/Regular Budget and Grants received....	971,153	31.26	1,343,154	1,134,161	61.93
OAS-Technical Cooperation Program.....	582,908	-15.55	582,908 ^b	639,464	-6.81
Total.....	11,666,581	1.52	12,318,336	11,370,811	5.35
World Health Organization					
Regular Budget.....	3,269,886	18.20	3,331,003	3,316,424	23.70
Malaria Eradication Special Account.....	682,453	774.93	647,435	527,653	57.06
Technical Assistance.....	1,223,516	6.34	1,280,550	1,144,215	-3.65
UN-Special Fund.....	503,254	30.06	532,250	235,447	323.45
Other.....	—	—	90,650	71,954	499.61
Total.....	5,679,109	29.60	5,881,888	5,295,693	-23.96
PAHO/WHO total.....	17,345,690	6.89	18,200,224	16,666,504	10.63

— None.

* As shown in *Official Document PAHO 61*.^b Excluding account receivable of \$56,557 in negotiation.

1964. This figure does not include \$3,638,774 expended for construction of the new building. The PAHO Regular Budget amount available was utilized in full. These obligations included \$300,000 to increase the Working Capital Fund, \$25,000 for increasing the Emergency Procurement Revolving Fund, and \$250,000 for the Special Fund for Health Promotion to finance expanded program activities in water supply, nutrition, and education. The payment to the last-mentioned fund was agreed with the W.K. Kellogg Foundation as the method for repayment of the generous "loan" of \$5 million toward the construction of the new building.

Special Malaria Fund expenditures were lower than in 1964 and below the 1965 available funds. The reduction is related to an increase in the amount available under the WHO Malaria Eradication Special Account and also to the fact that the Reserve for Termination Costs did not require any allocation from the PAHO Special Malaria Fund. In order to avoid depletion of the Community Water Supply Fund, in view of expected reductions in future voluntary contributions, much of the Water Supply Program was carried out under the regular programs of WHO and PAHO; the result was that about half of the funds

specifically available for the water supply program were carried forward for use in 1966 and future years.

Regarding PAHO Grants and other Contributions, as well as INCAP Regular Budget and related Grants, the obligations contracted during the year were below the total amount received by the end of the year; this precautionary measure, taken because new grants are not usually received early in the year, resulted in balances that will be available for the first part of 1966.

A high percentage of the WHO funds was used, but some of the projects to be carried out with UN Special Fund assistance were delayed in starting.

The Pan American Health Organization is in sound financial condition. The Working Capital Fund reached \$2,839,420, or 35.14% of the 1966 operating budget—this percentage level is the highest reached since the beginning of 1958. The satisfactory financial condition is due to the persistent application of long-term policies on expenditures, Working Capital Fund, and reserves. The first of these policies, namely to maintain the expenditures within income, staying below the authorized budget if necessary, was adopted in 1959. The 1965 income, which amounted to 100.91% of the authorized

appropriations, made it possible to carry out the year's program at the full authorized level.

The second main policy was to achieve a long-term solution to the financial problems of the Working Capital Fund. The foundation to reach the goal was established in 1959, when the Directing Council authorized the Director to include in the PAHO Regular Budget for 1961 and future years an amount for gradually increasing and maintaining the Fund at an adequate level. The present level of the Working Capital Fund is adequate to meet the operational costs of the Organization, providing that the largest contributor continues to pay its quota by mid-year.

A third policy, adopted in 1962, was to expand on a gradual basis the partial reserves for repatriation entitlements and service benefits, so as to include all termination costs. This reserve was substantially complete for most of the voluntary funds, except for INCAP for which a reserve was commenced in 1965. The reserve for the PAHO Regular Budget was further increased and the result is that the Organization has assured capacity to meet future financial obligations which may arise from program terminations without danger to the PAHO Regular Budget or the Working Capital Fund.

Quota payments for 1965 improved by less than 1% over 1964, but payment of quotas in arrears improved substantially. Income in 1965 represented 100.91% of the authorized appropriations. Obligations were 99.99% of the appropriation, leaving a surplus of \$65,940 (Table 42).

During 1965 the system of program budgeting was continued with minor improvements but no basic change. Continued improvements were made in the financial services. The effective workload per person in budget and financial services continued to rise, but at a slower pace than the dramatic manpower and financial savings which occurred when these services were centralized during the 1962-1964 period.

Management and Personnel

The objective of administrative rationalization was reached in early 1965—virtually complete centralization in the Headquarters of all administrative activities was achieved, with corresponding economies and efficiency. The role of electronic data processing techniques and applications in the Organization's administrative and other work areas was further increased during the year.

The *PAHO/WHO Country Representative Manual* was revised in preparation for the issuance of a complete new edition.

Total staff strength of the Organization at the close of business on 31 December 1965 was 1,033 (907 in 1964), including 30 temporary employees and 27 short-term consultants. Of the 976 regular staff members, 249 were stationed at Headquarters and 727 in the field. The turnover rate for the year was 10.9%.

A total of 684 persons were appointed during 1965. Among them, appointed as regular staff members, were 49 professionals and 42 general service employees. Of the remainder, 446 were consultants and 147 were conference and general service temporary employees hired during peak workload periods and meetings of the Governing Bodies of the Organization.

The classification of all positions within the Organization was continually reviewed, in order to ensure that post descriptions were current and properly defined. A total of 233 classification actions were processed, involving the preparation and classification of 64 post descriptions, redefinition of 136, and reclassification of 33 posts.

Amendments to the PASB/WHO Staff Rules included the establishment of a flat rate as extra compensation for language proficiency; expansion of the rule for language allowance to permit the payment of an additional rate for a third language useful to the Organization; the recognition of the gross salary level as the basic criteria for pensionable remuneration rather than

TABLE 42. PAHO REGULAR BUDGET: APPROPRIATION, INCOME, AND OBLIGATIONS, 1964 AND 1965

U.S. dollars

Year	Authorized appropriation	Income (Quotas and Other)	Percent of appropriation	Obligations	Percent of appropriation	Surplus (or deficit)
1964.....	6,560,000	6,253,025	95.32	6,251,197	95.29	1,828
1965.....	7,190,000	7,255,434	100.91	7,189,494	99.99	65,940

the net figure (gross salary less staff assessment); and the increase in the limit of indemnification payable to a staff member for loss of personal property resulting from a service condition, from \$1,000 to \$2,000 for staff members without dependents and up to \$4,000 for those who have.

Local salary scale revisions were approved during 1965 for Azul and Buenos Aires, Argentina; Rio de Janeiro, Brazil; Bogotá, Colombia; Guatemala City, Guatemala; Montevideo, Uruguay; and the El Paso Field Office, Texas, U.S.A. Towards the end of the year a review of the local salary scale for Lima was initiated.

Based upon studies of cost-of-living factors for each area, post adjustment classes for professional staff were revised for Brazil, Chile, Colombia, Cuba, Dominican Republic, Haiti, México, Uruguay, Venezuela, and Washington, D.C., U.S.A.

Services and Supply

The year-end statistical report revealed that 16,829 line items had been processed. The Supply Service yearly reports show a steady increase of workload in the past 6 years and the 1965 total was more than twice the total of line items processed in 1960.

Requests from the Member Governments for purchases against the Emergency Revolving Fund included several for various types of vaccines from Guatemala, Honduras, México, Nicaragua, Perú, Venezuela, and St. Lucia in the West Indies, and one for X-ray films from El Salvador.

There was also an increase in the volume of work in the General Services areas with respect to meeting the deadline of the moving into the new Headquarters building, which required considerable work and man-hours. At the beginning of the year, as the construction

work on the new building progressed, General Services was assigned various duties in connection with the evacuation of the old premises and occupancy of the new building. Among the additional duties were handling or assisting in the disposal of old equipment, allocation of space, installation of electronic equipment and telephones, and purchase of furniture and furnishings.

The service requirements generated by the facilities available in the new building resulted in a need to adjust the operational procedures of the Service Unit. To operate the mechanical equipment required to heat and air-condition the building it became necessary to provide 24-hours-a-day engineering staff. An electronics subunit was set up within the Property Services Unit to service the electronic equipment installed in the various meeting rooms.

Meeting and Translating Services

The demand for translation services increased by 12%. The work covered 7,425 pages translated into Spanish; 3,018 into English, and 1,488 into Portuguese: a total of 11,931 pages (10,708 in 1964).

In addition to the meetings of the PAHO Governing Bodies, the Conference Section advised and assisted in the planning of 20 seminars and other meetings.

ZONE AND FIELD OFFICES

New quarters were purchased for the Zone Offices in Argentina and Brazil, and negotiations were entered into for new quarters in Perú. The Zone Office in Guatemala was moved from a house to an office building.



VIII. PROJECT ACTIVITIES

This chapter contains information on projects—begun, continued, or finished—in the Americas in 1965 with PAHO/WHO assistance. Unless otherwise specified, the information applies to the calendar year.

Country projects are arranged alphabetically, followed by AMRO (intercountry or inter-Zone), and by inter-Regional projects. The number in parentheses corresponds to the old classification.

A *country-project* objective states the purpose for which it was undertaken by the Government concerned and is not related to the form or extent of PAHO/WHO assistance. An *AMRO-project* objective states the goal, or goals, sought by the Organization.

As to projects that include *Fellowships* in the title, the awarding of fellowships itself constitutes the objective of each of those projects; other fellowship awards are shown with the project of which they are part.

The Pan American Sanitary Bureau operates basically with funds from the regular budgets of the Pan American Health Organization and the World Health Organization. Monies received from other sources are channeled either through PAHO or WHO. Below each project description the source of funds is shown at left and cooperating agency at right, as applicable.

The following acronyms are used to identify the source of funds:

PAHO/R	Regular budget
PAHO/CWSF	Community Water Supply Fund
PAHO/SFHP	Special Fund for Health Promotion
PAHO/SMF	Special Malaria Fund
PAHO/G	Grant, followed by name or acronym of name of grantor
PAHO/INCAP	Institute of Nutrition of Central America and Panamá
PAHO/OAS-PTC	Organization of American States, Program of Technical Cooperation
WHO/R	Regular budget
WHO/MESA	Malaria Eradication Special Account
WHO/UN-TA	United Nations, Technical Assistance Program

WHO/UN-SF	United Nations, Special Fund
WHO/Other	Other funds

Other acronyms—and their respective full names—used in the Report appear on page iv and in the Index.

ARGENTINA-0200 (-8), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1957-1971, year when the consolidation phase is expected to be completed.

Assistance provided: Consultant services by Headquarters staff; and drugs.

Work done: In the 12th cycle (January-June) 30,236 houses were sprayed with DDT, and 48,428 in the 13th cycle (July-December). Blood smears examined from areas in maintenance phase totaled 32,301 without positives. From the consolidation-phase area, 41 (0.04%) were positive among 92,708 blood smears examined; this high number of cases was due to an outbreak in the Orán department of Salta province. From the attack-phase area, 57,673 blood smears were examined and 213 (0.37%) were found positive.

The program continued under financial difficulties which prevented full-scale operations in areas in preparatory or attack phase. Special efforts were made to improve geographical reconnaissance and spraying operations in the Northeast, where the malaria problem was more acute.

PAHO/SMF UNICEF

ARGENTINA-0300 (-2), Smallpox Eradication

Objective: To intensify vaccination programs in the country and increase the production of smallpox vaccine.

Probable duration: 1954-

Assistance provided: Advisory services by Headquarters and Zone VI Office personnel; and equipment for the production of the vaccine.

VIII. PROJECT ACTIVITIES

Work done: Mass-vaccination campaigns were organized in several provinces, along the borders with Brazil and Paraguay, where imported smallpox cases appeared.

The Organization provided the National Institute of Microbiology with freeze-drying equipment to enable it to produce smallpox vaccine.

PAHO/R

ARGENTINA-0400 (-20), Tuberculosis Control

Objective: To organize and develop in the demonstration area of the province of Santa Fe a National Tuberculosis Control Center for the following purposes: to obtain epidemiological data, apply and evaluate tuberculosis control methods, and train personnel from Argentina and from other countries.

Probable duration: 1960-1966.

Assistance provided: 1 short-term consultant and advisory services by the technical staff of Zone Office VI and the Regional Adviser; and one 2-month fellowship to study tuberculosis control and epidemiology, in Italy and Tunisia.

Work done: From January to 31 October, the work covered: 41,522 tuberculin tests, 11,204 BCG vaccinations (130% of the target for the year), 57,551 photofluorographies, and 301 (of an expected 374) cases diagnosed; 709 cases and 3,044 contacts were under control.

A 6-week course on laboratory techniques was given for 12 students from 8 provinces in Argentina and 2 students from Paraguay and a 2-month course for 14 nurses and nursing auxiliaries; individual training in laboratory techniques was given to 1 biochemist and 1 statistical clerk.

In addition, a comparison was made of various media for the culture of the tubercle bacillus under the guidance of a specialist from the WHO Reference Laboratory.

WHO/R

UNICEF

ARGENTINA-0500 (-28), Leprosy Control

Objective: To organize and put into practice a national leprosy control program which will include pertinent evaluation procedures.

Probable duration: 1960-1968.

Assistance provided: Advisory services by the leprologist assigned to project AMRO-0506 and by Headquarters staff, as well as by advisers in statistics and administration assigned to projects AMRO-3506 and -3606, respectively; two 3-month fellowships for the study of leprosy (rehabilitation and prevention of deformities), in Venezuela.

Work done: Leprosy control activities were continued in the provinces of Buenos Aires, Entre Ríos, Misiones, and Tucumán; and new administrative methods were instituted in the programs of Córdoba, Formosa, and Santa Fe.

Between 1 June and 30 September 278 new cases of leprosy were detected: 125 were lepromatous, 89 were tuberculoid, 34 were indeterminate, and 30 had other clinical forms of the disease.

The number of cases registered at 30 September was 8,897, of which 5,190 were under control. Of those under control, 2,952 were male and 5,073 were over 15 years of age. The distribution of clinical forms of the disease was: lepromatous, 2,738; tuberculoid, 1,520; indeterminate, 749; and other, 183. A total of 4,209 were receiving treatment at outpatient clinics and 981 in hospitals. The number of contacts registered was 18,077, of which 12,875 (71.2%) were under control.

A 30-hour course in leprosy was attended by 8 medical officers.

A study was made of a new leprosy control program in which administrative methods would be strictly applied and epidemiological and sociological research would parallel program activities. The cost of the various program activities was being determined as part of the administrative research.

WHO/R

UNICEF

ARGENTINA-0701, Rabies Control

Objective: To study the ecology of bats and their relation to rabies in men and cattle in the Northern Provinces of the country.

Probable duration: 1965.

Assistance provided: 1 short-term consultant and laboratory and advisory services by personnel of the Pan American Zoonoses Center and of Zone VI Office.

Work done: During the study of the ecology of bats and their relation to the problem of rabies their various resting places were determined, as were such environmental factors as relative humidity, temperature, altitude, latitude, and associated fauna. Several Government departments participated in the studies; 19 gregarious species of bats were collected and identified. A study was carried out of the distribution of the vampire bat *Desmodus rotundus* and of the ecological factors that determine its presence. Practical demonstrations were conducted to train local personnel in field work (location, capture, and recording of geographical and ecological data) and in preparing bats for subsequent scientific investigation. At the end of the year taxonomic studies of

captured specimens, and virological studies of samples sent to the Pan American Zoonoses Center, were underway.

The assessment and recommendations contained in the report on the work carried out found immediate application in the paralytic rabies control campaign which the Health Campaign Service of the Ministry of Agriculture and Stockraising had initiated in northern Argentina.

PAHO/R

ARGENTINA-2200 (-29), Water Supplies

Objective: To prepare and carry out plans for the construction or expansion of water supply systems and sewerages.

Probable duration: 1960-1967.

Assistance provided: 1 sanitary engineer, 3 short-term consultants, and advisory services by the engineering staff of Zone VI and other projects in the country; and equipment and supplies.

Work done: The National Potable Water and Rural Sanitation Service (SNAP) was established at the Ministry of Social Welfare and Public Health, and a draft law giving the Service administrative independence was under study. A loan contract was signed in August with the Inter-American Development Bank granting SNAP a \$5 million loan which represents 50% of the cost of construction of the first stage of the program for rural areas. This first stage will provide approximately 1.7 million persons with service within 2 years. At the end of the year, 19 provinces had signed agreements with SNAP for participation in the program, and 36 projects had been completed and submitted to IADB for approval.

At the request of SNAP the School of Sanitary Engineering of the University of Buenos Aires conducted a course for personnel working in the services of the provinces.

The IADB granted the General Administration of Sanitary Works of the Nation a loan of \$5 million for expanding the Buenos Aires water supply system.

PAHO/R, WHO/R

ARGENTINA-2300 (-51), *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Duration: 1950-1965.

Assistance provided: While the program was in operation the Organization cooperated with the Government by providing the services of 1 medical adviser and 1

sanitation inspector specialized in *A. aegypti* eradication; some supplies and equipment were also provided.

Work done: The program covered every area in the country in which ecological conditions favored the mosquito. An initial survey made in the area, which consisted of about 1,000,000 km², covered 3,741 localities, of which 165 were infested with *A. aegypti*. All initially positive localities were treated and checked in accordance with the recommendations of the Organization, and by 1962 all of them were free of the vector. The special verification was carried out in 1964, at which time 33 localities were inspected in 9 provinces. The results confirmed that the mosquito had been eradicated from the country. At the XVI Meeting of the Directing Council of the Pan American Health Organization (Washington, D.C., U.S.A.; 27 September-8 October 1965) Argentina was formally declared free of *A. aegypti*.

ARGENTINA-3100 (-40), Planning

Awards	Field of study	Place of study	Months
1	Public health (planning)	Brazil, Puerto Rico, Venezuela	1
3	Public health administration (planning)	Chile	3½

PAHO/R

ARGENTINA-3101 (-6), Fellowships for Health Services

Awards	Field of study	Place of study	Months
2	Clinical and social pediatrics	Chile	3
1	Medical records librarianship	Venezuela	¾
2	Nutrition	Guatemala	2½
1	Ditto	Guatemala, Nicaragua	5
1	Organization of medical education (pediatrics)	Brazil, Colombia, Ecuador, Guatemala, México	2
2	Ditto (clinical and social pediatrics)	Chile	3
1	Pediatrics	Guatemala	1
1	Public health nursing (administration and supervision)	Chile	10
1	Rehabilitation (physical medicine)	Puerto Rico	3

WHO/R

ARGENTINA-3102 (-7) Health Services

Objective: To plan and carry out an integrated health services program under the Provincial Health Services of

VIII. PROJECT ACTIVITIES

El Chaco and Tucumán, respectively; to train professional and auxiliary personnel; and to draft for each Service a health code and supporting legislation.

Probable duration: 1957-1969.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 nurse.

Work done: A mass smallpox-vaccination campaign was carried out in El Chaco province because smallpox cases had been reported in the neighboring province of Corrientes.

The programs and regulations for courses for auxiliaries were revised, and handbooks on standards and techniques were prepared.

In the province of Tucumán the first census of health services and resources was published. A communicable disease reporting system was organized and the International Certificate of Death was adopted. The new organization of the Health Ministry, planned the previous year, was put into practice with personnel trained in the capital city and abroad. The Department of Education for Health and Personnel Training and the Department of Sanitary Engineering and Environmental Sanitation were organized in April.

In 1965, 57,653 consultations were given for children and 37,515 kilograms of powdered milk were distributed.

The following figures, which relate only to the first 9 months of the year, are expressed as percentages of the target figure for the whole year.

Only 16,722 persons were vaccinated against smallpox (2.8% of the target of 80% of the population up to 50 years of age, or 721,917 persons); 67,932 children under 15 years of age (68.7% of the target of 70% of all children in that age-group) were vaccinated with DPT; plans called for 62,702 children aged 6-10 years (60% of the existing 104,504) to be vaccinated against diphtheria and tetanus, but only 28,817 children (46% of the target) were vaccinated; 202,029 out of a total of 293,231 children under 14 years of age (86.1% of the target of 80% of the total child population) were vaccinated against poliomyelitis.

Up to the end of August, 25 hospitals with a total bed capacity of 2,769, had discharged 29,325 patients and treated 328,727 outpatients. No targets had been established for these activities. A total of 15 students completed a health inspectors course begun in 1964. Hospital statisticians were trained. The curriculum of the Nursing School of the National University of Tucumán was modified and 2 courses for nursing auxiliaries were given, one with 45 and the other with 25 students. Two short courses on venereal diseases, 2 on leprosy, and 1 on tuberculosis were attended by a total

of 49 general practitioners. An orientation course on public health and first aid was also given for rural teachers of Valles Calchaquies.

WHO/UN-TA

UNICEF

ARGENTINA-3103 (-13), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Dentistry	Brazil	2½
1	Laboratory services (animal care)	United States of America	4
1	Nursing education	Costa Rica	10
2	Nursing services (administration and supervision)	Guatemala	9
1	Nutrition	Ditto	2½
1	Public health adminis- tration	Brazil	11
1	Ditto (maternal and child health)	Chile	10
1	Ditto (organization of medical education)	Ditto	10
1	Ditto (public health teaching)	Ditto	10
1	Sanitary engineering	Colombia	2½

PAHO/R

ARGENTINA-3104 (-35), Health Services (San Juan and Mendoza)

Objective: To develop a program of integrated health services in the provinces of San Juan and Mendoza.

Probable duration: 1961-1966.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 public health nurse; and one 11½-month fellowship to study public health administration, in Puerto Rico.

Work done: The Committee, composed of representatives from the province of San Juan, the remainder of the country, and PAHO/WHO, completed the evaluation of the Health Plan; one of the results was the simplification of the structures, at the ministerial, intermediate and local levels, with a reduction in the number of health areas from 5 to 3.

The figures that follow apply only to the first 10 months of the year: 90,000 smallpox vaccinations were performed, or 30% of the established goal of 300,000 for the year (80% of the population); 70,000 DPT inoculations were applied, or 33% of the goal of applying, during the year, 216,000 inoculations in children in the 3 months to 12 years of age group (3 inoculations each), which means that 23,333 of the 175,000 children

in that age group were immunized; and 110,453 doses of poliomyelitis vaccine were administered.

To obtain more accurate knowledge of the extent of the tuberculosis problem in the province, miniature X-ray equipment was obtained and a program for using it was planned.

Increasing importance was given to the maternal and child health program by increasing the number of its personnel. The estimated number of child consultations was 135,000, of which 35,000 were checkups of well children. The number of pregnant women under control was 7,400, and there were 9,500 postpartum consultations.

The population in urban areas with water supply service increased by 12%, or 44,523 persons benefited; 12 water supply projects were authorized for the province, and equipment provided by UNICEF was used to drill 14 wells and to install 27 electric pumps and 1 hand pump. A garbage treatment plant, with a 50-ton daily capacity, was put into operation in greater San Juan.

Courses were given for 21 sanitation technicians and 27 nursing auxiliaries, and 1 course on orientation in public health administration was conducted for 10 graduate nurses. Inservice training was given to 140 employees in various hospitals.

In the province of Mendoza the Ministry of Health began an administrative reorganization by reducing its departments to 3; the first census taken of available health resources and services was published, and a study of the rational utilization of health care was begun. The use of new certificates for live births, marriages, deaths, and stillbirths was instituted.

A health center was established to be used by the School of Medical Sciences of the National University of Cuyo for the purpose of teaching hygiene and social medicine.

During the first 10 months of the year, 200,000 doses of poliomyelitis vaccine were administered to children of 3 months to 14 years of age; the target for the year was 70% of the total (192,500 children).

The Ministry of Health established effective working relations with the Ministry of Public Works and with the municipalities, with the result that potable water was supplied to a population of 40,000 living in urban areas. Plans were made to supply 30 rural villages with water.

The province of San Luis expressed its interest in conducting a similar program, and university-level training was therefore given to 26 nursing auxiliaries, 9 sta-

tistical auxiliaries, 2 sanitation technicians, and 2 nursing auxiliaries.

PAHO/R

UNICEF

ARGENTINA-3301 (-4), National Institute of Microbiology

Objective: To expand the activities and improve the technical and scientific work of the Institute.

Probable duration: 1959-1963; 1965-

Assistance provided: 2 short-term consultants (members of the technical staff of the Middle America Research Unit (MARU) an agency of the National Institutes of Health of the United States Public Health Service) to advise on studies on hemorrhagic fever.

Work done: A major reorganization begun at the Institute will enable it to undertake diagnosis, personnel training, preparation of biological products, research, and reference work incumbent upon it as the central laboratory of a national network. One result was an increase in diagnosis activities (Chagas' disease, toxoplasmosis, bacteriology of tuberculosis, etc.).

Studies were made on the etiology and epidemiology of infant diarrheal diseases. A study on hemorrhagic fever was carried out, with the aid of the consultants, which included the virological, epidemiological, and ecological aspects of this infection.

Teaching activities included refresher courses for the personnel of the peripheral laboratories, as well as assistance to the Pan American Zoonoses Center in a regional course on rabies diagnosis and control.

The Organization provided the Institute with freeze-drying equipment to enable it to produce smallpox vaccine for national needs and those of other countries in the Americas.

ARGENTINA-3500 (-32), Health Statistics

Objective: To develop an integrated program of vital and health statistics in the province of Buenos Aires; and to establish among provincial agencies concerned with statistics a coordinated program to be used for demonstration purposes and for field practice of personnel undergoing training in statistics.

Probable duration: 1960-

Assistance provided: Consultant services by the Zone VI statistical adviser.

Work done: The integrated program of vital and health statistics of the province of Buenos Aires continued carrying out its well-established routine operations, which

VIII. PROJECT ACTIVITIES

consist of sound practices for collecting, registering, and tabulating data on births and deaths. The program was widely utilized for demonstration and training purposes.

ARGENTINA-4100, Maternal and Child Health

Objective: To strengthen the national maternal and child health program; and to coordinate the activities of that program with those of the provincial Ministries of Health in order to establish or strengthen maternal and child health services in the provinces.

Probable duration: 1965-1966.

Assistance provided: 1 short-term consultant.

Work done: The health authorities of the province of Córdoba, with the aid of the consultant, studied the feasibility of conducting a course in the care of premature infants and of establishing a program to improve the facilities for the care of newborn infants.

PAHO/R

ARGENTINA-4301, Research in Psychiatry

Objective: To conduct research on the patterns of communication among family members of mental patients.

Probable duration: 1964-1966.

Assistance provided: 1 grant.

Work done: The investigation (begun in 1964 by interviewing patients and their families at the outpatient department of the Professor Gregorio Aráoz Alfaro Polyclinic, in Lanús, in the province of Buenos Aires) undertook an analysis of the variables in communication patterns among such families. Conversations of family members were recorded on tape, and the results were coded.

The first stage of an investigation of the structure of conduct and pattern of social communication was begun with an analysis of the various kinds of linguistic disturbances in, and semantic structures of, neurotic patients.

A preliminary study was made also of public attitudes towards alcohol, alcoholism, and the alcoholic, in a sample of 150 persons from 2 areas in Buenos Aires.

PAHO/G: Foundations' Fund for Research in Psychiatry

ARGENTINA-4302, Mental Health Research

This project is part of Argentina-4301.

ARGENTINA-4800 (-24). Medical Care Services

Awards	Field of study	Country of study	Months
2	Hospital administration	Brazil	15
1	Organization of medical education (hospital administration)	Brazil, México, United States of America, Venezuela	3
1	Public health administration (hospital administration)	Chile	16
1	Tuberculosis (laboratory techniques)	Czechoslovakia, Venezuela	6

PAHO/R

ARGENTINA-6100 (-17), School of Public Health

Objective: To strengthen the School of Public Health of the University of Buenos Aires for the adequate preparation of professional and auxiliary personnel for health work, in order to meet the needs of the country, in keeping with the development of health programs.

Probable duration: 1958-1967.

Assistance provided: Advisory services by Headquarters personnel; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Epidemiology	United States of America	12
1	Organization of public health teaching (health statistics)	Ditto	9

Work done: An outline of the kind of international advisory services that the School of Public Health will require in 1966 was reviewed and approved.

A review was made of the study plan for the 4-month training course for hospital administrators, which was attended by 30 hospital-administration officers from 14 of the country's 23 provinces. A 40-week course was conducted to prepare statisticians at the intermediate level, during which one third of the time was devoted to inservice practices; 27 students from Argentina, 2 from Uruguay, and 1 from Paraguay attended the course.

PAHO/R, WHO/R

ARGENTINA-6200 (-18), Medical Education

Objective: To strengthen and expand medical education through adequate planning, better pedagogical approaches, and research activities.

Probable duration: 1958-

Assistance provided: 2 short-term consultants.

Work done: The authorities of the School of Medicine of the University of Salvador designed, together with a PAHO consultant, a plan to improve the teaching pro-

grams in premedical and basic sciences. Advisory services were also given to the School of Medicine of the University of Buenos Aires.

PAHO/R, WHO/R

ARGENTINA-6300 (-3), Nursing Education

Objective: To improve teaching in the schools of nursing of Argentina: First in the universities of Buenos Aires, Córdoba, Litoral (Rosario), and Tucumán; later in the School of Nursing of the Army; and most recently in the nursing school of the provincial Ministry of Health of Salta and in the school of the national Ministry of Social Welfare and Public Health.

Probable duration: 1957.

Assistance provided: 1 nurse educator, 1 short-term consultant and advisory services by the nurse adviser assigned to project AMRO-3206; a small amount of supplies and equipment; and the following fellowships

Awards	Field of study	Place of study	Months
3	Nursing education	Brazil	10½
2	Ditto	Puerto Rico	12
1	Ditto (teaching of psychiatric nursing)	Ditto	12

Work done: Inservice education of faculty and supervisors in health services used by the schools of nursing for the clinical experience of their students was carried out through seminars and short courses in all of the schools. In addition, evaluation and adjustment of curriculum were also a part of the ongoing activities in each school. One of the outstanding developments was the aid given to other schools by the faculty of the Córdoba University School of Nursing which was the first to receive international assistance when the project began in 1957.

In the University of Córdoba, plans were drawn up for a midwifery course for graduate nurses and for a course in nursing in public health for graduate midwives employed in the health services.

In one of the two schools most recently included in the project, that under the provincial Ministry of Health of Salta, preliminary steps were taken to revise laws and regulations on the practice of nursing as well as those covering nursing education in the province, and to study a reorientation of the curriculum and teaching methods in the school.

Comparison of statistics on the 6 schools of nursing already in the project in 1964 revealed that in 1965 there was an overall increase of 12 faculty members (total of 65); of 46 students in the entering class (total of 131);

of 20 students in the graduating class (total of 64); and of 33 students in the total enrollment (309).

PAHO/R, WHO/UN-TA

ARGENTINA-6301 (-25), Training of Nursing Personnel

Objective: To carry out training courses for professional and auxiliary nursing personnel in order to improve the public health services of the country.

Probable duration: 1960-1968.

Assistance provided: Consultant services by the nurse adviser assigned to project AMRO-3206 and the nurse educator of project Argentina-6300; a small amount of supplies and equipment; and one 1½-month fellowship to study nursing education in the United States of America.

Work done: A 9-month course in administration, supervision and teaching was given in Buenos Aires and was completed by 17 nurses. A 3-month refresher course was attended by 50 graduate nurses. In the Capital and 9 provinces 260 nursing auxiliaries completed 9-month courses which in 2 provinces were preceded by one month of preliminary studies.

The 55 nurses collaborating in the nursing program either as instructors or supervisors drew up a draft of a manual to serve as a guide to be followed in all future courses for auxiliary nursing personnel in Argentina. The draft was also prepared in final form and circulated.

PAHO/R

UNICEF

ARGENTINA-6400 (-30), Sanitary Engineering Education

Objective: To strengthen teaching at the School of Sanitary Engineering of the University of Buenos Aires, in order to graduate engineers trained according to the needs of health programs.

Probable duration: 1960-1967.

Assistance provided: Short-term consultants and advisory services by the engineering staff of Headquarters and of other projects in Zone VI; and one 3-month fellowship to study environmental sanitation (administration of water supply and sewerage systems), in Colombia and Venezuela.

Work done: The regular course in sanitary engineering at the School of Sanitary Engineering of the University of Buenos Aires was attended by 10 students. The School also offered 4 short courses: on ground water, from 11

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to 22 October, for 26 students; on the national plan of water supply for rural communities, from 25 October to 20 November, for 30 students, including 1 from Perú and 2 PAHO engineers; on water treatment plant operation, from 22 November to 4 December, for 25 students; and on industrial health (first part) from 1 to 10 November, for 25 students.

In addition, the School engaged in research and provided advisory services to national and provincial programs. The chief activities in this regard were as follows: a preliminary study and preparation of a draft plan for garbage disposal and a fertilizer plant for the city of San Juan, San Juan Province; an agreement with the Ministry of Social Welfare and Public Health for conducting a survey on industrial health and safety in the metropolitan area of Buenos Aires; an agreement with the Institute of Industrial Technology and the National Directorate of Chemistry to study air pollution in the city of Buenos Aires, for which 7 sampling stations were established; a study of the problem of stream pollution through slaughterhouse wastes in the area of greater Buenos Aires.

Work continued on the preparation of a request for assistance from the United Nations Special Fund for the establishment of a Center for Training, Research, and Information in Environmental Sanitation, at the School of Sanitary Engineering.

PAHO/R

ARGENTINA-6700 (-41), Training of Statistical Personnel

Objective: To train statistical personnel at the intermediate level who will be in charge of systems of vital, hospital, and health statistics; and to improve the quality of instruction offered by the faculty of the School of Public Health of the University of Buenos Aires, as well as the field demonstration areas.

Probable duration: 1965-1967.

Assistance provided: Consultant services by the statistics adviser assigned to project AMRO-3506.

Work done: Advisory services for planning and teaching were provided in the fields of medical records, hospital statistics, classification of diseases, and demographic techniques.

The course for health statisticians and hospital records technicians at the intermediate level was conducted with 32 students from Argentina (selected from 70 applications), 1 from Paraguay, and 2 from Uruguay.

BARBADOS-2200, Water Supplies

Objective: To prepare an islandwide survey of existing water supply facilities; to plan and design new water supply systems and improve existing ones; and to create a central authority for the management of water supply services.

Probable duration: 1964-

Assistance provided: 1 water-supply design engineer.

Work done: The survey of existing water supply systems in the island was initiated. A map of the island—showing the waterworks, population distribution, and other pertinent details—was completed.

WHO/UN-TA

BARBADOS-4801, Hospital Administration

Objective: To organize and operate the Queen Elizabeth Hospital as the central medical care institution of Barbados and as a teaching hospital for the University of the West Indies.

Probable duration: 1965-1967.

Assistance provided: 1 expert in medical and hospital administration.

Work done: The Government approved the regulations for the Queen Elizabeth Hospital. A scheme of the general organization of the hospital was prepared, and the personnel and equipment requirements were studied with a view to preparing a program budget.

An agreement by which the Organization will furnish the services of 1 adviser to act as the hospital director was concluded.

PAHO/R, WHO/UN-TA

BARBADOS-6300, Nursing Education

Objective: To strengthen basic and postbasic nursing education, including midwifery, in order to improve patient care.

Assistance provided: Advisory services by the nurse assigned to project AMRO-3201.

Probable duration: 1965-

Work done: The agreement to carry out the project was signed, and a nurse educator was recruited to begin in January 1966.

UNICEF

BOLIVIA-0200 (-4), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1957-1970, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 medical officer, 2 sanitation inspectors, and advisory services by Zone IV and Headquarters personnel; and drugs.

Work done: 31,013 house sprayings were carried out with DDT from January to September and blood smears were collected from 187,295 persons, revealing 730 (0.4%) cases; 77,829 smears and 99 cases came from areas in the consolidation phase. Financial restrictions continued to limit the number of personnel, resulting in the collection of smaller numbers of blood smears than desired and preventing full-scale surveillance operations in the consolidation-phase areas. In the departments of Beni and Pando and 2 areas in the valleys of the Río Pilcomayo and the Río Grande, where transmission is persistent, the smears collected indicated a considerable decrease in malaria incidence in comparison to 1964 (when several major outbreaks occurred), but because transmission had not yet been completely interrupted, they were continued in attack phase.

PAHO/SMF

AID, UNICEF

BOLIVIA-0300 (-8), Smallpox Eradication

Objective: To complete the vaccination campaign until 80% of the population has been protected.

Probable duration: 1962-1968.

Assistance provided: 1 sanitation inspector; and equipment and supplies.

Work done: 410,839 persons were vaccinated; of these, 115,917 were primovaccinations. Since the campaign was initiated to the end of 1965 the total number of persons vaccinated was 1,365,751. The work was done on a house-to-house basis; freeze-dried vaccine was administered by the multiple pressure method. Because the local laboratory could not produce all the freeze-dried vaccine needed, the balance was obtained from other vaccine-producing countries.

Political, financial, and administrative difficulties hampered the normal progress of this program, so that it will not be completed in 1966 as previously anticipated.

WHO/UN-TA

BOLIVIA-0400 (-7), Tuberculosis Control

Objective: To organize in the northern part of the Bolivian Plateau a demonstration area (consisting of the provinces of Omasuyos, Manco Kapac, Camacho, and part of the provinces of Ingavi and Los Andes) in order to: obtain epidemiological information, apply and evaluate practical methods of tuberculosis control, and train medical and auxiliary personnel for the gradual extension

of the program to other areas of the country.

Probable duration: 1963-1968.

Assistance provided: Advisory services by the adviser of project AMRO-0404.

Work done: A report was prepared on the status of the program at mid-year and on the steps necessary to improve it, and negotiations were begun with the Government for the reorganization of the program as a part of the basic health services.

The performance figures for the period January to October were as follows: 9,889 tuberculin tests, 3,199 BCG vaccinations, 7,735 photofluorographies, and 224 cases detected.

UNICEF

BOLIVIA-2200 (-15), Water Supplies

Objective: To prepare a national public water supply program; and to design and build municipal and rural water supply systems.

Probable duration: 1960-1966.

Assistance provided: Advisory services by personnel of Zone IV Office and of other projects in Bolivia.

Work done: Attempts were made to strengthen the Bolivian Sanitary Works Administration, created a few years earlier and put in charge of all the water supply and sewerage systems in the country. A commercial firm of consultants submitted to the Government a plan for improving the water supply system of La Paz, the cost for the first stage of which would be approximately \$4.8 million.

A short course was given on basic principles of water supply administration.

BOLIVIA-3100 (-10), National Health Services

Objective: To develop health services at both the ministerial and local levels; and to train technical and auxiliary personnel in accordance with the needs of the country.

Probable duration: 1955-1969.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 public health nurse; and the following fellowships

Awards	Field of study	Country of study	Months
1	Maternal and child health	México	10½
1	Public health administration	Ditto	10½
2	Ditto	Chile	7
1	Health legislation	Ditto	2

Work done: A diagnosis of the health situation in the country was made for the National Health Plan, and a

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study of priorities for the plan was begun. The programs of applied nutrition were modified and the work area was reduced to obtain a better yield from the activities planned.

In La Paz a course on administration of water supply systems was held at the School of Engineering of the Greater University of San Andrés for 25 professional staff. A group of nurses from Miraflores General Hospital received inservice training. See also Bolivia-3101 and 3103.

PAHO/R, WHO/R **AID, UNICEF**

BOLIVIA-3101 (-11), National Plan for Rural Development

Objective: To promote the economic and social development and the health of the indigenous populations of the Andean Highlands so as to facilitate their integration into the national community.

Probable duration: 1953-

Assistance provided: 1 medical adviser.

Work done: The total plan for this project was reviewed and modified.

The applied nutrition program was begun in school gardens, farms, and mothers' clubs in 7 of the 12 communities selected for the purpose. A medical post began to operate in Batallas and another in Santo Domingo, in the department of La Paz; 1 auxiliary post began to operate in Belén and another in Playa Verde, in the department of Oruro; and the Hospital-Health Center of Otavi, in the department of Potosí, was inaugurated. A mobile clinic began to operate in Sudañez, department of Chuquisaca.

To increase the water supply in rural areas, 15 hand pumps and 3 windmills were installed.

Construction of the new Training Center for Community Development in Pillapi, department of La Paz, was completed.

WHO/UN-TA **FAO, ILO, UN, UNESCO, UNICEF**

BOLIVIA-3102 (-16), Fellowships for Health Services

<i>Awards</i>	<i>Field of study</i>	<i>Country of study</i>	<i>Months</i>
1	Clinical and social pediatrics	Chile	3
1	Organization of medical education	Argentina	1½
1	Planning	Perú	2½
1	Rehabilitation	Brazil	4
2	Social pediatrics	Guatemala	1
1	Tuberculosis laboratory methods	Venezuela	1

WHO/R

BOLIVIA-3103, Training for Rural Development

Objective: To train auxiliary health personnel to conduct activities conducive to improving the lives of individuals and families, and of the rural community.

Probable duration: 1965-1967.

Assistance provided: Advisory services by personnel of other projects in the country.

Work done: The Training Center for Community Development in Pillapi, department of La Paz, was inaugurated on 7 October, and the 18-month course for health auxiliaries was begun with 30 students; another 18-month course, for social worker auxiliaries, was also begun, with 28 students.

Elsewhere in the country a home economics course was conducted for 15 housewives and a 1-week course was conducted for 28 indigenous midwives.

UNICEF

BOLIVIA-4201, Applied Nutrition

Objective: To develop an integrated program of applied nutrition in a selected area of the country, including training of professional and auxiliary personnel, laboratory studies, and research on the extent of protein-calorie malnutrition in preschool children.

Probable duration: 1964-1968.

Assistance provided: Consultant services by the adviser of project AMRO-4204 and of other projects in the country; and a grant for special studies.

Work done: An evaluation was made of the project and its activities and, as a result, the work area was reduced.

Auxiliary personnel was trained for the nutrition program in the localities of Batallas, Huatajata, Pillapi, and Puerto Pérez, in the department of La Paz.

PAHO/G: Foundation for International Child Health, Inc. **FAO, UNICEF**

BOLIVIA-4202 (-17), Nutrition

Objective: To establish a pilot nutrition service for the purpose of determining standards, structures, activities, and evaluation criteria for nationwide application.

Probable duration: 1965-1967.

Assistance provided: Consultant services by the adviser of project AMRO-4204; and equipment and supplies.

Work done: A second neighborhood (the first was chosen in 1964) was selected in the city of La Paz, and a census of the population and study of its nutrition

status were made. The study included a total of 86 families in both neighborhoods. Education in nutrition activities were also indicated.

PAHO/G: Williams Waterman Fund

BOLIVIA-6400, Sanitary Engineering Education

Objective: To increase the number and improve the quality of sanitary engineers in the country.

Probable duration: 1964-1967.

Assistance provided: 2 short-term consultants and advisory services by the engineering staff of project Bolivia-3100 and of other projects in Zone IV; and a limited amount of equipment and materials.

Work done: An intensive short course on basic principles of water supply administration was held from 19 to 28 April at the School of Engineering of the University of San Andrés, for 26 engineers from various organizations and municipalities responsible for public water supplies. Nine local instructors were in charge of the teaching; the consultants taught the classes dealing with water meters and rates and certain aspects of administration.

PAHO/R

BRAZIL-0200 (-24), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1958-1975, year in which the consolidation phase is expected to be completed.

Assistance provided: 2 medical officers, 3 sanitary engineers, 1 administrative officer, 4 sanitation inspectors, and extensive advice by a parasitologist, an entomologist, and a transport officer assigned to project AMRO-0200 as well as by Headquarters staff; drugs; a limited amount of supplies; and 2 fellowships of 5½ months each to study malaria eradication in El Salvador, México, and Venezuela.

Work done: 1,588,551 houses were sprayed in the first semester; and during July to September 1,213,349 more houses were sprayed. Of 1,367,577 blood smears examined from January to October, 88,602 (6.5%) were found positive; 109,968 of the blood smears were from consolidation-phase areas, with 63 (0.06%) positive.

Attack operations with DDT sprayings were continued in sectors already under attack, such as Alagoas, Ceará, Espírito Santo, Paraíba, Pernambuco, Rio Grande do Norte, Santa Catarina, and Sergipe; one district of Minas Gerais and the coastal areas of Bahia were brought

under attack operations, with complete coverage of sprayings with DDT. Geographical reconnaissance was extended to new areas in the Northeast and indicator districts were established in Amapá, Pará, and Roraima.

New legislation, reorganizing the national malaria eradication program along the lines recommended by the evaluation team which made a review in late 1964, was implemented.

The Government was in the process of negotiating with AID the extension of the long-term malaria eradication loan, in order to use in 1966 the balance of funds available to the campaign.

PAHO/SMF, WHO/R

AID

BRAZIL-0201 (-41), Malaria Eradication (São Paulo)

Objective: To eradicate malaria.

Probable duration: 1958-1969, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 sanitation inspector, for 4 months, and consultant services by the team leader of project Brazil-0200; antimalarial drugs; and supplies in limited quantity.

Work done: 6,384 houses were sprayed during January to complete the 10th semiannual DDT cycle, which totaled 109,480 houses sprayed. During the 11th cycle, February-August, 43,313 houses were treated. The 12th cycle was begun in August and up to the end of November covered 20,586 houses.

Among the 193,045 blood smears collected in the year, 1,549 (0.8%) positive cases were found; 85,631 of the blood smears and 529 positives (0.62%) were found between January and September in areas in the consolidation phase. Among the cases investigated, 27 were autochthonous, 454 imported, 8 introduced, 2 induced, 1 was a relapse, and 1 was not classified; 36 were not investigated.

The program showed excellent results, but the high number of cases imported from outside areas prevented withdrawal of spraying from large areas where transmission continued to occur.

PAHO/SMF

AID

BRAZIL-0202 (AMRO-137), Training Center for Malaria Eradication (São Paulo)

Objective: To train professional and auxiliary personnel for the malaria eradication programs of Brazil and other Latin American countries.

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Probable duration: 1958-1968.

Assistance provided: A grant to the School of Hygiene and Public Health of the University of São Paulo, to cover costs of equipment, teaching materials, and salaries of auxiliary personnel directly connected with courses.

Work done: 2 courses were held: one in malariology, offered from 19 April to 18 June, and attended by 22 physicians and engineers; the other, in medical entomology, was primarily oriented toward malaria work.

PAHO/SMF

BRAZIL-0300 (-38), Smallpox Eradication

Objective: To organize laboratories for the production of lyophilized vaccine to meet the needs of the national smallpox eradication campaign.

Probable duration: 1956-1967.

Assistance provided: 5 temporary advisers.

Work done: The Organization and the Government concluded an agreement for a national smallpox eradication program, and the preparation of the corresponding plan of operations was underway. According to the plan, eradication will be performed in 2 stages—during the first stage, which will be limited to several states, the proposed methodology will be tested, and during the second stage the program will be extended to the remainder of the country.

PAHO/R

AID

BRAZIL-0401 (-55), Tuberculosis Control

Objective: To study the epidemiological factors of tuberculosis in the state of Rio Grande do Norte; and to organize a control campaign integrated with the local health services.

Probable duration: 1961-1963; 1965-1968.

Assistance provided: Advisory services by WHO (Geneva) and PAHO personnel; and equipment and supplies.

Work done: The international staff met with the members of the National Tuberculosis Campaign Committee and the director of the National Tuberculosis Service for 5 days in Rio de Janeiro to discuss programs, standards, and guidelines for the Service. The immediate result was the agreement to study and develop a *verification area* (one in which from the outset the program will be planned on a structure, organization and well defined standards according to the policy and guidelines of PAHO/WHO in order to serve as the basis for evaluating and improving

the tuberculosis control procedures), the granting of certain specific fellowships, and the beginning of a study on primary resistance to isoniazid and the prevalence of atypical mycobacteria.

PAHO/R

UNICEF

BRAZIL-0500 (-48), Leprosy Control

Objective: To intensify and expand the leprosy control program by applying modern methods and techniques; to gradually incorporate leprosy control activities into the general health services; and to train the professional and auxiliary personnel needed for the program.

Probable duration: 1962-1967.

Assistance provided: Advisory services by personnel of Zone V Office.

Work done: Data obtained from the National Leprosy Control Service of Brazil indicate that between 1 July and 31 December 1964 a total of 3,287 new cases of leprosy were detected. The number of cases registered at 31 December totaled 101,392, of which 74,549 were under control, 16,690 were being treated in hospitals, and 57,859 in outpatient departments. Of the 233,457 registered contacts, 119,019 were under control and 114,438 were not.

No information was obtained for 1965.

UNICEF

BRAZIL-0701 (-42), Rabies Control

Objective: To develop the national and State health services needed for producing vaccine and carrying out rabies control programs.

Probable duration: 1959-1967.

Assistance provided: 1 short-term consultant and 1 temporary adviser; equipment; and advisory services and biological materials provided by the Pan American Zoonoses Center.

Work done: In October the principal aspects of the rabies problem in all states and federal territories of the country were studied, so that the data thus obtained could be used as the basis for preparing a properly financed nation-wide control plan which the Federal Commission of Rabies Control will submit to the Government in early 1966. The Oswaldo Cruz Institute was provided with materials, reagents, and specialized equipment for the Rabies Vaccine Production and Diagnosis Laboratory; assistance was also given in studies on typing and classifying the virus strains which the Institute uses in the production of rabies vaccine.

The Pan American Zoonoses Center supplied the virus strains for rabies vaccine production, in addition to the standard, and was responsible for the potency and control testing of the rabies vaccines produced in various institutes of the country.

WHO/R

BRAZIL-0900 (-53), Schistosomiasis

Objective: To plan and carry out a pilot program on schistosomiasis control as a basis for a nationwide program; and to expand research activities in the field of schistosomiasis.

Probable duration: 1951-1956; 1965-1970.

Assistance provided: 1 short-term consultant; and equipment and supplies.

Work done: The planning and execution of a pilot program on schistosomiasis control were discussed. The objective of the pilot program will be to test control methods in typically endemic foci, in order to gather the information and experience that would permit the development of a gradually expanding program for the control of the disease throughout Brazil.

The report of the consultant included recommendations concerning the program in 4 proposed areas, the techniques to be used, and some suggestions as to how the plan might be assisted by other agencies.

PAHO/R

BRAZIL-0901, Plague

Objective: To plan and carry out a research program that could serve as a basis for a reorientation of the control of plague in the country.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and advisory services by Headquarters personnel; and equipment and supplies.

Work done: 5 of the most important plague foci in the country were visited for the purpose of preparing a comprehensive research program to be jointly developed by the Ministry of Health and PAHO. The program will include ecological studies, research on the natural infection of wild rodents and fleas, sensitivity of various species of rodents to plague, study of the strains of plague bacillus isolated, and research investigation on the intradomestic flea fauna.

PAHO/R

BRAZIL-2100 (-25), Sanitary Engineering

Objective: To improve the organization of the environmental sanitation services of the Ministry of Health; and to cooperate with universities and other institutions in preparing and training professional and auxiliary engineering personnel.

Probable duration: 1952-

Assistance provided: 1 sanitary engineer and secretarial services; demonstration equipment for mosquito trapping and insecticide susceptibility testing; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Environmental sanitation (water supply administration)	Colombia	2½
1	Public health administration (water and air pollution)	United States of America	12

Work done: The Superintendency of Urbanization and Sanitation (SURSAN) of the state of Guanabara initiated a mosquito control program in Rio de Janeiro, which has a population of nearly 4 million.

The Municipal Department of Water and Sewerage (DMAE) of the Municipality of Pôrto Alegre, Rio Grande do Sul, formulated a plan for studying the pollution of the Guaíba river. A joint SURSAN-PAHO/WHO plan was put into effect to assist DMAE in drawing up a master plan for the sewerage system of Pôrto Alegre. SURSAN engineers began the engineering study. DMAE obtained a loan from the Inter-American Development Bank for the expansion of sewerage works.

Garbage collection and disposal problems were studied in the Prefectures of Santo André, São Bernardo, São Caetano, and São Paulo (São Paulo). At the request of the Municipal Prefecture of São Paulo housing and urbanization problems in that city were investigated.

PAHO/R

BRAZIL-2101 (-68), Air and Water Pollution Control

Objective: To plan and carry out programs for the control of air pollution and surface water pollution in the state of São Paulo, especially in the Capital.

Probable duration: 1963-

Assistance provided: 1 sanitary engineer and advisory services by personnel of Zone V Office; and one 8-month fellowship to study air pollution, in the United States of America.

Work done: The laboratory for testing air samples,

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attached to the Intermunicipal Committee on Air and Water Pollution Control (CICPAA) located in São Caetano, São Paulo, was inaugurated and began to function. Two main stations and 50 secondary stations were installed for the collection of samples. Two CICPAA engineers completed sanitary engineering courses at the School of Hygiene and Public Health of the University of São Paulo.

WHO/UN-TA

BRAZIL-2200 (-49), Water Supplies

Objective: To draw up plans for building water supply systems.

Probable duration: 1962.

Assistance provided: Advisory services by personnel of other projects in the country; equipment and supplies.

Work done: Advisory services were given to the Secretariat of Public Works of the state of Rio Grande do Sul in the installation of equipment for a water fluoridation pilot plant and a study of problems connected with the use of fluorite.

Financed by the Inter-American Development Bank, both the SUDENE (Superintendency of Development of the Northeast) program for expanding the water supply systems in 6 cities of the northeastern part of the country and the work of SURSAN in Rio de Janeiro, where the water supply system is being expanded, continued progressing.

The Special Public Health Service Foundation of the Ministry of Health was concluding negotiations with IADB for a water supply program that would benefit approximately 180 localities with a population of from 5,000 to 40,000. The financing of this program includes a loan of \$12,250,000 and an additional national contribution of 60% during the period 1966-1968.

PAHO/R

BRAZIL-3100 (-65), Planning

Objective: To collaborate with the Federal and State Governments and regional bodies in the formulation of health plans and the training of planners.

Probable duration: 1965-

Assistance provided: 1 adviser in health planning (appointed in November), 2 short-term consultants, and 1 temporary adviser; and 2 fellowships to study health planning in Chile for 3½ months each.

Work done: A course in health planning was held in

Recife, in July-August, at which 24 officials from the health services of 6 States in Northeast Brazil and from SUDENE staff were trained.

PAHO/R

BRAZIL-3101 (-3), Health Services in 9 Northeast States

Objective: To stimulate the development of general health services in selected areas of 9 States of Northeast Brazil.

Probable duration: 1958-1970.

Assistance provided: 2 medical advisers, 1 sanitary engineer, and 1 statistician; a grant; and the following fellowships.

Awards	Field of study	Place of study	Months
1	Nursing services	Puerto Rico	11½
2	Pediatrics	Guatemala	1
1	Sanitary engineering	México	½

Work done: 20 water wells, 3,505 latrines, and 823 septic tanks were built.

Studies were begun in Alagoas, Bahia, Paraíba, Pernambuco, and Sergipe to diagnose the health situation of these states.

A course on health planning was conducted in Recife.

PAHO/R, WHO/R

AID, UNICEF

BRAZIL-3102 (-28), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Environmental sanitation (insect control)	United States of America	2
1	Epidemiology	Ditto	4
1	Organization of medical education	Chile	½
1	Public health administration (community health services)	Bulgaria, France, Sweden, United Kingdom, Yugoslavia	4
2	Ditto (health education)	Brazil	10
1	Veterinary public health	United States of America	6

PAHO/R

BRAZIL-3103 (-39), Health Services (Mato Grosso)

Objective: To improve the public health services of the State of Mato Grosso by strengthening the central organization, regionalizing the services, providing adequate technical supervision, and training personnel.

Probable duration: 1959-1969.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 public health nurse.

Work done: A health survey was begun in 34 localities and was completed in only 23. A survey to determine the nursing resources available revealed that 33 graduate nurses were working in state and private hospitals, 4 were exclusively engaged in private nursing, and 10 were inactive; that 78 of the 162 nursing auxiliaries available were working for the state; and that 51 visiting public health nursing auxiliaries were also active.

The Sanitation Service of the Matto Grosso Foundation was established, with 2 sanitation inspectors and a central office. Various forms relating to environmental sanitation activities and the pertinent instruction sheets were prepared and put into use.

During the first 9 months of the year, 264 pit privies and 834 aqua privies (water-closet latrines) were built. A new water supply system was under construction in Campo Grande, and the studies for supplying water to the city of Cuiabá were nearing completion.

The 2 inspectors of the Sanitation Service and 1 from the Dourados Health Center were trained in supervision techniques. An intensive inservice training course was carried out during March for 10 health visitors; and in a 5-month course training was given to 12 social workers, 6 sanitation auxiliaries, and 3 laboratory auxiliaries. In an 11-month course 12 Peace Corps sanitation auxiliaries were trained and another 6 were receiving training at the end of the year in a course that will last 12 months.

Plans were made to reorganize the Dr. Mario Corrôa da Costa School for Nursing Auxiliaries.

PAHO/R

UNICEF

BRAZIL-3105 (-200), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Air and water pollution	Chile, Perú	1
1	Brucellosis	México	3
1	Clinical and social pediatrics	Chile	3
1	Health administration (hospital administration)	Colombia	4½
1	Hospital archives	Perú	1½
1	Hospital engineering	United States of America	2¼
1	Medical records librarianship	Venezuela	4
1	Public dental health	Colombia, United States of America	2
1	Public health administration (health education)	Puerto Rico	11½
1	Radiology (cytogenetics)	United States of America	1½
1	Zoonosis	Argentina	6

WHO/R

BRAZIL-3200 (-78), Nursing

Objective: To develop the basic aspects of research, planning of activities, organization of services, and education of professional and auxiliary nursing and midwifery personnel.

Probable duration: 1953.

Assistance provided: 1 nurse adviser; and costs of the seminar.

Work done: A seminar to discuss the educational and service aspects of the role of the nurse-midwife, the midwife, and the nurse in maternal and child care throughout Brazil was held from 20 to 29 September in Rio de Janeiro. The discussion and interchange of ideas contributed a great deal towards the development of understanding among the 25 participants representing the 3 groups.

In the Mato Grosso region, 69 nursing auxiliaries or other type of health workers benefited from inservice education programs; and, to improve the services provided by lay midwives, a course was organized with 33 of this group attending.

Special attention was given to the reorganization of the health center of Curaba and the development of procedure manuals. In the services rendered, emphasis was placed on vaccination and immunization programs.

PAHO/R

BRAZIL-3301 (-8), National Virus Laboratory Services

Objective: To expand laboratory facilities for the diagnosis of virus diseases, development of research programs, and production of vaccine at the Oswaldo Cruz Institute.

Probable duration: 1959-1967.

Assistance provided: 1 virologist and advisory services by Headquarters personnel; laboratory equipment and supplies; subscriptions to technical publications for the library; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Laboratory services (virology)	Panamá, United States of America	4½
1	Medical education	United States of America	12

Work done: The systematic use of new tissue cultures made it possible to increase activities for the isolation and typing of enteroviruses for the States of Guanabara and Rio de Janeiro, where the poliomyelitis immunization campaigns called for vigilance. In cooperation with local hospitals a program for studying the viral etiology of

VIII. PROJECT ACTIVITIES

respiratory syndromes was prepared, aimed particularly at establishing the role of the syncytial respiratory virus in affections of the lower respiratory tract.

Research to obtain a more attenuated strain of measles virus than that which is being used at present, but still retaining its immunogenic power, was continued; preliminary results made it possible to culture the strain under study at a temperature of 28°C.

The Institute conducted for 28 recently admitted staff members a 1-year training course of which 5 weeks were devoted to virology; it also organized a 10-week course in medical virology for 8 virologists from several states.

PAHO/G: Lederle Laboratories, WHO/UN-TA

BRAZIL-3302 (-51), Yellow Fever Laboratory

Objective: To support the Hemisphere-wide campaign against yellow fever by providing laboratory diagnostic services and supplying yellow fever vaccine.

Probable duration: 1950-

Assistance provided: An annual grant.

Work done: 3,959,800 doses of vaccine were produced, of which 906,000 were distributed to other countries in the Americas as well as to WHO for the control of an outbreak of yellow fever in Portuguese Guinea and Senegal.

As part of the continental service of epidemiological yellow fever intelligence, 1,252 viscerotomy specimens were examined. Of these, 39 (3.1%) were positive, the distribution being as follows: Bolivia, 3; Brazil, 19; and Perú, 17.

PAHO/R

BRAZIL-3500 (-36), Health Statistics

Objective: To improve the vital and health statistics services, especially those related to the reporting of communicable diseases; and to train personnel in vital and health statistics and in medical records and hospital statistics.

Probable duration: 1963-

Assistance provided: 1 statistical adviser and consultant services by the statistical adviser assigned to project Brazil-3101 and the short-term consultant of project AMRO-6208.

Work done: Volume I of the *Classificação Internacional de Doenças* was released by the printer in June. The Organization printed 2,000 copies for distribution

and the Brazilian Federal Service of Biostatistics ordered another printing.

The University of São Paulo translated into Portuguese the *Clasificación Internacional de Enfermedades—Adaptada para Índice de Diagnósticos de Hospitales y Clasificación de Operaciones*. Copy was sent to the printer in December 1965.

Work to improve medical records and hospital statistics was started in Ribeirão Preto by establishing a new system at the University Hospital. The Department of Applied Statistics of the School of Public Health of the University of São Paulo introduced improvements in its teaching of how to keep medical records and hospital statistics. Statistical units were organized in the states of Pará and Mato Grosso as well as in the Northeast States.

The collection of data on cases of smallpox was begun in nearly all the states.

Two courses were given to train statistical auxiliaries for the Northeast States: the one in Recife, from 2 to 27 August, was held for 25 students of which 15 were from Pernambuco, 4 from Alagoas, 4 from Paraíba, and 2 from Sergipe; and the one in Fortaleza, from 3 to 29 November, for 32 students of which 29 were from Ceará, 2 from Rio Grande do Norte, and 1 from Piauí.

PAHO/R, WHO/R

BRAZIL-4200 (-7), Nutrition

Objective: To develop a program to improve the nutritional status of the population of the nation—through maximum utilization of locally available foods, education in good dietary habits, and the organization of nutrition courses for professional and auxiliary personnel engaged in health, education, and agriculture.

Probable duration: 1960-1968.

Assistance provided: 1 medical officer; a grant to the Brazilian Association of Medical Schools to help defray the cost of a seminar; and one 8½-month fellowship for medical education studies in Guatemala.

Work done: A Seminar on Nutrition in Medical Education was held from 24 to 30 October in Pôrto Alegre, Brazil, under the auspices of the Organization. Representatives from 32 schools of medicine of Brazil participated in the seminar, which dealt with 3 main subjects: modern concepts of nutrition and their inclusion in the curriculum, methods of nutrition education at the undergraduate level, and the role of the physician in applying nutrition concepts. A tentative guideline curriculum for use in medical schools was drawn up by the participants,

and the recommendations of the seminar were endorsed by the Brazilian Association of Medical Schools.

PAHO/R, PAHO/G: Williams
Waterman Fund, WHO/R **FAO, UNICEF**

BRAZIL-4201 (-61), Nutrition Courses

Objective: To establish facilities for the training of physicians in the field of public health nutrition, at selected Brazilian Universities.

Probable duration: 1963-1967.

Assistance provided: A grant for the program; and technical advisory services by personnel of Zone V Office and other projects in the country.

Work done: 3 courses in nutrition were conducted at the Schools of Medicine of Belém, Belo Horizonte, and Pôrto Alegre for 58 physicians. Each course lasted 4 weeks and included an evaluation of the course.

PAHO/R

BRAZIL-4203 (-76), Institute of Nutrition (Recife)

Objective: To improve nutrition services in the Northeast, by means of applied research and training programs to meet the needs of the area.

Probable duration: 1964-1967.

Assistance provided: A grant for the program; and technical advisory services by personnel of Zone V Office and other projects in the country.

Work done: A 1-month course in nutrition was conducted in August for 15 physicians. A physician was appointed to head the Department of Nutrition and Public Health of the Institute of Nutrition. A demonstration area was organized for the training of personnel and began operating in February in Ribeirão, 80 km from Recife, Pernambuco.

PAHO/R

BRAZIL-4707 (-18), National Food and Drug Service

Objective: To cooperate in strengthening the general laboratory and food and drug control services.

Duration: 1955-1965.

Assistance provided: 1 fellowship in 1955 and another in 1959; 1 drug control adviser in 1957 and 1 short-term consultant in 1958; limited amounts of equipment and

supplies; and advisory services by the technical staff of Zone Office V throughout the entire period.

Work done: During the execution of this project, the Government constructed a building in Rio de Janeiro in which the food and drug analysis laboratories were installed under the technical advice of the Organization. New legislation was prepared and enacted. A plan was also prepared for the gradual development and expansion of tables and regulations for food additives.

A study was made of the national services responsible for the control of food, drugs, and biological products, on which a special report was prepared for the national public health authorities. In accordance with the recommendations in the report, the Organization provided advisory services on food and drug control to the federal laboratory and the Adolfo Lutz Institute (São Paulo). Laboratory personnel was also trained in various analysis techniques and handling of equipment. The general laboratory in Rio de Janeiro was provided with reagents, equipment (spare parts), and technical publications.

BRAZIL-4801 (-31), Rehabilitation

Objective: To reorganize the Department of Occupational Therapy of the Institute of Rehabilitation of the University of São Paulo; and to organize training courses and rehabilitation centers throughout the country.

Probable duration: 1958-1961; 1963-1966.

Assistance provided: 1 adviser in occupational therapy and consultant services by the Regional Adviser in rehabilitation (AMRO-4807).

Work done: Administrative improvements continued to be made in the Department of Occupational Therapy of the Institute of Rehabilitation at the University Hospital. Twenty students continued to receive training in this subject: 9 were graduated in December and 11 entered the second year of training. Rehabilitation techniques for certain types of mental patients were taught in a section provided by the Institute of Rehabilitation.

All the material to be used in the textbook for teaching occupational therapy was translated into Portuguese.

A refresher course for 23 occupational therapists was given at the Orthopedic and Injury Clinic.

WHO/UN-TA

ILO, UN-TAO

BRAZIL-4802, Training in Orthopedic Brace-Making

Objective: To expand rehabilitation services for the handicapped in Brazil, by providing personnel training

VIII. PROJECT ACTIVITIES

in orthotic techniques through courses in the manufacture of low-cost, high-quality prostheses and in their modification, fitting, and adjustment.

Probable duration: 1964-1968.

Assistance provided: 1 short-term consultant and consultant services by the Regional Adviser in rehabilitation (AMRO-4807); and one 12-month fellowship to study rehabilitation in the United States of America.

Work done: The first of three planned 4-month courses in the manufacture of orthotics, was conducted for students from Bolivia, Brazil, Colombia, Dominican Republic, and Ecuador.

WHO/R

UNICEF

BRAZIL-6100 (-19), School of Public Health (Rio de Janeiro)

Objective: To introduce modern training methods and improve practice areas; to develop laboratory and library services; and to obtain full-time teaching staff for the National School of Public Health.

Probable duration: 1957-1967.

Assistance provided: Advisory services by Headquarters personnel.

Work done: A new letter of agreement was signed incorporating many new facets of advisory services and other type of collaboration.

PAHO/R

BRAZIL-6101 (-35), School of Public Health (São Paulo)

Objective: To strengthen the School of Hygiene and Public Health of the University of São Paulo with emphasis on its use as an international center for the training of health workers.

Probable duration: 1958-1968.

Assistance provided: Teaching equipment and supplies; and one 7½-month fellowship to study health statistics, in Chile.

Work done: Tentative plans for future action regarding this project were discussed with the new dean of the school.

WHO/R

BRAZIL-6200, Medical Education

Objective: To strengthen medical education in the country with emphasis on the teaching of preventive and social medicine.

Probable duration: 1965-1969.

Assistance provided: 2 short-term consultants and advisory services by Zone V Office personnel; office space for the Pan American Federation of Associations of Medical Schools and for the Brazilian Association of Medical Schools; and the following fellowships:

<i>Awards</i>	<i>Field of study</i>	<i>Place of study</i>	<i>Months</i>
1	Organization of medical education (cardiac surgery)	Argentina	1½
1	Ditto (pathology)	United States of America	9
1	Ditto (teaching of preventive medicine)	Chile, Colombia, Venezuela	3
1	Ditto	Colombia, Puerto Rico, United States of America, Venezuela	3
1	Ditto (tropical medicine)	Germany, Netherlands, United Kingdom	2

Work done: The Medical Schools of the University of Recife and the University of São Paulo (Ribeirão Preto) conducted, with the technical assistance of the consultants, a series of lectures on biostatistics.

PAHO/R

BRAZIL-6201 (-59), Teaching of Preventive Medicine (University of Ceará)

Objective: To improve teaching at the Institute of Preventive Medicine of the Medical School of the University of Ceará.

Probable duration: 1963-1966.

Assistance provided: 1 short-term consultant in statistics and 1 public health nurse (January-June); and one 11½-month fellowship to study public health nursing in Puerto Rico.

Work done: 30 students received training in a medical statistics course. The teaching of preventive medicine was integrated in the first- and third-year curricula of the School of Nursing.

PAHO/R

BRAZIL-6202 (-64), Pediatric Education (Recife)

Objective: To improve the teaching of pediatrics in the School of Medicine of the University of Recife; and to extend teaching activities to professional and auxiliary personnel and to the community at large.

Probable duration: 1963-1968.

Assistance provided: A grant for the Pediatrics Department.

Work done: The Department of Pediatrics continued training medical and paramedical personnel.

PAHO/R

UNICEF

BRAZIL-6203, Research Training

Objective: To develop a Regional Training Center for teachers and researchers in the field of microbiology, utilizing the resources of the Institute of Microbiology at the University of Brazil, in Rio de Janeiro.

Probable duration: 1965-

Assistance provided: A grant to the Institute.

Work done: The director of the Center reviewed 28 applications. The first PAHO fellows—1 each from Chile, Ecuador, El Salvador, and Uruguay, and 2 from Paraguay—began training at the Center on 3 October 1965.

PAHO/R

RF

BRAZIL-6301 (-60), Nursing Education (Recife)

Objective: To develop in the School of Nursing of the University of Recife a center for postgraduate nursing education for use by the North and Northeast of Brazil.

Probable duration: 1963-1966.

Assistance provided: The following fellowships:

Awards	Field of study	Place of study	Months
1	Nursing education	Colombia, Puerto Rico, Venezuela	3
1	Ditto	United States of America	1½

WHO/R

BRAZIL-6302 (-63), Training of Nursing Auxiliaries

Objective: To improve the quality of the training of nursing auxiliaries; and to increase the quantity of trained nursing auxiliaries.

Probable duration: 1963-1967.

Assistance provided: 1 nurse educator; supplies and equipment; and two 1½-month fellowships each, to study nursing education in the United States of America.

Work done: A questionnaire was circulated to 17 schools for the training of auxiliaries and limited data

were obtained on 15 of the schools. Lack of funds prevented the national counterpart and the international nurse adviser from visiting the schools as originally planned.

To strengthen the faculties of the schools a 4-month course in teaching and supervision was organized in the school of nursing of the University of Recife; 17 nurses attended.

The School of Nursing in San Luiz, Maranhão, conducted a 4-week refresher course for nurses in the health services where the students get the clinical experience.

A 1-week seminar held in Recife in November was attended by 14 directors and assistant directors and 3 instructors of schools for the training of auxiliaries. The topics discussed included evaluation of programs; ways in which a school may influence improvement of services, especially those in which the students obtain clinical experience; and recruitment and selection of students.

Translation into Portuguese and adaptation to the auxiliary-training level of *Introduction to Asepsis: A Programed Unit in Fundamentals of Nursing*¹ was completed. Testing of this material was begun and will continue in 1966.

PAHO/R

UNICEF

BRAZIL-6400 (-82), Institute of Sanitary Engineering

Objective: To combine the sanitary engineering laboratory facilities of the Institute of Sanitary Engineering of SURSAN with those of the College of Engineering of the University of Guanabara; and to develop the combined laboratory facilities as a center for education, research, and service for all the educational institutions in the Rio de Janeiro area.

Probable duration: 1964-1969.

Assistance provided: 1 project manager and supporting services through Headquarters and Zone V Office personnel; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Environmental sanitation	United States of America	8
1	Ditto	Ditto	3
1	Ditto	Ditto	7

Work done: The Plan of Operations was signed on 2 June. The grant from the United Nations Special Fund extends over a 4-year period and provides for specialized

¹ Seedor, Marie M., M.D. Bureau of Publications, Teachers College, Columbia University, New York, U.S.A.

VIII. PROJECT ACTIVITIES

consultants, fellowships, equipment and supplies, and library and information services.

By the end of the year, new space for the total operation was nearly completed; 6 specialists had reviewed the programs; equipment and supplies, reference books and journals, audiovisual aids and other materials in the amount of some US\$50,000 had been requisitioned; 5 fellowship applications were under review and 1 person was already in the United States for training (see above). Thirty persons were trained in 4 courses conducted at the Institute (see Table 27).

PAHO/R, WHO/UN-SF

BRAZIL-6401, Sanitary Engineering Education

Objective: To improve the technical training of engineers and other professional personnel working in sanitary engineering, particularly water supply, by offering appropriate short courses at the universities of Bahia, Paraíba, Paraná, Pôrto Alegre, Recife, and São Paulo.

Probable duration: 1965-1970.

Assistance provided: 2 short-term consultants and advisory services by personnel of other projects in the country; and grants.

Work done: The following short courses were held: water supply projects for small communities, from 18 January to 12 February, in Recife, Pernambuco, for 31 professionals, 29 of them local, 1 from the Dominican Republic, and 1 from Uruguay; water treatment plant operation and maintenance, from 20 September to 21 October, Pôrto Alegre, Rio Grande do Sul, for 12 local professionals; water treatment plant operation and maintenance, from 11 to 22 October, Salvador, Bahia, for 18 local professionals; water supply administration, from 25 October to 5 November, Recife, Pernambuco, for 20 local professionals; water meters and house connections, from 1 to 13 November, Campina Grande, Paraíba, for 20 local professionals; and water treatment plant operation and maintenance, from 29 November to 11 December, in São Paulo, for 30 local professionals.

PAHO/R

BRAZIL-6500 (-44), Veterinary Medicine Education

Objective: To improve the teaching of public health and related subjects in the schools of veterinary medicine of the country.

Probable duration: 1960-1967.

Assistance provided: 1 short-term consultant and advisory services by personnel of the Pan American Zoonoses Center; a limited amount of supplies; and one 6-month fellowship to study veterinary public health (fluorescent antibody diagnosis techniques), in Argentina.

Work done: A detailed evaluation was made of the entire teaching program, including facilities and administrative services in schools of veterinary medicine at the Rural University in Rio de Janeiro, the University of Belo Horizonte (Minas Gerais), the University of Pôrto Alegre (Rio Grande do Sul), and the University of São Paulo.

In cooperation with the Pan American Zoonoses Center several schools were provided with reagents, biologicals, teaching material, and technical publications.

The Department of Epidemiology of the School of Veterinary Medicine of São Paulo was planning to conduct studies on arteriosclerosis in wild birds.

PAHO/R

BRAZIL-6600 (-43), Teaching of Preventive Dentistry

Objective: To develop the teaching program of preventive and social dentistry in the dental schools of the country.

Probable duration: 1963-

Assistance provided: Advice by Headquarters personnel.

Work done: In collaboration with the Brazilian Institute of Microbiology a program of advanced training for teachers of 15 dental schools in the country was organized.

PAHO/R

BRAZIL-6601 (-37), Dental Health Education

Objective: To operate, at the School of Hygiene and Public Health of the University of São Paulo, an International Epidemiology Center for public health dentists and teachers of preventive and social dentistry in Latin American dental schools; to provide for dentists attending the regular public health course at the School training in specific fields of dentistry; and to build up a faculty with training in teaching and research in public health dentistry.

Probable duration: 1958-1969.

Assistance provided: Advisory services by the Regional Adviser in dentistry; a grant to increase the number of dentists and dental auxiliaries who will be respon-

sible for the extra activities at the International Epidemiology Center; equipment and supplies; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Dental public health (epidemiology)	United States of America	2¾
1	Ditto (teaching)	Ditto	3
1	Organization of public health teaching (public health dentistry)	Ditto	11
1	Social and preventive dentistry	Colombia, El Salvador, Venezuela	2½

Work done: The School continued to act as training center for public health dentists and teachers of preventive and social dentistry in Latin American dental schools. The curriculum of the regular course for dentists was revised, and certain aspects were added to enable the graduate to teach preventive and social dentistry. A manual of standard methods for examining dental caries was prepared. The International Center for Dental Epidemiology and Research (CIEPO) was established, in cooperation with the United States Public Health Service and the W.K. Kellogg Foundation, and the Organization was placed in charge of coordinating its activities. A plan was prepared for giving advanced training in dental epidemiology and research methodology to 15 public health dentists from various countries (teachers at dental schools or officials in Health Services).

PAHO/R

KF

BRAZIL-6700, Biostatistics Education (São Paulo)

Objective: To make available in Portuguese teaching material and the *International Classification of Diseases*; and to train personnel in the use of the Classification.

Probable duration: 1965-1970.

Assistance provided: A grant for translating teaching material into Portuguese and a grant to the University of São Paulo in support of a course in statistics.

Work done: Volume I of the *International Classification of Diseases* was published in Portuguese by the Bureau and 2,000 copies were distributed; Volume II and the *Clasificación Internacional de Enfermedades—Adaptada para Índice de Diagnósticos de Hospitales y Clasificación de Operaciones* were being translated into Portuguese.

The School of Hygiene and Public Health of the University of São Paulo conducted a 2-week course for some 15 students from several states in southern Brazil.

PAHO/R, WHO/R

BRAZIL-6701, Biostatistics Education (Belo Horizonte)

Objective: To train personnel on the International Classification of Causes of Death.

Place and duration: Belo Horizonte, Minas Gerais; 13-29 September 1965.

Assistance provided: A grant to the University of Minas Gerais.

Work done: The course was held at the School of Medicine of the University of Minas Gerais, for 30 students from the following states: 1 each from Acre, Espírito Santo, Maranhão, and Piauí; 2 each from Bolívar, Ceará, Goiás, Paraíba, Pernambuco, and Sergipe; 4 from Guanabara, and 10 from Minas Gerais.

WHO/R

BRITISH GUIANA²-0200 (-5), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1961-1968, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 sanitation inspector, 1 short-term consultant, and advisory services by the technical malaria staff of Zone I; and drugs.

Work done: 61,507 blood smears were examined with only 28 (0.045%) cases being found: 15,500 of the smears and 1 of the positives were from areas in consolidation phase, and 23,057 smears and 2 positives were from areas in maintenance phase.

The medicated-salt program that had been operating in the interior of the country was so successful that it could be discontinued in the Northwest and in the Mazaruini-Potaro-Cuyuni districts, which entered the consolidation phase during the second quarter of the year. Medicated salt continued to be distributed in the Rupununi district, where DDT spraying was also carried out. It appeared that DDT spraying (initiated after the discovery that strains of *Plasmodium falciparum* resistant to chloroquine existed in the area and were reducing the efficacy of the chloroquinated-salt distribution) was succeeding. Great efforts were being made to locate and spray the temporary shelters that the inhabitants construct at their planting grounds, in or near which the remaining transmission generally occurs.

PAHO/SMF

UNICEF

² Guyana, as of 26 May 1966.

BRITISH GUIANA-2200, Water Supplies

Objective: To establish a Water and Sewerage Corporation.

Probable duration: 1965-

Assistance provided: 1 short-term consultant.

Work done: The consultant visited British Guiana for 2 weeks, in order to assist the pertinent authorities in drafting a Bill for the establishment of a Water and Sewerage Corporation. The pertinent report was transmitted to the Government.

PAHO/R

BRITISH GUIANA-2300 (-51), *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Probable duration: 1946-1962 (part of AMRO-8); 1965-1967.

Assistance provided: Advisory services by the medical adviser and the sanitation inspector assigned to project AMRO-2301.

Work done: The Government resumed eradication activities in Georgetown, the capital, from which the campaign will subsequently be extended to other areas of Guiana (the territory was found to be extensively reinfested in 1962). In March, when the first treatment of Georgetown was begun, the infestation index was 7.1 (1,773 houses out of 24,856 houses inspected); despite repeated treatment, the index at the end of the year was 2.6. This increase was due to technical and administrative difficulties faced by the campaign since its beginning, among them the low susceptibility of the mosquito to chlorinated insecticides, inaccessible breeding places, and poor management of field personnel.

BRITISH GUIANA-3100 (-10), National Health Services

Objective: To organize, expand, and integrate health services and environmental sanitation activities in the heavily populated coastal area and in isolated communities in the interior of the country.

Probable duration: 1963-1967.

Assistance provided: 1 medical adviser and 1 sanitary engineer; and one 4-month fellowship to study health statistics, in Jamaica.

Work done: A national health plan was prepared for inclusion in the 5-year health plan. Studies were made of the means for expanding and integrating the health ser-

vices of New Amsterdam, Berbice County, with an estimated population of 13,000.

A program to supply rural areas with water was prepared and was being studied by the Ministry of Health. Six wells were built to benefit a population of 52,000, and 5 water pumps were installed. Of the 2,200 latrines established as the goal for the year, 905 were built to serve 5,430 persons.

Under the school sanitation program, 72 privies were installed in 39 schools and wells were built in 23 schools. This program benefited 8,000 children.

The 2 courses begun in 1964, one for 24 visiting public health nursing auxiliaries and the other for 19 health inspectors, were completed.

WHO/R

UNICEF

BRITISH GUIANA-3200 (-13), Nursing Services

Objective: To provide better health services in the country through continuous improvement of nursing services.

Probable duration: 1960-1963; 1965-

Assistance provided: Consultant services by the nurse adviser assigned to project Trinidad and Tobago-3200.

Work done: In collaboration with the national authorities the major problems in nursing both in health service development in hospitals, health centers, and schools and the basic nursing education program were identified. A plan of suggested improvements was drawn up.

Four candidates for fellowships were interviewed.

WHO/UN-TA

BRITISH HONDURAS-0200 (-1), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1956-1968, year in which the consolidation phase is expected to be completed.

Assistance provided: Advisory services by the Zone III malariologist (see AMRO-0203); supplies and anti-malarial drugs.

Work done: A serious outbreak of malaria occurred in June in the southern district of Toledo. The first cases were imported from a neighboring country only 7 miles distant by foot trail. Because of the isolation of the area from the rest of the country and the consequent delay in collecting and examining blood smears, the infection had spread to a number of villages before it was detected.

Emergency spraying and radical-cure treatment of all suspected cases were used to bring the outbreak under control.

Collective treatment with chloroquine-primaquine tablets on 2-week cycles was supplemented by semiannual DDT spraying in a small area with a population of 1,054 in the District of Corozal. The area had been producing cases since it was placed in consolidation phase in 1962.

Of 10,787 blood smears examined, 206 (1.9%) were positive.

PAHO/SMF

UNICEF

BRITISH HONDURAS-2200 (-7), Water Supplies

Objective: To gather under a central authority the management of water supply and sewerage services; to expand the water supply services of Belize and Stann Creek; and to develop a program for the construction of rural waterworks.

Probable duration: 1964-1967.

Assistance provided: 2 short-term consultants (1 hydrogeologist and 1 drilling expert), consultant services by the engineer of project British Honduras-3100 and by specialized personnel of Zone III Office.

Work done: The Bill for the establishment of a water authority was reviewed. Work was begun on the construction of the Stann Creek water supply system and on the investigation of the characteristics of the ground water which supplies the city of Belize. The construction of rural waterworks also began, with community participation.

WHO/R

BRITISH HONDURAS-3100 (-5), Health Services

Objective: To reorganize, expand, and improve the general health services, beginning with the development of an environmental sanitation plan.

Probable duration: 1962-1968.

Assistance provided: 1 sanitary engineer; equipment and supplies; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Public health nursing	Jamaica	12
1	Sanitary engineering	United States of America	3

Work done: During the first 10 months of the year, 319 privies, or 67.6% of the 472 planned for the year, were installed.

Ten percent of a water supply system (planned in 1964) was built; and the construction of 32 sanitary wells was begun, but it was necessary to suspend the work because of the chloride content found in the water.

WHO/R

UNICEF

BRITISH HONDURAS-3101 (-6), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Environmental sanitation	El Salvador	½
1	Laboratory services (medical technology)	Jamaica	12

PAHO/R

BRITISH HONDURAS-6300 (-9), Nursing Education

Objective: To study the country's nursing needs and resources in order to develop, at the Belize School of Nursing, a basic education program that will include teacher training and integration of preventive and curative medicine concepts, as well as social and community development aspects.

Probable duration: 1964-1966.

Assistance provided: 1 nurse educator (beginning in September) and consultant services by the nurse adviser assigned to project AMRO-3203.

Work done: Several committees were organized and began functioning. Plans for a survey of nursing needs and resources and for the preparation of auxiliary nursing personnel were drawn up and submitted to the health authorities for their approval. A list of the equipment and books needed for the nursing school was prepared.

A quantitative study of the personnel working in midwifery revealed that there were 67 nurse midwives, 38 auxiliaries, and 136 lay midwives.

The adviser assigned to this project devoted part of her time to the nursing education project in Honduras, an arrangement planned to continue in 1966.

WHO/R

CANADA-3101 (-200), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Health education	United States of America	12
1	Public health administration	Denmark, Soviet Union	3½

WHO/R

CHILE-0400 (-10), Tuberculosis Control

Objective: To organize in the commune of La Cisterna of the province of Santiago a demonstration area to obtain epidemiological information, apply and evaluate practical methods of tuberculosis control, and train medical and auxiliary personnel for the gradual extension of the program to other areas of the country.

Probable duration: 1964-1968.

Assistance provided: 1 short-term consultant and advisory services by personnel of Zone VI Office; one 1-month fellowship for the study of tuberculosis (laboratory techniques), in Venezuela.

Work done: Program activities were resumed in March, after new personnel had been trained and a new program chief appointed. From that time to August, 16,643 photofluorographies were taken, 39 active cases (0.35%) were detected in a sample of 10,905, and 10,367 tuberculin tests were performed.

PAHO/R

UNICEF

CHILE-0600, Venereal Disease Control

Objective: To provide training in laboratory techniques for the diagnosis of venereal diseases.

Place and duration: Santiago, Chile; 8-9 and 22-26 November 1965.

Assistance provided: 2 officers of the Communicable Disease Center of the United States Public Health Service, acting as short-term consultants, and advisory services by Headquarters personnel; and a limited amount of laboratory equipment and supplies.

Work done: Two 15-day courses on laboratory techniques for venereal disease diagnosis were held: the first was attended by medical officers of the Bacteriological Institute, and the second by medical officers in charge of laboratories in the various hospitals of Santiago, Chile, and 1 laboratory expert from the National Institute of Microbiology of Buenos Aires, Argentina. Most of the teaching was done by the 2 experts from the Department of Venereal Disease of the USPHS Communicable Disease Center.

PAHO/R

USPHS

CHILE-0700, Veterinary Public Health

Objective: To plan and organize public health campaigns for the control of zoonoses.

Duration: January-May 1965.

Assistance provided: Advisory services and biological

materials provided by the Pan American Foot-and-Mouth Disease Center and the Pan American Zoonoses Center.

Work done: A start was made on the preparation of a national 5-year plan for the control of foot-and-mouth disease.

The two Centers provided the Zoonoses Section and the Bacteriological Institute of the National Health Services and the School of Veterinary Medicine of the National University with advisory services, as well as with diagnostic antigens, other biological material, and technical publications.

PAHO/R

CHILE-2200 (-40), Water Supplies

Objective: To plan and carry out a national water supply program and in particular to design and build an expansion to the water supply system of the city of Santiago.

Probable duration: 1960-1967.

Assistance provided: Advisory services by the engineering staff of Zone VI.

Work done: The National Health Service continued to develop the rural water supply program. Up to the end of the year, Chile had received loans in the amount of \$2,840,000 from the Inter-American Development Bank for water supply and sewerage works in which the country will invest over \$10 million.

CHILE 3100 (-49), Health Services

Objective: To strengthen the health services in the southern part of the country in order to meet the needs of the population of the area (34% of Chile's total population) devastated in 1960 by a violent earthquake; and to provide water-supply and sewerage services to the rural population of the area, numbering 960,000 inhabitants.

Probable duration: 1961-1970.

Assistance provided: 1 medical adviser and 1 short-term consultant; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Epidemiology	Czechoslovakia, France, Sweden, United Kingdom, Yugoslavia	3
1	Nursing education	United States of America	6
1	Nutrition	Ditto	1
1	Organization of medical education	Brazil, Colombia, Puerto Rico, Venezuela	2½
1	Ditto	United States of America	12
1	Pathology	Ditto	6

Work done: The hospitals damaged by the 1960 earthquake were rehabilitated and the services which had been destroyed were restored.

PAHO/R, WHO/UN-TA

UNICEF

CHILE 3101 (-25), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Application of electronic computers	Colombia	½
1	Medical care administration	Czechoslovakia, Netherlands, Sweden, Switzerland, United Kingdom, Yugoslavia	2½
1	Medical records librarianship	Venezuela	¾
1	Nursing education	United States of America	1½
1	Organization of maternal health services	Ditto	5
1	Organization of medical education (pediatrics)	Colombia, México, United States of America	1
2	Pediatrics (child health and development)	Guatemala	1

WHO/R

CHILE 3102 (-26), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Health statistics	France, United Kingdom, United States of America	3
1	Microbiology	Brazil	6
1	Organization of public health teaching	France, United Kingdom, United States of America	3
1	Rabies (production of vaccines)	Denmark, Federal Republic of Germany, France, Italy, United States of America	2½

PAHO/R

CHILE-3103 (-27), Public Health Services

Objective: To develop a plan to provide integrated health services to the urban and rural populations of the departments of Copiapó and Vallenar in the province of Atacama and to those of Illachapel, La Serena, and Ovalle in the Province of Coquimbo.

Probable duration: 1958-

Assistance provided: Advice by personnel of Zone Office VI and other projects in the country.

Work done: In October 1965 the services provided 118 hours of professional pediatric care in hospitals and out-patient clinics. There were 219 beds and 85 rural health posts in the area.

Sixty-two rural nursing stations were established, in building provided by the communities, to offset the shortage of beds to meet the demand.

An 8-month nursing-auxiliary course was conducted in the city of La Serena for 34 students; and in the hospitals of La Serena and Vallenar 40 students received inservice nursing-auxiliary training.

Eighty-three water pumps and 1,593 privies were installed, bringing the total in the area since the beginning of the program to 475 pumps and 4,606 privies.

At the end of 1965 this project was integrated into project Chile-3100.

UNICEF

CHILE-3200 (-41), National Planning for Nursing

Objective: To improve the quality of the nursing care given in the health services; and to prepare adequately trained professional and auxiliary personnel for the needs of the country.

Probable duration: 1960-1969.

Assistance provided: 1 nurse educator, 2 short-term consultants, consultant services by the nurse adviser assigned to project AMRO-3206; and one 12-month fellowship to study nursing education (administration) in the United States of America.

Work done: The program of inservice education for nurses in key positions in the National Health Service continued with the assistance of one of the short-term consultants. The second worked in the advanced course for the preparation of nursing instructors which was given in the School of Public Health. Reports on these subjects were sent to the Government.

As a continuation of the 2 regional seminars held in 1964, the 3rd and 4th seminars for service personnel were conducted in Santiago and Valparaíso; in the latter, 22 nurses and 14 midwives participated.

In advanced nursing education, the course in nursing services administration enrolled midwives. A new program for the preparation of teachers in schools of nursing and midwifery was opened in the Department of Education of the School of Public Health with the collaboration of the School of Philosophy of the University of Chile.

VIII. PROJECT ACTIVITIES

In March, 20 students who had completed the first 2 years of the nursing program in the community college in Temuco were received at the Austral University for completion of the 4-year course in nursing. This gave rise to an analysis of the preparation of the junior college group, and as a result it was decided that schools of nursing should be established in the towns where the 2-year program was being given, so as to enable the students to complete their basic nursing education without the need to transfer to schools of nursing in other provinces. In effect this meant that 3 new schools of nursing were established outside the 3 major cities of Chile, and a fourth was in process of development.

Enrollment in schools of nursing in Chile in 1965 was 1,084 students (as against 872 in 1964 and 353 in 1960). A similar increase occurred in the training of nursing auxiliaries: 308 were trained in 1960; 864 in 1964; and 970 in 1965.

WHO/R

CHILE-4200 (-35), Nutrition

Objective: To develop a coordinated program to improve the nutritional status of the population of the provinces of Atacama, Coquimbo, and Linares by increasing the number of school breakfasts, developing vegetable gardens in selected schools, and organizing an education program for teachers and the general public.

Probable duration: 1960-

Assistance provided: Advice by personnel of other projects in the country.

Work done: The program was expanded from the initial 100 schools to 150. UNICEF donated the garden tools for the additional 50 schools. Two seminars were held to train the 100 teachers from the schools added to this project.

UNICEF

FAO, UNICEF

CHILE-4300, Mental Health

Objective: To conduct epidemiological studies on mental diseases; and to develop methods and procedures for psychiatric care in the communities.

Probable duration: 1965-1966.

Assistance provided: 1 short-term consultant and per diem of a visiting WHO officer.

Work done: The consultant visited the United States to observe activities relating to the study on alcoholism which is to be conducted under the research program.

The design for the epidemiological investigation of

mental health, in which special emphasis will be given to studies on epilepsy, was prepared in cooperation with the WHO Chief of Statistical Methods.

PAHO/R

CHILE-4601 (-22), Institute of Occupational Health

Objective: To establish an Institute of Occupational Health and Air Pollution Research which will provide services and training facilities for Chile and other countries of the Americas.

Probable duration: 1961-1968.

Assistance provided: 1 consultant on industrial hygiene (who also serves as Regional Adviser) and 3 short-term consultants; and equipment and laboratory materials.

Work done: The Institute of Occupational Health and Air Pollution Research conducted research on heat exposure and pulmonary function. The program on radioactive fallout and the dosimetry service of the Radiological Protection Laboratory were continued. The latter included about 800 exposed persons. A study of the effects of gas exchange on pulmonary ventilation among silicotics in order to determine their incapacity was initiated for medicolegal purposes.

In the field, a study was completed on 834 iron miners, as well as an investigation on the health of 406 workers in the nitrate fields. The Institute also conducted a study of nearly 2,000 workers employed in certain copper mines in the North of Chile. The results of these studies were being analyzed.

One of the short-term consultants was engaged in air pollution research, with particular emphasis on meteorology. The consultant presented a comprehensive report on the air pollution problem in Santiago, Chile, and outlined a course of action to be carried out by the Institute personnel concerned with this problem. A second short-term consultant cooperated with the School of Public Health in the preparation of an occupational health curriculum, of a full academic year, for physicians and engineers and, in addition, outlined a program of research in occupational health. The third short-term consultant outlined for the Institute a course of investigation with particular emphasis on work physiology.

The first training course presented by the Institute of Occupational Health was for the purpose of training technicians in industrial hygiene and safety and was held from 3 May to 30 September. This course, of some 560 hours of lectures, was attended by 16 students, one each

from Argentina and Panamá, 3 from Chilean industry, and 11 sponsored by the National Health Service of Chile. Other teaching activities on the part of Institute staff consisted of 9 three-hour sessions for students of preventive medicine; of lectures on radiological protection sponsored by the School of Medicine (Santiago) of the University of Chile; and a course for 18 chemists, held at the Catholic University. Individual instruction was given to members from industry working in industrial hygiene. Members of the Institute's staff also participated in an introductory course in industrial hygiene, presented to 32 students at the School of Public Health; a safety course for hospital directors; an orientation course for 60 industrial workers; and lectures in industrial medicine for 50 medical students in the sixth year.

In addition to its research and teaching activities, the Institute provided considerable amount of services to industry, the National Health Service, and other governmental agencies. Nearly 80% of the funds allotted for equipping the Institute had been spent in modern instruments and the equipment had been installed and was in operation. The Institute's complement of personnel consisted of 10 professionals and 16 administrative and clerical staff members, working full-time; it also had the benefit of 60 man-months in part-time professional and technical services.

WHO/UN-SF, WHO/Other

CHILE-4801 (-21), Rehabilitation Center

Objective: To develop a nationwide medical rehabilitation program, including the coordination of all resources available; to organize a Rehabilitation Center in Santiago, with inclusion of a prosthesis workshop and facilities for training personnel for the entire country; and to establish rehabilitation services in selected cities of the provinces.

Probable duration: 1960-1968.

Assistance provided: 1 prosthesis adviser and 1 occupational-therapy adviser; and equipment and supplies.

Work done: The Pilot Center for Total Rehabilitation was officially inaugurated in Santiago.

The prosthesis and orthosis workshop of Outpatient Department No. 2 in Santiago increased production until it was able to meet a good part of the country's demands, especially prostheses for amputees living in rural areas or away from the Capital.

The National Health Service planned to finish the prosthesis and orthosis repair workshops in the hospitals in Talca and Valdivia, and had under study plans for

building 2 more workshops in Antofagasta and Concepción.

Occupational therapy personnel and equipment were distributed among Outpatient Department No. 2, the Psychiatric Clinic at the University of Chile, the Pedro Aguirre Cerda Sanatorium, the Psychiatric Hospital, and Salvador Hospital, all in Santiago, and the Valparaíso Hospital-Sanatorium. Plans were made to establish in the next few years specialized centers in Antofagasta, La Serena, Concepción, Talca, and Valdivia, taking advantage of the fact that some graduate students and others about to graduate from the Center live in those cities.

The second course on the manufacture of prostheses and orthoses was completed, with 4 technicians graduating; a new 3-year course began in May, with 10 students.

The Center continued the course in occupational therapy, from which 8 students were graduated; 12 students were in the second year, and 11 in the first year of the course.

A Seminar on Rehabilitation was held in May under the auspices of the National Health Service. During the meeting the devices manufactured in the workshop of Outpatient Department No. 2 were exhibited.

WHO/UN-TA

CHILE-4802, Cancer

Objective: To organize a referral Department of Cytology for the detection of cervical-uterine cancer, as a first step for establishing a program to provide this service.

Probable duration: 1965-1968.

Assistance provided: Equipment and supplies; and honorariums.

Work done: The National Public Health Service and the National Medical Service for Employees contributed financially to the organization of a Cytology Department at the School of Medicine of the University of Chile. The Department began operating and detected a certain number of cervical-uterine neoplasia among patients; inservice training of personnel was conducted at the same time.

PAHO/R

CHILE-6100 (-31), School of Public Health

Objective: To strengthen the teaching at the School of Public Health of the University of Chile; and to expand the facilities for training students from other countries of the Americas.

Probable duration: 1953-1968.

VIII. PROJECT ACTIVITIES

Assistance provided: Reference books for the library of the School of Public Health; and one 2-month fellowship to observe the organization of public health teaching in France, Rumania, Spain, Switzerland, United Kingdom, and Yugoslavia.

Work done: The School of Public Health undertook steps to establish a Study Department with research functions, which will have the services of a sociologist and a psychologist; it also incorporated the teaching of health methodology and planning into the public health wastes program.

Thirty chiefs of services and programs took the national 6-week planning course. A new course in health teaching was conducted to improve the professional training of instructors in nursing and midwifery.

With fellowships awarded by the Organization, various regular courses were attended by 25 physicians, 4 health educators, 1 elementary and secondary school teacher, and 6 nurses coming from 15 countries (details appear in country projects or in Fellowships for Health Services projects).

PAHO/R, WHO/R

CHILE-6200 (-37), Medical Education

Objective: To expand and strengthen medical education by means of training programs in preventive and social medicine and improved pedagogical approaches.

Probable duration: 1962-1966.

Assistance provided: 1 short-term consultant specialized in medical pedagogy; teaching supplies and equipment; and the following fellowships

Awards	Field of study	Place of study	Months
2	Organization of medical education (cardiac surgery)	Argentina	1½
1	Ditto (pediatrics)	México	¾
1	Ditto (phoniatics)	Argentina	10
1	Ditto (physiology)	Puerto Rico, United States of America	2½
1	Ditto (surgery)	Germany, Sweden, United Kingdom	3

Work done: The School of Medicine of the University of Chile incorporated the teaching of preventive medicine to the regular clinical activities at the San Francisco de Borja Hospital. Conversations were held on the possibility of expanding the program, for the School to serve as an international faculty training center.

Through its program of Laboratory of Human Relations and Medical Teaching, the School continued its efforts to improve the effectiveness of teaching and the

learning process. The dean of the School made a study tour of major audiovisual centers in the Americas.

PAHO/R

CHILE-6201 (-39), Training in the Medical Use of Radioisotopes

Objective: To develop at Salvador Hospital, in connection with the University of Chile, a Latin American center for the training of physicians in the medical use of radioisotopes.

Probable duration: 1962-1966.

Assistance provided: Radioisotopes for teaching purposes; and the following fellowships:

Awards	Field of study	Country of study	Months
2	Laboratories in human relations and medical pedagogy	Perú	½
1	Nutrition	Colombia, Guatemala, United States of America	1½
1	Organization of medical education	Chile	1
1	Ditto (biochemistry)	United States of America	9¼
1	Ditto (laboratory in human relations and medical pedagogy)	Chile	½
1	Ditto (preventive medicine)	Brazil, Colombia, Venezuela	1½
1	Ditto (public health administration)	Chile	10
1	Ditto (vital statistics)	Brazil, Colombia, Venezuela	1½

Work done: The IV Annual Training Course on the Medical Use of Radioactive Isotopes was conducted from May through November for 2 physicians from Colombia, 2 from Costa Rica, 1 each from Ecuador and Perú, and 1 technologist in radioisotope procedures from Uruguay. The fields of specialization included gastroenterology, endocrinology, cancerology, hematology, cardiology, and urology.

PAHO/R

KF

CHILE-6400, Sanitary Engineering Education

Objective: To strengthen the teaching of sanitary engineering in the School of Engineering of the University of Chile.

Probable duration: 1964-1966.

Assistance provided: 2 short-term consultants and advisory services by personnel of other projects in Zone VI.

Work done: 2 short courses were held: one on water quality control, from 1 to 11 September, and another on

stabilization ponds from 11 to 20 November; each course was attended by 25 students.

PAHO/R, WHO/R

CHILE-6600, Dental Education

Objective: To add the teaching of preventive and social aspects of dentistry to the curriculum of the School of Dentistry of the University of Concepción by establishing a Department of Preventive and Social Medicine.

Probable duration: 1966-1971.

Assistance provided: Consultant services by the Regional Adviser.

Work done: Discussions were held on the manner in which the plan of activities of the School of Dentistry will operate once the agreement is signed. The Ministry of Public Health and the University had under study a draft agreement for submittal to the Organization.

COLOMBIA-0200 (-5), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1957-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 medical officer, 2 sanitary engineers, 1 entomologist, 1 assistant entomologist, 1 entomological aide, 6 sanitation inspectors, and consultant services by the Zone IV malaria adviser (AMRO-0204), whose duty station is in Bogotá, and by Headquarters personnel; drugs and supplies; and the following fellowships:

Awards	Field of study	Country of study	Months
6	Malaria eradication	Ecuador	1
6	Ditto	El Salvador, México, Venezuela	5½

Work done: From January to November 445,628 blood smears were examined and 16,565 (3.7%) were found positive; 150,289 smears and 13,069 (8.7%) positives were from attack-phase areas, 292,839 smears and 3,410 (1.2%) positives were from consolidation-phase areas, and 2,500 smears and 89 (3.56%) positives were from non-malarious areas.

Houses sprayed in the 13th cycle (January-June) totaled 373,763, and 370,239 were sprayed in the 14th cycle (July-December). In some areas spraying was done on special seasonal schedules so that the highest protection period would coincide with the season of highest potential malaria transmission. The special studies of the usefulness of seasonal spraying and complementary inter-cyclic spraying in areas with high rates of

house-building and alterations to existing houses were evaluated after a year's trial. The evaluation showed that the measures considerably reduced transmission below the level existing in the control areas, but did not interrupt it.

An exchange of visits of professional staff with that of the National Malaria Eradication Service of Venezuela was made in February.

A number of areas with very low malaria incidence were withdrawn from spraying and put under observation during the year, and most of them were then placed in consolidation phase while a few were returned to spraying. As of December, areas in consolidation phase included a population of 7,071,170 while the population of attack-phase areas numbered 2,016,685.

Investigations were made on the utility of additions of BHC to the DDT used for house-spraying, in order to reduce infestation with bedbugs, which was causing people to wash their walls and thus remove the DDT residuals. While treatment with BHC did not eliminate bedbug infestation during the experiments, adequate dosages did markedly reduce it, especially in houses of poor construction, and the trials were welcomed by the inhabitants. Refusals to DDT spraying were considerably reduced. In 2 small areas in which there was known to be resistance to chloroquine and proguanil, 3-day trials using chloroquine, pyrimethamine, and primaquine in combination were being carried out for radical cure from *Plasmodium falciparum* and *P. vivax* infection. The results of these trials showed promise but it was too early to permit evaluation.

PAHO/SMF

UNICEF

COLOMBIA-0500, Leprosy Control

Objective: To organize a leprosy control program based on modern techniques and procedures.

Probable duration: 1958-1967.

Assistance provided: Advisory services by the medical officer assigned to project AMRO-0504, and three 3-month fellowships to study leprosy (rehabilitation and prevention of deformities), in Venezuela.

Work done: The evaluation of the program was begun and inservice training of medical officers in charge of sanatoria and leprosy centers was continued.

PAHO/R

UNICEF

COLOMBIA-0501, Epidemiological Research in Leprosy

Objective: To conduct research on the problem of leprosy in the country.

Probable duration: 1965-

VIII. PROJECT ACTIVITIES

Assistance provided: 2 leprosy experts provided by WHO (Geneva).

Work done: The epidemiological survey was begun in April among the inmates of the Agua de Dios Leprosarium in the department of Cundinamarca. The survey in schools in the area began in May. Up to the end of November, 5,443 persons had been examined, and 2,443 cases (44.9%) were detected. All bacteriologically positive cases had visible lesions.

COLOMBIA-2200 (-25), Water Supplies

Objective: To plan and carry out a national water supply program; and to make a study of the planning, design, financing, construction, and operation of municipal water supply services.

Probable duration: 1960-1969.

Assistance provided: 1 engineer, 3 short-term consultants (2 in administration and organization, and 1 in water rates), and advisory services by personnel of Zone IV Office and of other projects in Colombia.

Work done: Good progress was made in the organization of the work of the National Institute of Municipal Development which is responsible for planning and building public water supply systems.

The mission of the International Bank for Reconstruction and Development made a comprehensive review of the investments needed in the country in the next 4 years. The Inter-American Development Bank granted a second loan, of \$4,750,000, for the expansion of the Medellín water supply distribution network. The Agency for International Development awarded the municipal public enterprises of Armenia, Barranquilla, Bogotá, Medellín, Palmira, Pereira, and Tulúa loans totaling \$1,380,000 for feasibility studies of water-supply, sewerage, and stormwater projects. The Export-Import Bank approved a loan for \$2.7 million to Empresas Públicas de Barranquilla for expanding the water supply services and treatment plant. Of the loans granted by IADB in previous years, the following investment percentages were recorded: National Institute of Municipal Development, 37.3%; Cali, 86.3%; Cartagena, 70.0%; Cúcuta, 65.0%; and Medellín, 86.9%. The Government approved the necessary legislation for establishing a revolving fund to take care of future expansions of water supply programs.

PAHO/R, PAHO/CWSF

IADB

COLOMBIA-2300 (-22) *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Probable duration: 1951-1967.

Assistance provided: 1 sanitation inspector and advisory services by the medical adviser assigned to project Venezuela-2300.

Work done: In Norte de Santander department the work of surveillance and verification continued in Cúcuta (where the reinfestation of 1961 was eliminated in 1963); from January to July, 7 inspections were made of the city and no *A. aegypti* was found; however, as the inspections continued, 21 positive houses were found in November among the 8,931 inspected; the treatment to eliminate the reinfestation was continued.

Verifications made in San Luis, Norte de Santander, and in Santa Marta, Magdalena (which had been reinfested in 1962 and 1964, respectively), included 2 inspections with negative results each in San Luis and Santa Marta, where a third inspection was in progress in November without any *A. aegypti* having been found.

The surveillance service inspected the ports of Barranquilla, Buenaventura, Cartagena, and Las Flores, the international airports of Barranquilla and Cali, and 27 localities in the departments of Bolívar and Norte de Santander and the Territorial District of La Guajira and that of San Andrés y Providencia, all of which were negative for *A. aegypti*.

PAHO/R

COLOMBIA-3100 (-4), National Health Services

Objective: To prepare a national health plan; to strengthen the Ministry of Health and the departmental and local services; to extend integrated health-services coverage to the entire population; and to train professional and auxiliary personnel.

Probable duration: 1951-1969.

Assistance provided: 1 chief medical adviser (Country Representative), 1 medical officer, 1 sanitary engineer, 1 public health nurse, 1 statistician, and 1 short-term consultant (mental health); secretarial services; equipment and supplies; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Hospital administration	Chile	9½
1	Public health administration	México, Puerto Rico, Venezuela	2

Work done: With a view to preparing a national health plan, a national health planning committee and an advisory committee were appointed, and a guide for formulating the plan was prepared. The preliminary studies for collecting data and information for the health plan were also carried out.

The Ministry of Health established a series of standards

and requisites for organizing a system of regionalization and coordination of hospitals and health agencies. The integration of curative and preventive services was also achieved by means of an Executive Decree.

Two new integrated health districts and health centers were established.

The work of integrating health and care services continued satisfactorily in the districts of Barrancabermeja, Caloto, and Tunja and was in the initial stage in the districts of Pamplona and Sabanalarga. The integration of preventive and curative services was being accomplished through contracts with the local health services in 24 communities of the department of Cundinamarca, and in that of Antioquia a program which makes provision for joint supervision by the central health agencies and the local welfare agencies was prepared.

A Compulsory Medical Service was established for 459 small localities, in which a recently graduated physician, provided with the minimum facilities, will be responsible for the integral health care of the community.

A smallpox outbreak in Antioquia, which began in the first week of March, required mass vaccinations during which over 5 million doses were applied; this required intensified efforts on the part of the National Health Institute to produce the necessary amounts of vaccine.

The figures that follow include only the first 6 months of the year, but the comparisons are made with the targets established for the entire year.

Vaccination with DPT covered 161,973 children, or 6.7% of the target; 307,788 doses of tuberculin were applied and read and 251,502 children were immunized with BCG, representing 125% of the target; 321,824 miniature X-rays were taken, or 26.2% of the target (1,227,402).

There were 414,755 hospital dismissals, or 44.5% of the amount estimated, with a bed occupancy rate of 61.8% and an average stay of 10.1 days, which had been estimated at 8.2 days. During the same period, there were 2,336,670 consultations, or 48.6% of the target. The number of births at both hospitals and clinics far exceeded the estimated 67,360 for the year and was 25% higher than in 1964. In effect, there were 110,387 deliveries during the first quarter of 1965.

A study was made of 55 projects and draft projects for the building, expansion, or remodeling of hospitals and other type of health-service institutions.

From 10 September to 9 October, with the cooperation of 1 short-term consultant, a survey was made of the mental health resources available in the country. The pertinent report was being prepared at the end of the year.

The main activity of the Division of Environmental Sanitation was the preparation of a Plan of Basic Environmental Sanitation and Rural Welfare. Construction work was completed on 89 small water supplies to give service to 9,718 inhabitants living in 1,453 houses and 115 to provide water to 63 schools with 3,152 students—39% of the cost of these works was contributed by the communities benefited. Ten wells were drilled. Beginning in September the necessary financial resources became available to begin building privies in rural areas.

The following courses were conducted during the year: for teaching staff to train health promoters at the rural level, in Medellín, lasting 2 months, for 15 teams, each composed of 1 public health medical officer, 1 public health nurse, and 1 sanitation inspector; on vital, hospital, and health statistics, lasting 7 months, for 25 officers; 195 students were trained at 6 schools for nursing auxiliaries; a 3-month course for laboratory helpers, in Bogotá; a course on community development for 34 health inspectors, in Popayán; and one on food handling for 50 persons.

PAHO/R, WHO/R,
WHO/UN-TA

AID, UNICEF

COLOMBIA-3101 (-21), Fellowships for Health Services

<i>Awards</i>	<i>Field of study</i>	<i>Place of study</i>	<i>Months</i>
1	Dental care	México, United States of America	4½
1	Ditto (epidemiology of oral lesions)	Argentina, Chile, Ecuador, Perú	4½
2	Organization of medical education	Chile	7
1	Public health administration (dental care)	Brazil	2½
3	Ditto (health planning)	Chile	3½
2	Public health nursing (administration and supervision)	Puerto Rico	11½
1	Sanitary engineering	Argentina	9
1	Ditto	Brazil	11

PAHO/R

COLOMBIA-3102 (-200), Fellowships for Health Services

<i>Awards</i>	<i>Field of study</i>	<i>Place of study</i>	<i>Months</i>
1	Medical records librarianship	Colombia	¾
1	Nursing education	United States of America	1½
1	Nursing services	Chile	10

VIII. PROJECT ACTIVITIES

Awards	Field of study	Place of study	Months
1	Ditto	United States of America	12
1	Organization of medical care services	El Salvador, México, Puerto Rico, Venezuela	3
1	Orthopedic brace-making	Brazil	4
2	Public health administration (hospital administration)	Chile	16
1	Public health nursing	Ditto	10
1	Sanitary engineering	Argentina	12
1	Ditto	Brazil	11
1	Social pediatrics	Guatemala	1
1	Tuberculosis (laboratory methods)	Venezuela	1¼

WHO/R

COLOMBIA-3301 (-52), National Institute of Health (Carlos Finlay)

Objective: To strengthen the services that the Yellow Fever Section of the National Institute of Health provides to other countries in connection with the Hemisphere-wide fight against yellow fever, that is, research, laboratory diagnosis, and vaccine preparation.

Probable duration: 1950-

Assistance provided: 1 short-term consultant and 1 annual grant.

Work done: 984,355 doses of yellow fever vaccine were produced and 358,050 were distributed to Aruba, British Guiana, Cuba, Curaçao, Ecuador, El Salvador, Guatemala, Jamaica, Liberia, México, Panamá, Perú, and Venezuela. In Colombia, 54,329 persons were vaccinated, which brought the total number of persons immunized since the beginning of the campaign to 3,694,608.

The Institute received 1,012 viscerotomy specimens and 2 were positive—1 each from the departments of Caldas and Norte de Santander.

PAHO/R

COLOMBIA-4100 (-28), Social Services

Objective: To improve the social services for the protection and rehabilitation of minors with social problems, including the training of personnel.

Probable duration: 1962-1967.

Assistance provided: Advisory services by the technical staff assigned to other projects in the country.

Work done: Under the direction of the Division of Minors of the Ministry of Justice and of the Administrative Department of Social Welfare and Protection of the Special District of Bogotá, the following courses were

conducted: for directors of planning of supervised recreation in several cities, attended by 75; for kindergarten teachers, attended by 80; on family planning, attended by 12 students; and for directors of institutions for minors, attended by 20 participants.

UN, UNICEF

COLOMBIA-4200 (-26), Nutrition

Objective: To improve the level of nutrition in the departments of Caldas, Cauca, and Norte de Santander, especially in the rural areas, in coordination with the local health, education, and agricultural services; to train personnel at the local and intermediate levels; and to establish food-preparation and school-garden demonstration services in the schools of the area.

Probable duration: 1961-

Assistance provided: Consultant services by the adviser of project AMRO-4204; and three 2½ month fellowships each for nutrition studies in Guatemala.

Work done: The national plan drawn up for expanding applied nutrition programs was approved by the Planning Office of the Government. A national study was made of available manpower in the field of nutrition and related sciences. A study was begun of the food services in hospitals throughout the country for the purpose of establishing adequate standards and studying the means of improving those services.

Contracts were signed for operating 5 new nutrition sectors in the Departments of Antioquia, Bolívar, Huila, Meta, and Tolima. Clinical and biochemical surveys were conducted in the departments of Boyacá and Huila as the initial stage of applied nutrition programs.

The professional nutritionist course offered by the Institute of Nutrition was added to the nutrition and dietetics curriculum of the National University. A series of specific short courses were conducted for selected groups which included agricultural engineers, veterinarians, physicians, and community developers. A course in management of Nutrition Rehabilitation Centers was planned and conducted for 34 nursing auxiliaries.

PAHO/R

FAO, UNICEF

COLOMBIA-4201, Incaparina in Preschool Diets

Objective: To introduce Incaparina in the diet of preschool children to prevent protein-calorie malnutrition.

Probable duration: 1965-1966.

Assistance provided: Consultant services by the adviser of project AMRO-4204.

Work done: The first and second stages of the program aimed at introducing Incaparina in preschool diets were planned and executed. A total of 45,000 kilograms of Incaparina was distributed and benefitted 14,000 children.

To initiate the second stage of the program a seminar was held in Bogotá to impart basic general information on vegetable mixtures to the personnel in charge of conducting this program in health districts. The techniques and procedures to be used in evaluating the program were also studied and drawn up at the seminar.

FAO, UNICEF

COLOMBIA-6100 (-24), School of Public Health

Objective: Up to 1963, to strengthen the School of Public Health of the National University of Colombia; and, beginning in 1964, to organize and develop the School of Public Health of the University of Antioquia.

Probable duration: 1959-1963; 1964-1969.

Assistance provided: 1 medical officer, 1 short-term consultant; and one 2½-month fellowship to study organization of public health teaching (integrated health services), in El Salvador, Puerto Rico, and Venezuela.

Work done: The following courses were completed: on public health, with 19 students; on public health nursing, with 9 students; for trainers of rural health promoters, with 44 trainees (15 teams); a beginner's course on vital, health, and hospital statistics, with 27 students; and a sanitation-visitor course, with 26 students.

Postgraduate courses for physicians, dentists, veterinarians, and nurses and the V Course for Hospital Administrative Assistants were inaugurated in February. A course on statistics, with 24 students, and a course for sanitation inspectors, with 40 students, began on 21 June.

The programs of all courses were reviewed and modified according to acquired experience.

An agreement was reached with the Division of Environmental Sanitation whereby the Division will detail one of its engineers to substitute for the chief of the Sanitation Department of the School during the latter's absence for advanced studies abroad.

The School of Public Health was moved to its new locale at the University of Antioquia, where it has 3 times as much space as it had before.

WHO/R

UNICEF

COLOMBIA-6200 (-34), Health Manpower Studies

Objective: To carry out a study of health manpower requirements and the means for meeting them; and to collect data for a reorientation of medical education and health planning and the development of a working methodology that may serve as a model for other countries.

Probable duration: 1964-1966.

Assistance provided: 8 short-term consultants, advisory services by Headquarters and Zone IV Office personnel; supplies and equipment for field studies, including vehicles, and some publications; and one 6-month fellowship to study organization of medical education (cancer control) in Perú.

Work done: A census of almost 80% of the available medical manpower (physicians and nurses) was taken and plans were being formulated to conduct a sample study of their professional activities; a survey was carried out to analyze the organization and teaching capacity of the schools of medicine and nursing. The Ministry of Public Health launched, in August, the first nationwide health survey in the country.

PAHO/R, PAHO/G: Milbank Memorial Fund

COLOMBIA-6201, Medical Education

Objective: To strengthen medical education by emphasizing the preventive and social aspects of the practice of medicine; to teach medical students how to approach epidemiological, preventive-curative, and social problems; to improve the teaching in the schools of medicine by revising the curricula in the various fields; and to provide the medical profession with a periodical medical bulletin containing bibliographic material and topical information.

Probable duration: 1965-1972.

Assistance provided: A grant in support of salaries, materials, and publications for teaching the courses; and advisory services by Headquarters and Zone IV Office personnel.

Work done: The Colombian Association of Medical Schools started, in April, 2-day courses of continuing medical education for medical professionals practicing in small towns. The courses were conducted by professors from the 7 medical schools in Colombia. Some 30 courses were given during 1965. In conjunction with this project, preparations were made to publish a Colombian Medical Index (1890-1960) and a medical bulletin.

The First Seminar on the Teaching of Epidemiology was held from 22 to 27 March. A team of 8 international consultants, who had visited all the medical schools in

VIII. PROJECT ACTIVITIES

Colombia prior to the meeting, and 35 key faculty members of the 7 Colombian medical schools participated in the seminar.

Conversations were held with the pertinent authorities of the University of Antioquia, in Medellín, on the possibility of developing a regional faculty training center at that University's School of Medicine, using also medical faculty members of the 2 medical schools in Bogotá, and on the possibility of their participating in the PAHO faculty training program in Rio de Janeiro, Brazil.

PAHO/R

COLOMBIA-6400 (-33), Sanitary Engineering Education

Objective: To improve the technical training of engineers who work in the field of sanitary engineering; and to promote the development of a sanitary engineering research center at the National University of Colombia.

Probable duration: 1964-1967.

Assistance provided: 1 short-term consultant and advisory services by personnel of other projects in Zone IV; grants; and two 2½-month fellowships to study sanitary engineering (electronic computers), in México.

Work done: A chief adviser was appointed to the project and arrived in Colombia in October.

The following 3 courses were held in Bogotá: on criteria for establishing the degree of water treatment, from 9 to 20 August, for 25 students; on the degree of mechanization of water treatment plants, from 25 October to 12 November, for 16 students, and on the application of electronic computers to problems of sanitary engineering, from 6 to 17 December, for 14 students, including 1 from Chile and 1 from Perú. In Medellín another course was held on basic notions of hydrology, from 15 to 26 November, for 25 students.

The Organization and the Los Andes University of Bogotá concluded an agreement whereby the university will assist in the program of short courses for the country.

PAHO/R, WHO/R

UN-SF, UNESCO

COLOMBIA-6600 (-27), Teaching of Preventive Dentistry

Objective: To include the teaching of preventive dentistry in the curriculum of the School of Dentistry of the University of Antioquia, in Medellín; and to establish a center for research on dentistry, stressing aspects of public health dentistry.

Probable duration: 1961-1968.

Assistance provided: 3 short-term consultants and advisory services by the Regional Adviser; a limited amount of equipment and supplies; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Dentistry (teaching)	United States of America	3
1	Dentistry training of auxiliary personnel	Puerto Rico, United States of America	3

Work done: The School increased the number of teachers and reorganized the teaching program of the Department of Preventive and Social Dentistry. The dentistry course was reduced from the traditional 5 years to 4 years, and the number of hours devoted to preventive and social aspects was increased. The Department began preparations to offer regular courses for dental auxiliaries. It was also making arrangements to establish a center for the correction of hare lips and cleft palates, and to evaluate the program of the center on completion of 5 years of operation.

PAHO/R

KF

COSTA RICA-0200 (-2), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1956-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 malariologist, 3 sanitation inspectors, and consultant services by the administrative methods adviser assigned to project AMRO-0203 and by Headquarters personnel; antimalarial drugs; entomological material; and 2 fellowships for 5½ months each, to study malaria eradication in El Salvador, México, and Venezuela.

Work done: Because of the financial problems that in 1964 forced the discontinuation of the mass-drug program, areas with 40,789 inhabitants were shifted from consolidation phase to attack phase in January 1965. During April a mass drug-treatment was initiated in 14 localities with 1,384 inhabitants; 80% of the work programmed was achieved and the transmission stopped.

The 14th cycle of spraying began in January and had to be stretched out into October, mainly because of administrative problems and low output of the spraymen. During this cycle 29,827 houses were sprayed with DDT and 3,573 with dieldrin, part of these were in areas in consolidation phase.

Of 197,751 blood smears examined 2,563 (1.3%) were positive, with 2,559 caused by *Plasmodium vivax*

and 4 by *P. falciparum*; 102,124 of the blood smears and 717 (0.7%) of those positive were from areas in the consolidation phase, as were 202 (28%) cases investigated.

At year's end the Government was in the process of negotiating with AID a long-term loan to finance the campaign during the next 3 years.

PAHO/SMF, WHO/MESA

UNICEF

COSTA RICA-0400, Tuberculosis Control

Objective: To organize and develop a demonstration area in the province of Guanacaste for the purpose of obtaining epidemiological information, applying and evaluating practical tuberculosis control methods, and training medical and auxiliary personnel in order to gradually extend the program to other areas of the country.

Probable duration: 1964-1969.

Assistance provided: Advisory services by staff of other projects in the country and by staff of Zone III Office.

Work done: Regular activities of the project began in April in the Golfito canton of Puntarenas province and up to 4 October the following had been accomplished: 18,321 tuberculin tests, 13,217 BCG vaccinations, and 9,736 photofluorographies. Contrary to expectations, diagnosis and therapeutic indications were handled centrally.

UNICEF

COSTA RICA-2200 (-22), Water Supplies

Objective: To develop programs to provide public water supply systems and sewerages to urban and rural communities of the country; and to establish the National Water Supply and Sewerage Service, providing for its proper administration.

Probable duration: 1960-1968.

Assistance provided: 1 sanitary engineer; 1 short-term consultant, and advisory services by Headquarters and Zone III Office personnel.

Work Done: The Inter-American Development Bank approved a loan of \$1.3 million for the partial financing of the rural water supply system program. In 3 years it is planned to build 80 water systems to benefit 131 communities with a present population totaling 57,000. The United Nations World Food Program cooperated in developing this plan by providing \$300,000 in food with which to pay part of the labor force. With its own re-

sources the National Water Supply and Sewerage Service (SNAA) completed the construction or expansion of 10 rural waterworks, and another 9 were in the process of being built.

The water supply system of the metropolitan area of San José was brought up to standard through improvement and expansion of the treatment plant, the drilling of wells, and the installation of 13,000 watermeters, plus a broad campaign of public information and education. Studies and plans to expand the San José sewerage system was continued, as was the planning of water supply and sewerage projects for 12 cities to benefit a population of over 100,000.

The United Nations Special Fund granted a loan of \$745,100 to SNAA for a research program on ground water.

The Organization cooperated in a study of the SNAA transportation and water rate systems. Assistance was also given in establishing a program of public relations and personnel training.

PAHO/R, PAHO/CWSF, WHO/R

COSTA RICA-3100 (-14), National Health Services

Objective: To prepare and implement a national health plan, as part of the national economic and social development plan; to improve the administration and expand the health services, including medical care services; to train the necessary professional and auxiliary personnel; and to carry out an extensive rural sanitation program.

Probable duration: 1959-1969.

Assistance provided: 1 medical adviser and 1 short-term consultant; and the following fellowships:

Awards	Field of study	Place of study	Months
2	Environmental sanitation	El Salvador	3
2	Medical use of radioactive isotopes	Chile	7
1	Mental health	United States of America	4
1	Nursing education (teaching)	Puerto Rico	11½
1	Nursing services (administration and supervision)	Guatemala	9
2	Organization of medical education	El Salvador	½
1	Public health administration	Chile	3½
1	Public health administration (methods and procedures)	Ditto	4
1	Ditto (nutrition)	Guatemala, Puerto Rico	13
1	Ditto (planning)	Chile	10

VIII. PROJECT ACTIVITIES

Work done: An organic law was drafted to define the functions of the Public Health Ministry and its relations with social security and independent institutions. The work of converting the technical departments of the Ministry into policy-setting divisions was continued, leaving the execution of programs to a director of operations. The Ministry of Public Health and the Costa Rican Social Security Fund concluded an agreement for a coordinated program of health promotion and disease prevention combined with health recovery programs for children of the insured. This step marks an important advance in coordination between independent and State health services. The central administration of Health Area I (province of Guanacaste, which has a population of 150,000) was rationalized, its services regionalized, and its sphere of influence established. A prior diagnosis had been made of the health status of the area, and program priorities were established in accordance with the diagnosis of the health situation in the country.

The construction and installation of a health unit extended the services to a population of 22,000, and 2 mobile units provided minimum care to 30,000 persons. The operating centers of the mobile units were increased to 27, thereby serving a population of 72,000 which had previously lacked such services. Six nutrition centers and 1 new nutrition rehabilitation clinic began to operate. The Costa Rican Social Security Fund began to operate 3 clinics and 3 dispensaries which provide curative services to an insured population of 160,000 in the metropolitan area.

Expansion and remodeling was carried out in several hospitals, outpatient clinics, and rural medical-care centers under the national hospital system. The Costa Rican Social Security Fund began to build a 533-bed hospital in the metropolitan area and a 398-bed hospital in Puntarenas. The increase in Social Security Fund facilities is the result of increased health insurance throughout the country, which at the present time includes 27.2% of the total estimated population.

The following figures cover only the first 8 months of the year, but the comparison is made with target figures for the entire year.

Outpatient consultations numbered 397,763 and hospital discharges 114,886; the bed-occupancy rate was 79.2% (in 1964, 76.1%).

Prenatal consultations at health units numbered 59,591 (38.6% of the target); deliveries, 28,816 (75% of the target); and well-child consultations, 110,376 (92% of the target).

Smallpox vaccinations were applied to 22,267 persons (10.5% of the target), and 20,748 children received DPT

(only 14.1% of the target). Under the tuberculosis control program, 44,303 doses of tuberculin were applied and read; 34,548 BCG vaccinations were applied (12.5% of the target).

The total number of privies installed was 5,352 (54.4% of the target).

The following training courses were conducted: 1 nutrition course for 20 nursing auxiliaries; 1 public health course for 5 nurses and nursing auxiliaries; 1 in public health orientation, for 14 physicians; 1 in planning, for 20 students; 1 refresher course for 15 nurses and nursing auxiliaries from Cartago province; and 1 refresher course in the nursing program of Heredia province, for 22 students.

PAHO/R

UNICEF

COSTA RICA-3101 (-200), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Clinical and social pediatrics	Chile	3
1	Drug analysis and control	Panamá	6
1	Environmental sanitation	Colombia	2½
1	Health statistics	Ditto	3¾
1	Medical records librarianship	Venezuela	¾
1	Nursing education	Brazil	10½
1	Ditto	Puerto Rico	11½
1	Nursing services (administration and supervision)	Chile	10
3	Public health administration	Brazil	11
1	Ditto	Chile	10
1	Ditto	México	10½
1	Ditto (epidemiology)	Ditto	10½
1	Ditto (hospital administration)	Brazil	15
1	Ditto (odontology)	Ditto	11
1	Public health nursing	Chile, El Salvador, Puerto Rico	2½
1	Sanitary engineering	United States of America	12½

WHO/R

COSTA RICA-3301 (-24), Laboratory for Diagnosis of Viral Diseases

Objective: To organize in the National Health Laboratory a section for the diagnosis of viral diseases.

Probable duration: 1962-

Assistance provided: Advisory services by Headquarters personnel and laboratory reagents.

Work done: Work on the viral etiology of respiratory

infections in children, begun the previous year, was continued and hemagglutinating agents were isolated in 30% of the specimens studied. The health units of Hatillo, Pavas, San Pedro, and Tibás, located in the metropolitan area of San José, cooperated in this undertaking.

Two new members of the laboratory were given training in virus isolation and typing techniques.

PAHO/G: Lederle Laboratories

COSTA RICA-4200 (-21), Nutrition

Objective: To improve the nutritional level of the population by studying the factors that determine and contribute to malnutrition in the country, by offering dietetic and nutritional education, and by rehabilitating the undernourished.

Probable duration: 1960-

Assistance provided: Advice by the staff of INCAP and of other projects in the country.

Work done: The first stage of the applied nutrition program, which includes 124 elementary and 3 normal schools, 37 health units, 20 nutrition centers, and 31 agricultural extension agencies, was completed.

Education in nutrition was included in the study program of normal schools so that future graduates will be prepared to teach nutrition at the elementary-school level.

In view of the satisfactory results obtained in this program, the Government requested assistance from participating international agencies for a second expansion, which would add another 40 elementary schools, 5 health units, 5 nutrition centers, and 5 agricultural extension agencies.

FAO, UNICEF

COSTA RICA-6200, Medical Education

Objective: To strengthen medical education by improving the training of medical faculty in basic sciences.

Probable duration: 1965-

Assistance provided: Advisory services by 1 of the short-term consultants assigned to project AMRO-6203.

Work done: The consultant discussed with the authorities of the School of Medicine of the University of Costa Rica the teaching program in anatomy, in preparation for the First Seminar on the Teaching of Anatomy in Central America, held in San Salvador, El Salvador, from 10 to 13 October.

COSTA RICA-6300 (-18), Advanced Nursing Education

Objective: To establish at the School of Nursing an advanced education center to train nurses in teaching, in supervision, and in other specialties; and to evaluate the work of the School.

Probable duration: 1959-1968.

Assistance provided: One 12-month fellowship to study nursing education, in Puerto Rico.

Work done: Continuous advisory services to this project were suspended in 1965 because it was not possible to recruit a suitable nurse educator, but toward the end of the year one was found who will begin her duties in 1966. The School continued negotiations for incorporation in the University of Costa Rica, and in 1965 the entering nursing class was admitted to the first year of general studies which is common to all disciplines in the University.

PAHO/R

COSTA RICA-6400, Sanitary Engineering Education

Objective: To improve the teaching of sanitary engineering at the University of Costa Rica.

Probable duration: 1965-1969.

Assistance provided: 1 short-term consultant and the services of engineering personnel of other projects in Zone III; grants for teaching equipment and materials; and one 1½-month fellowship to study environmental sanitation, in Perú.

Work done: A short course on basic financial criteria for planning water supply systems was held from 27 September to 9 October at the School of Engineering of the University of Costa Rica, for 20 professionals from the National Water Supply and Sewerage Service and other institutions, and a course on community development was conducted chiefly for personnel scheduled to work in rural water supply programs.

PAHO/R

CUBA-0200 (-5), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1959-1969, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 malariologist, 2 sanitation inspectors, and advisory services by entomologists assigned to projects in Zone III; antimalarial drugs, entomological

VIII. PROJECT ACTIVITIES

test equipment, mailing tubes for blood slides, and some vehicles and spare parts; and one 3-month fellowship to study malaria eradication in México.

Work done: In its 4th year of attack phase, this program was performing the 6th, 7th, and 8th cycles of DDT spraying. The spraying of 805,617 houses, or 91.2% of the planned number gave direct protection to 4,025,924 inhabitants. Epidemiological operations were increased and the malarious area was divided into 5 sectors and 30 evaluation areas in an effort to control more closely the activities.

Of 423,790 blood smears examined, 131 (0.03%) were positive.

WHO/R

UNICEF

CUBA-2300 (-1), *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Probable duration: 1952-1967.

Assistance provided: 1 medical adviser and 3 sanitation inspectors; and equipment and supplies.

Work done: Work was begun in Las Villas province and continued in the provinces of La Habana, Matanzas, and Pinar del Río, with only 2 squads. In those 4 provinces, from January to November the campaign inspected 49 localities in initial survey, verified 137 localities, and treated 86 others; 473,153 houses were inspected and 210,739 houses were treated.

From the beginning of the campaign to November the total number of localities inspected in initial survey was 1,016, of which 767 had been infested with *A. aegypti*. Of the initially positive localities, 766 were treated and of these, 756 were verified. At the time of the last inspection 680 localities were negative and 76 were positive.

PAHO/R, WHO/UN-TA

CUBA-3100 (-3), Public Health Services

Objective: To improve the health services at the national, intermediate, and local level; and to establish a demonstration and training area.

Probable duration: 1959-1969.

Assistance provided: 1 medical adviser and 2 public health nurses; equipment and supplies; and the following fellowships

Awards	Field of study	Country of study	Months
2	Public health services (administration)	Chile	3½
1	Public health teaching (epidemiology)	Ditto	6

Work done: Positions of midwife, pediatric, and tuberculosis nurse were established and filled at the national level in the Ministry of Health, to become a part of the Nursing Section under the Vice Minister of Medical Care. A committee, established for the purpose, had in preparation regulations for local health services. A seminar on integrated policlinics was held in August under the responsibility of the Secretariat of Public Health. The Chicharrones policlinic in Santiago began operating in October for a population of 50,000. At year's end, another 6 policlinics began operating in various parts of the country.

The Marianao demonstration and training area provided health services, through 3 integrated policlinics, to 120,000 persons. At year's end, remodeling of the buildings which will house another 2 policlinics was being completed and the necessary personnel was already available to provide care to an additional 90,000 persons, or in other words, to 210,000 of the 390,000 total population in the area. The policlinics in operation have coordinated their activities with the hospital services. Training was given in the demonstration area to professional and auxiliary personnel coming from other districts and regional directorates through the following courses: one 3-month course for nurses, from which 9 nurses were graduated; 1 public health orientation course for 38 nursing auxiliaries; and 2 courses for a total of 82 assistants to health workers.

A study was made of the reorganization of the Carlos J. Finlay School of Public Health. The School's activities are summed up in the following courses: one 9-month course in public health administration for 25 students; 1 public health nursing course for 20 students; one 10-month health worker course for 49 students; and 1 statistics technician course for 7 auxiliaries. In addition the School set the standards and supervised the courses for auxiliary health personnel conducted by the Regional Directorates of the Ministry of Public Health in various cities throughout the country.

PAHO/R, WHO/R, WHO/UN-TA

UNICEF

CUBA-3101 (-200), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Clinical and social pediatrics	Chile	3
1	Nutrition	England, Nigeria	8½
1	Organization of public health teaching (hospital administration)	México	10½

Awards	Field of study	Country of study	Months
1	Public health administration (dental public health)	Ditto	10½
1	Ditto (hospital administration)	Ditto	10½
1	Public health nursing	Chile	10
2	Public health teaching (public health administration)	Ditto	10
1	Ditto	México	10½
1	Vital and health statistics	Chile	9½

WHO/R**CUBA-3102 (-16), Emergency Health Services**

Objective: To strengthen the health services affected by hurricane Flora (1963); to promote the establishment of outpatient clinics in the rural hospitals of the affected zone; and to train technical and auxiliary personnel.

Probable duration: 1963-1969.

Assistance provided: Advice by the staff of other projects in the country.

Work done: The health services affected by hurricane Flora continued to be strengthened.

UNICEF**CUBA-4200 (-13), Nutrition**

Objective: To achieve the gradual improvement of the nutrition status of the population—one of several coordinated efforts to raise the health level of the country.

Probable duration: 1965.

Assistance provided: Advice by personnel of Headquarters and of other projects in the country.

Work done: The preliminary plan for a nationwide nutrition program was completed. The services of a specialized adviser, who is scheduled to begin work in early 1966, were secured.

CUBA-6200, Medical Education

Objective: To strengthen medical education by increasing reference material in the medical library.

Duration: 1965.

Assistance provided: Medical journals and books, charged to project Cuba-3100.

Work done: 1-year subscription to 18 medical journals and 87 reference medical books were sent to the library of the School of Medicine of the University of La Habana.

CUBA-6300 (-4), Nursing Education

Objective: To strengthen the schools of nursing of the country; and to prepare nursing instructors.

Probable duration: 1961-1969.

Assistance provided: Consultant services by the nurse advisers assigned to projects Cuba-3100, México-6300, and AMRO-3202.

Work done: A postbasic course in nursing education and administration was organized at the Carlos J. Finlay Institute and 56 instructors were graduated. Nine schools of general nursing graduated 448 nurses. In addition, 618 nursing auxiliaries and 592 pediatric nursing auxiliaries were prepared. The Government intends to upgrade the auxiliaries by having them complete general nursing studies, for which purpose it specifically created 6 schools of obstetrical nursing and 1 of pediatric nursing which will admit nursing auxiliaries with 9 years of general education and 2 years of experience.

UNICEF**DOMINICAN REPUBLIC-0200 (-2), Malaria Eradication**

Objective: To eradicate malaria.

Probable duration: 1957-1969, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 malariologist, codirector of the campaign (another malariologist served for 2 months), 1 sanitary engineer, 1 administrative adviser, and 3 sanitation inspectors; antimalarial drugs; and 2 vehicles.

Work done: 205,836 blood smears were taken and as many slides were examined; there were 84 positive slides (0.04%), as follows: 38 *Plasmodium falciparum*; 25 *P. vivax*, and 5 *P. malariae*; the remaining 16 were mixed infections.

Greater coordination was achieved between the technical and executive levels, which improved the conduct of the campaign. The 2nd spraying cycle, which began in October 1964, was completed on 2 April 1965; 89.3% of the planned work was accomplished by spraying 500,343 houses, which protected a population of 2,269,357. The 3rd cycle, begun in April, was interrupted by the political events occurring in the country and was resumed only gradually in June; up to 4 December the number of houses sprayed was 411,193.

In order that eradication operations might not be interrupted during the disturbances, financial assistance was provided by the OAS from its emergency fund.

PAHO/SMF**UNICEF**

DOMINICAN REPUBLIC-0400 (-10), Tuberculosis Control

Objective: To organize in the province of San Cristóbal a demonstration area to obtain epidemiological information, apply and evaluate practical methods of tuberculosis control, and train medical and auxiliary personnel for the gradual extension of the program to other areas of the country.

Probable duration: 1963-1967.

Assistance provided: Advisory services by the Country Representative.

Work done: The examination of a sample of rural population from the municipality of San Cristóbal was begun in January. By April, 5,232 persons had been examined and 3,929 (75%) who were found tuberculin (PPD) negative were vaccinated with BCG. Only 1 per 1,000 showed abnormal X-ray shadows. Reorganization of the Adult Sanatorium was begun, with a view to its serving as a center for tuberculosis activities on a nationwide scale.

UNICEF

DOMINICAN REPUBLIC-2000 (-15), Water Supplies

Objective: To organize a central water supply and sewerage authority; to design waterworks and sewerage systems; and to obtain from international credit agencies loans to build the systems.

Probable duration: 1962-1969.

Assistance provided: 1 sanitary engineer and advisory services by personnel of Zone II Office and of other projects in the Dominican Republic.

Work done: The administrative structure of the National Water Supply and Sewerage Institute was modified and it absorbed the functions of the former National Service of Rural Waterworks, a dependency of the Ministry of Health and Social Welfare, which was abolished in 1965. During the first months of the year, progress was made in the rural water supply program with funds from a 1964 surplus and \$500,000 allocated by the Government for the fiscal year 1965. The works were suspended during the year.

PAHO/R, PAHO/CWSF

DOMINICAN REPUBLIC-3100 (-4), Public Health Services

Objective: To improve the organization of health services at the national and regional level; and to ex-

pand the local services in order to provide integrated services to the entire country.

Probable duration: 1953-

Assistance provided: 1 medical adviser, 1 sanitary engineer, 1 public health nurse, 1 administrative methods specialist, and 1 statistician; and equipment and supplies.

Work done: In the first quarter of the year, a coordinating health committee was established as part of the National Planning and Coordination Board, for the purpose of guiding and orienting the activities of the principal institutions in the country.

A second committee was established at the Ministry of Health and Social Welfare for the purpose of formulating a general plan and programs for the technical and administrative divisions. Although the objectives established by this committee were not attained, priorities were set up for the most important activities.

The organization and functions of the Health Ministry and of the Administrative Services unit began to be strengthened as regards both structure and usefulness. Despite the situation existing in the country, improvements in administration were made in the matter of salaries, budget accounting, and personnel management. Much remains to be done, however, both in these and other fields of public administration before the desired goals can be attained.

Standards were established for the program of control and prevention of gastroenteric diseases in childhood, and training was given to nurses and nursing auxiliaries at the health centers of Santiago and Puerto Plata and at Barahona Hospital.

The political situation during the second half of the year curtailed activities to emergency problems.

Of 1,592 persons who were bitten by dogs, 263 received rabies shots; 50 positive cases of rabies were confirmed among the 125 dogs examined and destroyed. Six cases of human rabies were recorded.

Among 5,232 persons tested, 75.2% were tuberculin negative and were vaccinated with BCG. A BCG vaccination program for the school population and the newborn at maternity wards was begun. In August a technical and administrative reorganization of the Dr. Rodolfo de la Cruz Loma Tuberculosis Sanatorium was begun; the beds were reduced to 650, and a reduction was made also in the medical, paramedical, and administrative staff.

To improve vital statistics a handbook with instructions on recording births, deaths, and fetal deaths was published, as well as a guide for filling in the medical death certificate.

Water-supply service was provided to 30,760 inhabitants of Barahona, San Cristóbal, and Santiago.

Personnel education and training activities were also seriously disrupted during the year. The nursing auxiliary course begun in March was completed on 7 November; it was attended by 47 students. The National School of Nursing resumed classes in late August; there were 17 first-year, 10 second-year, and 8 third-year students—the latter were graduated at the end of the year. Training was given to 75 untrained midwives in San Pedro de Macorís, Puerto Plata, and Santiago.

PAHO/R, WHO/R, WHO/UN-TA UNICEF

DOMINICAN REPUBLIC-3101 (-9), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Organization of medical education	México	12
1	Public health nursing (administration and supervision)	Puerto Rico	11½

WHO/R

DOMINICAN REPUBLIC-3102 (-11), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Medical education (physiology)	México	9
1	Public health administration	Chile	10
1	Ditto (dental public health)	Brazil	11
1	Ditto (hospital administration)	México	10½
1	Sanitary engineering	Ditto	11

PAHO/R

DOMINICAN REPUBLIC-6200 (-14), Medical Education

Objective: To strengthen medical education with emphasis on the teaching of preventive medicine.

Probable duration: 1962-1967.

Assistance provided: 1 short-term consultant and advisory services by Headquarters and Zone II Office personnel.

Work done: Problems related to the establishment of a department of preventive medicine at the medical school were discussed with the authorities of the University of Santo Domingo, and pertinent recommendations were formulated.

PAHO/R

DOMINICAN REPUBLIC-6300 (-3), Nursing Education

Objective: To strengthen the National School of Nursing by preparing nurses for the faculty, improving the physical facilities and areas for field practice, and expanding the curriculum to include the teaching of public health nursing and courses in teaching and supervision.

Probable duration: 1958-1968.

Assistance provided: 1 nurse educator and consultant services by the nurse adviser assigned to project AMRO-3202; a small amount of supplies and equipment; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Psychiatric nursing	Colombia	11½
1	Public health nursing (administration and supervision)	Puerto Rico	11½

Work done: The rhythm of activities was interrupted several times and once for as long as 6 weeks, due to the conditions prevailing in the country. The School was transferred to a suitable building within the city limits and had 35 students enrolled (as against 31 in 1964), 8 of whom were graduated at the end of October. The latter had the opportunity to practice teaching methods in a course for 47 students training as auxiliaries.

It was not possible to carry out the second course for auxiliaries planned for the year because the teaching materials and the bus sent by UNICEF for the course were destroyed by a fire at the customhouse. Clinical experience for students in the various health services suffered from the situation existing in the country, and a travel grant for the director of the School had to be suspended.

WHO/R

ECUADOR-0200 (-14), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1956-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 2 medical officers, 1 sanitary engineer, 3 sanitation inspectors, and advisory services by the malariologist assigned to project AMRO-0204 and by Headquarters personnel; drugs; and supplies and equipment.

Work done: The direction of the National Malaria Eradication Service (SNEM) was placed under a co-director from the Ministry of Social Welfare, Labor, and Health and another from the AID Mission in the

VIII. PROJECT ACTIVITIES

country. An AID-UNICEF-PAHO evaluation team reviewed the program in early 1965.

Some improvement was achieved in the budgeting practices affecting SNEM expenditures to permit funds not spent in the planned period to be retained for later use.

Special studies were carried out in an effort to determine the causes of persistence of transmission in troublesome areas. Special inter-cyclic spraying and spraying of new constructions were carried out to determine whether this would interrupt transmission.

Entomological investigations were continued in problem areas and in some special-study areas, revealing that the vectors continued susceptible to DDT and had not developed excito-repellency, and that they continued to be endophilous with anthropophilous habits.

During the 15th cycle (January-June) 328,679 houses were sprayed; and from July to November, the first 5 months of the 16th cycle, 259,252 houses were sprayed.

The number of blood smears examined was 340,127 and 4,179 (1.2%) were positive; 159,753 of the smears and 402 (0.25%) of those positive were collected from January to November in the consolidation-phase area, which had 1,287,906 inhabitants.

The Government was in the process of negotiating with AID a long-term loan to finance the program for the next 3 years.

PAHO/SMF, WHO/UN-TA AID, UNICEF

ECUADOR-0300 (-20), Smallpox Eradication

Objective: To eradicate smallpox from the country.

Duration: 1958-1965.

Assistance provided: During the development of the campaign the Organization provided 1 medical consultant and 1 sanitation inspector, as well as materials and vehicles, and in 1965 the advisory services of staff assigned to other projects in the country.

Work done: The eradication campaign intended to vaccinate at least 80% of the population ended in May 1964 with the vaccination of 3,541,989 persons, or 85% of the estimated population. The percentage of protected population in each province ranged from 74.6% to 100%.

Regular vaccinations were continued in 1965 so as to maintain the level of immunity. During the first 10 months of the year 654,010 persons were vaccinated. No cases of smallpox were reported.

ECUADOR-0500 (-18), Leprosy Control

Objective: To organize a leprosy control program in a demonstration area, in order to develop work methods that may be carried out through regular health services.

Probable duration: 1964-1967.

Assistance provided: Advisory services by the medical officer assigned to project AMRO-0504.

Work done: 4 medical officers continued to be in charge of the technical and administrative management of the program, assisted by 6 health inspectors and 30 field auxiliaries who are responsible for tracing persons suspected of having leprosy; confirmation of the diagnosis is the responsibility of the medical officers.

During 1965, 117,987 persons were examined (77.2% of the target) and 333 new cases of leprosy (83.2% of the expected 400) were found. Of these, 224 were male; 285 were over 15 years of age; there were 129 lepromatous, 61 tuberculoid, 131 indeterminate, and 12 cases had other forms of the disease.

A total of 1,815 clinical reviews were made (established target 1,800) and 1,382 bacteriological tests (established target, 1,050) were performed; 1,930 former contacts were re-examined (77.2% of the target of 2,500), and 1,336 contacts were examined for the first time.

The entire country except the Eastern Provinces and the Colón Archipelago was covered by the leprosy control program.

One more field auxiliary was trained; a short course on leprosy was given for health inspectors and health educators in Manabí province; students at the Medical Schools of the universities of Guayaquil and Quito received training in leprosy; the annual meeting of regional services was held and data recording systems, physical rehabilitation, and management of leprosy patients were discussed; personnel training was begun in order to implement an improved data recording system for leprosy. A sociological survey was begun in El Oro province to ascertain the attitude of the population to leprosy at the various cultural levels. It should be noted that voluntary collaborators play an important part in the distribution of DDS and in checking to see that the patients take the drug regularly as recommended.

UNICEF

ECUADOR-0900 (-52), Plague Control

Objective: To develop an effective plague control program in the endemic areas of the country.

Probable duration: 1965-1970.

Assistance provided: Advisory service by personnel of Zone IV Office.

Work done: Approval of the national budget for this program made it possible to begin training personnel in March and to increase activities gradually. The regional and provincial chief medical officers were appointed and their respective offices were organized; 30 auxiliaries were trained for El Oro Province, 17 for Esmeraldas, 100 for Guayas, and 40 for Pichincha. Field activities were also increased significantly.

The following activities were completed in the first 9 months of the year: 261,514 houses, 38,696 m² fences, and 1,954 fields were worked; 715,274 rats were exterminated; 591,290 caves were treated with cyanogas; 586,683 homes were visited; and 1,286 places were inspected and made sanitary.

The National Planning Board approved a loan request in the amount of S/62 million, which the Ministry of Social Welfare and labor had presented for financing the total national plague campaign. The request will be submitted to the IADB.

ECUADOR-2200 (-21), Water Supplies

Objective: To expand the water supply system of Quito and to plan for the construction of water supply systems for several cities of Ecuador.

Probable duration: 1961-

Assistance provided: 1 short-term consultant and advisory services by the engineering staff of Zone IV and of other projects in Ecuador.

Work done: Work on the Quito sewerage system and the Guayaquil water supply system continued.

The Ecuadorean Institute of Sanitary Works was established and began to operate. Its principal aim is to prepare national plans for water supply and sewerage services, to make the pertinent studies and build the works, to give advisory services, to administer existing systems, and to finance new works. The Institute made studies of 45 water supply systems which will serve a population of 328,434; it also built 21 water supply systems that will benefit 295,140 persons; it further studied 9 sewerage systems which will serve a population of 103,570 and built 4 sewerage systems serving 44,754 persons.

In cooperation with the Central University of Quito an intensive short course was given on the design of water supply and sewerage systems.

PAHO/R, PAHO/CWSF

ECUADOR-3100 (-4), National Health Services

Objective: To develop and integrate the public health services at the national and local levels, and specially the services of the province of Manabí.

Probable duration: 1953-1969.

Assistance provided: 1 chief medical adviser (Country Representative), 1 medical officer, 1 sanitary engineer, 1 public health nurse, and 1 sanitation inspector; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Clinical and social pediatrics	Chile	3
1	Health education	Puerto Rico	11½
2	Leprosy (rehabilitation and prevention of deformities)	Venezuela	3
1	Organization of medical education	Colombia	12
1	Ditto (morphology)	Brazil	10
1	Ditto (pharmacology)	Chile	1
1	Ditto (physiology)	Ditto	12
1	Rehabilitation (orthopedic brace-making)	Venezuela	4
1	Sanitary engineering	Argentina	9
1	Social pediatrics	Guatemala	1

Work done: Efforts to organize the National Health Service by integrating health activities with those of the Social Welfare Boards included the establishment of a committee composed of national experts to prepare a Bill and draft of amendments both to the Health Code and the Law establishing the Social Welfare Boards.

A decree was enacted establishing a General Technical Assistance Fund, in order to centralize all technical assistance monies for better control. The Fund contains both national and international contributions.

In the national smallpox eradication program 654,010 persons, or 71.37% of the annual target, were vaccinated during the first 10 months of the year.

Plague control activities were intensified and personnel were trained in the provinces of Esmeraldas, El Oro, and Guayas. A total of 715,274 rats were destroyed in 261,514 houses.

During the same period there were 12 deaths due to rabies among the 2,163 persons bitten, 367 of whom were bitten by rabid dogs. The building for the National Institute of Hygiene was completed and its equipment has been ordered.

During the year, 21 water supply systems that will serve a population of 295,140 were built. Studies were made for an additional 45 water supply systems. In addition, 4 sewerage systems were constructed and will provide service for 44,754 persons.

A new health center was inaugurated in Guayaquil, and a new center which includes maternity services was completed in Santa Elena.

VIII. PROJECT ACTIVITIES

The Manabí demonstration area continued to develop actively. The main activities during the year were as follows:

Four health centers were organized to serve a population of 149,174, and buildings to house 10 health centers were remodeled or constructed.

In maternal and child health the target was to give 50% of the expectant mothers (7,077) an average of 4 consultations each (28,308 consultations), but only 4,992 consultations were given (17.6% of the target); 1,085 women were delivered in the first 10 months of the year, or 27% of the target for the year.

In infant care the target was to give an average of 7 consultations to 60% of all infants under 1 year (5,656 infants), or 39,592 consultations. Only 5,762 consultations were given (14.5% of the target) and the average was 2.17 per child.

Of the established target of an average of 2 consultations for 50% of the 20,479 preschool-age children, only 9,526 consultations, or 23.3%, were given. The target for school children was 0.5 consultations each (5,402), but the average reached in 10 months was 0.66.

It was planned to vaccinate against smallpox 20% of the population over 1 year old and 80% of the population under 1 year of age, or a total of 111,310 persons; 95,811 vaccinations were given, or 86.1% of the target. DPT vaccinations were planned for 80% of the population under 7 years of age (17,277), but only 1,133 or 6.6% were vaccinated.

Five sanitation workshops were installed and, in accordance with plans, 1,404 privies, or 87.7% of the target, were built.

The following courses were conducted in the demonstration area: one 1-month orientation course on public health for 10 medical officers in charge of health centers; a 9-month course for nursing auxiliaries (45 students); a 2½-month course for health education auxiliaries (5 students); 6 months' inservice training for auxiliary personnel from the Portoviejo Hospital (12 students); and a 6-month course for laboratory aides (15 students).

The following courses were given in other parts of the country: a 2-month course on water supply and sewerage systems design (36 engineers); 1 month inservice training for nursing auxiliaries (29 students); a 3-week course on the classification of diseases (30 Civil Registry officials); a course for health inspectors (32 students); and a 1-month course for plague inspectors (187 students).

PAHO/R, WHO/R, WHO/UN-TA UNICEF

ECUADOR-3101 (-19), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Laboratory services (preparation of cultures)	Brazil	4
1	Ditto (vaccine preparation)	Ditto	6
1	Organization of medical education	Chile	7
1	Public health (dentistry)	Brazil	2½
1	Public health administration	Ditto	11
1	Ditto	México	10½
1	Ditto (epidemiology)	Chile	10
1	Tuberculosis (laboratory methods)	Venezuela	1

PAHO/R

ECUADOR-3102 (-22), Rural Medical Services

Objective: To promote the economic and social development and the health of the rural populations of the Andean Highlands so as to facilitate their integration into the national community.

Probable duration: 1956-1970.

Assistance provided: 1 medical adviser specialized in public health.

Work done: The program was extended, to cover a total of 192 communities in 6 provinces, and medical care was provided in 128 communities with an aggregate population of 77,485. The health team in each province was composed of several physicians, depending on the number of sectors, and included 1 dentist, 1 nurse, 1 sanitation inspector, and 5 nursing auxiliaries (the development team consisted of 1 agronomist, 1 polyvalent auxiliary agronomist, 1 social worker, and 1 educator). This staff was distributed throughout 60 outpatient clinics, 25 health posts, and 8 mobile units.

In order to perform the diagnosis of the health situation in the project area a form was prepared to facilitate the compilation and tabulation of the required data.

There were 16,189 adult and 9,589 child consultations; care was provided to 2,625 pregnant women (52.5% of the established target), 2,289 infants under 1 year (28.6% of the target), 3,580 preschool-age children (58.3% of the target), and 39,244 school children (65.4% of the target).

The number of persons vaccinated against smallpox was 586 (19.5% of the target), and against whooping cough, 2,274 (25.3% of the target).

During the first 10 months of the year, 590 privies (122% of the year's target) were built, and 74 community laundries (25.8% of the year's target).

In a 9-month course, 20 nursing auxiliaries were

trained, most of them from rural areas. A 1-month course on communicable diseases, first aid, nutrition, and community organization was conducted for 30 rural teachers; another course with the same number of students was given for students attending social service schools. Inservice training was also given to 35 nursing auxiliaries and 11 health inspectors. Twenty-six physicians, dentists, and nurses participated in a 5-day seminar on rural health problems.

PAHO/R **FAO, ILO, UN, UNESCO, UNICEF**

ECUADOR-3301 (-11), National Institute of Health

Objective: To promote the development of various sections of the National Institute of Health.

Probable duration: 1952-

Assistance provided: Advisory services by Headquarters personnel; and one 12-month fellowship to study bacteriology and immunology, in Brazil.

Work done: The Institute produced 972,000 doses of freeze-dried smallpox vaccine and 100,000 cc of glycerinated smallpox vaccine; 180,000 doses of diphtheria-whooping cough vaccine; 70,000 doses of typhoid vaccine; and 100,000 doses of diphtheria toxoid. To increase production and meet national needs, a new pavilion is being built.

Coordinated efforts were made to extend the laboratory network by establishing new provincial and local units, mainly by the Institute, which trained personnel, made evaluations, supplied reagents, and acted as a reference center. Half of the 500,000 tests made during the year were carried out by the peripheral laboratories.

PAHO/R

ECUADOR-4201 (-53), National Institute of Nutrition

Objective: To intensify applied nutrition research and personnel training at the National Institute of Nutrition.

Probable duration: 1950-1967.

Assistance provided: Consultant services by the adviser of project AMRO-4204; and a grant to the National Institute of Nutrition.

Work done: Among the activities of the National Institute of Nutrition, a clinical nutrition survey was carried out in 3 representative villages in the province of Manabí in order to establish the base line for the

applied nutrition program. As part of the research program, 52 children who had recovered from severe protein-calorie malnutrition were studied; the study included nutrition, biochemical, and socioeconomic research. With the aim of developing vegetable-protein mixtures, 156 experiments were made with 15 products.

Applied nutrition courses were conducted for nursing auxiliaries; nutrition courses were held for directors and home economists in day nurseries; and several courses were given for personnel of the Department of Family Assistance of the Ministry of Social Welfare and Labor, teachers of secondary schools, etc.

PAHO/G: Williams Waterman Fund

ECUADOR-6200, Medical Education

Objective: To strengthen medical education by improving the training of medical faculty.

Probable duration: 1965-

Assistance provided: Advisory services by a consultant assigned to project AMRO-6200.

Work done: The consultant discussed with faculty members of the School of Medical Sciences of the University of Guayaquil the possibility of their participating in the PAHO training program in Rio de Janeiro, Brazil.

ECUADOR-6300 (-16), Nursing Education

Objective: To strengthen teaching at the School of Nursing of the University of Guayas, in Guayaquil, and in the National School of Nursing, in Quito, by preparing instructors and broadening the curriculum with regard to public health nursing and principles of teaching and supervision.

Probable duration: 1957-1966.

Assistance provided: 1 nurse educator and consultant services by the nurse adviser assigned to project AMRO-3204; and one 12-month fellowship to study nursing education (teaching of psychiatric nursing) in Puerto Rico.

Work done: Advisory services which were formerly restricted to the School of Nursing in the University of Guayaquil were extended in 1965 to the school in the Central University of Quito. Activities carried out with the respective faculties of each school included assessment and revision of the current educational programs, obtention of needed equipment and teaching materials, and planning of individual course content in many of the subjects of the curriculum. With the ap-

VIII. PROJECT ACTIVITIES

proval of the authorities of the Central University a program leading to a bachelor of science degree was initiated in the school of nursing in Quito. In Guayaquil plans were made and a budget was prepared for a postbasic course in midwifery, scheduled to begin when the school year starts, in May 1966.

A questionnaire was prepared and sent to students in the 5th and 6th years of 11 secondary schools in the coastal area of Ecuador, in an attempt to determine reasons why young women are not attracted to nursing education. Total enrollment in the schools of nursing was 95 in Quito and 33 in Guayaquil.

PAHO/R, WHO/R

ECUADOR-6400, Sanitary Engineering Education

Objective: To improve the quality of training in sanitary engineering in regular engineering courses; and to develop a program of short courses aimed at promoting continuing education in this field.

Probable duration: 1964-1967.

Assistance provided: 2 short-term consultants and advisory services by personnel of other projects in Zone IV; and a limited amount of equipment and materials.

Work done: A short course in design of water supply and sewerage systems was held at the School of Physical Sciences and Mathematics of the Central University of Quito, from 18 October to 17 December, in cooperation with the Ecuadorean Institute of Sanitary Works and the Quito Municipal Water Board for 34 officers from all agencies in the country concerned with sanitary works.

In accordance with an agreement between the University and the Institute, a new building was being constructed at the University to house the laboratory of sanitary engineering.

PAHO/R

EL SALVADOR-0200 (-2), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1955-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 2 malariologists, 1 entomological aide, 2 sanitation inspectors, and advisory services by Headquarters and project AMRO-0203 personnel; antimalarial drugs; and a limited amount of imported supplies and equipment.

Work done: 506,442 blood smears were examined and 34,070 (6.7%) were positive, of which 31,884 were caused by *Plasmodium vivax* and 2,186 by *P. falciparum*. Because of financial difficulties, only 7,398 house sprayings were performed in 19 localities in Presa 5 de Noviembre and as part of the emergency plan in the port area of Acajutla. The departments of Cabañas, Chalatenango, Cuscatlán, Morazán, and Santa Ana and most areas above 200 meters, not sprayed in several years nor classified as in consolidation phase because of an inadequate surveillance mechanism, were showing progressive re-establishment of transmission in various localities.

El Salvador has been the site of numerous studies not only of causes of persistence of transmission, but also of various methods of supplementary attack where DDT spraying alone was not sufficient to halt transmission. New insecticides such as malathion and Baytex have been tested from time to time in areas of resistance to DDT and dieldrin, and a coordinated program of field testing of OMS-33 (Bayer 39007), a carbamate insecticide, was in progress in cooperation with WHO. This promising insecticide produces a rapid knockdown and kill of DDT-resistant mosquitoes, without irritating them. Tests with malathion have shown that its effect is of too short duration on walls made of certain kinds of mud. Larviciding methods have also been extensively studied (see AMRO-0209).

Mass drug-distribution methods developed in 1961 were applied on a wide scale covering 59,000 persons in 1963; an additional 60,000 persons in 1964, and 64,000 in 1965. Good results were achieved where personnel were well trained and supervised and where the population was properly indoctrinated to receive the medication, but failures were noted where these elements were lacking, and especially where malaria was continually being reintroduced from nearby untreated areas.

The maximum expansion of the drug program in 1965 failed to include the departments of La Unión, San Miguel, and eastern Usulután for want of finances. DDT spraying was also discontinued. In 1964 these areas experienced a severe outbreak, raising the total number of malaria cases in the country above 25,000, and in 1965 malaria continued at high levels and spread into areas cleared prior to 1962.

At the end of the year, the Government was searching for external sources to finance the next 3 years of the program.

PAHO/SME, WHO/R

AID, UNICEF

EL SALVADOR-0400 (-1), Tuberculosis Control

Objective: To develop a tuberculosis control program which, at first limited to the department of Usulután, will later be expanded to cover the whole country.

Probable duration: 1964-1968.

Assistance provided: Advisory services by the consultant of project AMRO-0403.

Work done The program was begun in August and up to October the work done was as follows: 11,262 tuberculin tests, 7,459 BCC vaccinations, 9,500 photofluorographies, and 19 cases detected.

The morbidity (0.2%) and overall infection (21.7%) found during this first stage are very low; this is attributed to the characteristics of the scattered rural population which was examined.

A study of the extent of tuberculin reactions shows a high prevalence of nonspecific sensitivity.

In the remainder of the country, an integrated program of indiscriminate BCG vaccination administered intradermally (without prior tuberculin test) was established and was being conducted by the general health services, together with other immunizations. Moreover, great emphasis was placed on the organization of laboratory services so as to meet the needs of bacteriological diagnosis of tuberculosis.

UNICEF

EL SALVADOR-2200 (-14), Water Supplies

Objective: To prepare short- and long-range plans to provide the entire country with water supply and sewerage services, including the designing of the systems and planning for their construction and operation; to expand the water supply and sewerage systems in the Capital; and to train technical and administrative personnel for the services.

Probable duration: 1961-1969.

Assistance provided: 1 sanitary engineer, 2 short-term consultants, and advisory services by the technical staff of Zone III Office; and the following fellowships:

<i>Fellowships</i>	<i>Field of study</i>	<i>Place of study</i>	<i>Months</i>
2	Environmental sanitation	Colombia	1
3	Environmental sanitation (organization and administration of water supplies)	Ditto	3½
8	Ditto	Colombia, Costa Rica, Panamá	1
2	Ditto	Colombia, Venezuela	1
1	Ditto	Puerto Rico	¾
2	Ditto	United States of America	½

Work done: The Government obtained a loan of \$4.4 million from the Inter-American Development Bank for the building of 68 rural water supply systems, to benefit a population of 56,600, and for the expansion of 38 urban water systems and 8 sewerage systems. The laboratory of the National Water Supply and Sewerage Administration (ANDA) continued operating normally. Control of the quality of water also continued, and a new system of water rates was established. The creation of a Department of Rural Water Systems which will be responsible for water supply and sewerage projects in rural areas was studied. ANDA and PAHO concluded an agreement whereby the Organization will make a complete study of all administrative and organizational aspects of the Administration.

PAHO/R, PAHO/G: IADB, WHO/R

EL SALVADOR-3100 (-19), National Health Services

Objective: To plan and carry out integrated health services programs as part of a national health plan.

Probable duration: 1963-1968.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 public health nurse; and 2 fellowships of 2½ months each, to study environmental sanitation (water supply and sewerage service administration), in Colombia.

Work done: The national health plan continued to develop as foreseen and at the end of 1965 a revision and evaluation was being made of activities in 1964, with the special characteristic that the evaluation was being made in each health institution by its own personnel in order to acquaint them with the procedure.

In 1965 the Ministry of Public Health and Social Welfare took care of the population by means of 14 hospitals, 9 health centers, 57 health units, 8 health posts, and 63 mobile units. There were 5,240 hospital beds available.

In the 4 health areas of the country, there were 1,148,301 medical consultations (81.2% of the target), 136,727 hospital dismissals (96.0% of the target), and 201,235 sanitation inspections (77.6% of the target); there were also 82,031 home visits made by nurses, and 230,443 minor consultations handled by nurses at health services.

Smallpox vaccinations were applied to 447,188 persons, or 115% of the target for the year (271,263 were primovaccinations); 57,525 doses of DPT (55.2% of the target) and 157,576 doses of tetanus vaccine (74.6% of the year's target) were applied.

VIII. PROJECT ACTIVITIES

Of 198,062 tuberculin tests made, 143,620 were read and a 79.6% negativity was recorded; 214,360 BCG vaccinations were applied, or 83.7% of the goal for the year.

In the maternal and child program, for which no goals were established, those attended from January to September were: 22,812 deliveries, 26,344 pregnant women, 16,160 infants under 1 year of age, and 15,292 preschool age children. UNICEF provided equipment for 15 health and 5 dental units.

In education and training the following activities took place: 62 nurses were graduated and another 12 completed the 8-month public health course; 61 were trained in nursing administration and supervision; 221 nursing auxiliaries were trained during the year; in an 8-month course for sanitation inspectors, 12 were trained; 16 students took a 3-month course in sanitation supervision; and in a 10-month course for nutrition auxiliaries, 22 students were trained. In addition there were two 2-week courses: 1 in human relations and medical education for 29 physicians, and 1 in water-supply planning for 28 engineers.

PAHO/R, WHO/UN-TA OAS, UNICEF

EL SALVADOR-3101 (-8), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Clinical and social pediatrics	Chile	3
1	Public health administration	México	10½
1	Sanitary engineering	Argentina	12

WHO/R

EL SALVADOR-3102 (-9), Fellowships for Health Services

Awards	Field of study	Country of study	Months
2	Environmental sanitation	El Salvador	3
1	Epidemiology	Costa Rica	1½
2	Nursing education	Brazil	10½
1	Organization of medical education	Chile	½
1	Ditto (microbiology)	Brazil	12
1	Ditto (planning)	England	12
2	Public health administration (dental public health)	Brazil	11
1	Ditto (hospital administration)	Ditto	15
1	Sanitary engineering	Guatemala	11

PAHO/R

EL SALVADOR-3300 (-15), Public Health Laboratory

Objective: To develop a nationwide public health laboratory program that will include creating laboratories in local areas at present lacking them, establishing work regulations and techniques, and training professional and auxiliary personnel.

Probable duration: 1964-1966.

Assistance provided: 1 short-term consultant.

Work done: The central laboratory made 147,000 examinations which included syphilis serology (78% of the total), isolations and mycobacteria resistance tests (11%), water (1.5%), milk (1.2%), and other tests (8.3%). The 14 peripheral laboratories analyzed a total of 153,000 samples.

As a technical reference center for regional and local units, the central laboratory began to train personnel so as to increase the coverage of the peripheral laboratories and improve the standard of laboratory work.

WHO/R

EL SALVADOR-4200 (-16), Nutrition

Objective: To develop, in collaboration with the Ministries of Public Health and Social Welfare, of Agriculture and Livestock, and of Education, an integrated program aimed at improving the nutrition status of the population of selected areas of the country and planned for expansion into a nationwide program.

Probable duration: 1964-1967.

Assistance provided: Advice by the staff of INCAP and of other projects in the country.

Work done: The first stage of the applied nutrition program was completed; it included 70 elementary schools, 9 health centers, and 7 agricultural extension agencies.

A clinical nutrition survey including 3,518 persons was carried out at the national level with assistance from the United States Interdepartmental Nutrition Committee for National Development and from INCAP. A dietary survey was made in 380 families and an agricultural survey in 300 families.

A 10-month course was conducted for 22 nutrition auxiliaries.

Upon completion of the first stage of the program, the Government indicated the wish to extend the program to the entire country.

FAO, UNICEF

EL SALVADOR-6200, Medical Education

Objective: To strengthen medical education by improving the training of medical faculty and the pedagogical approach to the teaching of medicine.

Probable duration: 1965-

Assistance provided: Advisory services by 2 short-term consultants assigned to project AMRO-6203.

Work done: A course entitled Laboratory in Human Relations and Medical Teaching was held at the School of Medicine in San Salvador from 11 to 23 October. The 29 students included 2 from Costa Rica, 1 each from Honduras and Nicaragua, and 3 from México.

Discussions were held with the pertinent authorities regarding the teaching program in anatomy, in preparation for the First Seminar on the Teaching of Anatomy in Central America, held at the School from 10 to 13 October. The consultants collaborated in the preparation of this seminar and also took part in the discussions.

EL SALVADOR-6400, Sanitary Engineering Education

Objective: To improve training in sanitary engineering in the regular courses of civil engineering; and to cooperate in the establishment of a program of short courses on subjects of interest in the country.

Probable duration: 1965-

Assistance provided: Grants for courses; and services by the engineering personnel of other projects in Zone III and of project AMRO-6403.

Work done: A short course on basic financial criteria for planning water supply systems was held at the School of Civil Engineering in La Unión, El Salvador, from 5 to 19 October, for 28 engineers from the various organizations concerned with water supply programs in the country. A 3-month course was begun for 16 sanitation supervisors, 10 of which came from the other 5 countries of the Central American Isthmus.

PAHO/R**EL SALVADOR-6600, Dental Education**

Objective: To reorganize and expand the activities of the Department of Preventive and Social Dentistry at the University of El Salvador; and to establish a research center for the study of relationships between economic and social problems and dental health.

Probable duration: 1965-1971.

Assistance provided: Consultant services by the

PAHO Country Representative; and a 6-month fellowship to study dentistry (oral pathology), in Puerto Rico.

Work done: A plan of operations was prepared for an agreement to be concluded between the Ministry of Social Welfare and Public Health and the Organization in order to begin activities in 1966.

PAHO/R**EL SALVADOR-6700, Training in Medical Records**

Objective: To improve medical records systems in hospitals and health centers in order to meet the need for accurate data.

Probable duration: 1965-

Assistance provided: 1 short-term consultant.

Work done: An evaluation of the medical records systems being used in hospitals and health centers in the country was carried out, suggestions to improve the systems were furnished to the authorities, and a final report with the pertinent conclusions and recommendations was prepared.

PAHO/R**FRENCH ANTILLES AND GUIANA-0200 (-4), Malaria Eradication**

Objective: To eradicate malaria in French Guiana and maintain Guadeloupe and Martinique free of this disease.

Probable duration: 1963-1969, year in which the consolidation phase is expected to be completed in French Guiana.

Assistance provided: Technical guidance by the Zone I malariologist and antimalarial drugs for French Guiana.

Work done: In French Guiana, 5,424 blood smears were examined; among 22 (0.4%) positives, 15 corresponded to *Plasmodium falciparum* and 7 to *P. vivax*. Spraying operations were continued, and 8,148 houses were sprayed on a once-a-year basis and 1,076 on a twice-a-year basis. A certain degree of transmission was detected, mainly along the border rivers that delimit the frontiers with Brazil and Surinam, and to some extent in a number of coastal areas.

Martinique and Guadeloupe remained free of malaria. In Guadeloupe, 33,512 blood smears were examined and no positives were found.

PAHO/SMF

VIII. PROJECT ACTIVITIES

GUATEMALA-0200 (-1), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1955-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 medical officer, 1 sanitary engineer, 1 entomologist, 3 sanitation inspectors, and advisory services by the Zone III Malaria Team (AMRO-0203); drugs; and entomological supplies.

Work done: 380,562 blood smears were examined and 14,472 (3.8%) cases were found for the whole country. This was a decrease in incidence as compared to 1964. From areas in the consolidation phase, 138,550 blood smears were examined and 2,742 (2.0%) positives were found.

Spraying of houses with DDT was carried out in semi-annual cycles in the attack-phase areas, where the vectors are susceptible to DDT, and in a single annual cycle along the Pacific Coast. The 12th DDT spraying cycle was concluded in January and covered 239,859 houses. During the 13th cycle (February-October) 115,204 houses were sprayed on a once-a-year basis and 149,524 on a twice-a-year basis. Emergency sprayings, performed in some areas, totaled 3,790 during the 12th cycle and 3,908 during the 13th cycle. The 14th cycle started in October and up to the end of December 81,365 houses were sprayed on the twice-a-year basis and 3,686 on the once-a-year basis.

The problem area of the Pacific Coast was put under collective treatment with antimalarial drugs, utilizing combined chloroquine-primaquine tablets on 2-week cycles. Some reduction in the population to be covered by drugs was required because of limitation of funds, but the program, initiated in March and extended into June, covered at its peak almost 119,000 permanent residents; in addition, some 8,000 temporary residents were treated on plantations. Antilarval work was also carried out in suitable localities.

The Government was in the process of negotiating with AID a long-term loan to finance the next 3 years of the eradication campaign.

PAHO/SMF, WHO-MESA

UNICEF

GUATEMALA-2101 (-22), Rural Sanitation

Objective: To develop water supply and sewage disposal systems for 50% of the rural population.

Probable duration: 1965-1966.

Assistance provided: 1 sanitary engineer; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Sanitary engineering	Colombia	2½
1	Ditto	United States of America	2½

Work Done: The Ministry of Public Health and Social Welfare began a 2-year program (1965-1966) which includes the construction of 74 rural water supply systems to benefit 77 communities with a population of 76,376. A loan request to the Inter-American Development Bank was under study at the end of the year. The building of 8 rural water supply systems was completed and another 7 were being built.

Better coordination was established between the Special Public Health Service and the General Directorate of Health in executing joint programs of water supply and excreta disposal in rural communities.

WHO/UN-TA

GUATEMALA-2200 (-17), Water Supplies

Objective: To prepare long-term programs for urban and rural water supplies; and to improve the organization and administration of water and sewerage services.

Probable duration: 1961-

Assistance provided: 1 short-term consultant.

Work done: The consultant, an expert in water pollution control programs, took part in the discussions of the V Seminar on Sanitary Engineering in Central America and Panamá, held in Guatemala City from 28 November to 4 December.

PAHO/R

GUATEMALA-3100 (-8), National Health Services

Objective: To formulate and carry out a national health plan providing for the extension of health services, to cover the entire population, and for the preparation of professional and auxiliary personnel.

Probable duration: 1954-1971.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 sanitation inspector; and the following fellowships

Awards	Field of study	Country of study	Months
1	Clinical and social pediatrics	Chile	3
1	Health statistics	México	10½
1	Nursing services	Ditto	1
1	Public health administration	Ditto	10½
1	Ditto (hospital administration)	Chile	16
1	Public health nursing (administration and supervision)	Ditto	1

Work done: Regulations governing the Planning Unit established the previous year were drawn up, and the program budget for 1966 was prepared. For purposes of making the health diagnosis of the country the collection of data in Regions III and IV was completed, and work was being done for the same purpose in Region I.

Six new health posts and 3 mobile units began to operate. UNICEF provided the furnishings for 25 health centers and 3 health posts. Nine health centers and 1 health post were built and construction of another 3 health centers was begun; 4 hospitals were under construction, and another 4 were being remodeled.

In the first 10 months of the year, there were 72,709 consultations for children (72.7% of the target for the year) and 34,899 pre- and postnatal consultations (77.5% of the year's target); and during the first half of the year, 19,665 children (49.2% of the target) were examined at the tuberculosis dispensary for children.

Only 32.3% of the smallpox program was completed in the first 10 months, with 213,803 persons vaccinated; also applied were 58,377 doses of DPT (36% of the target).

In the first 44 weeks of 1965 there were 189 cases of poliomyelitis: 152 paralytic, and 37 not classified. Polyvalent oral vaccine began to be applied in April and 107,252 immunizations were completed.

In the first 10 months of the year 3 rural villages were provided with potable water. In rural and suburban areas in the country 4,826 privies were built (48.3% of the goal for the year).

Two new recovery and nutrition education services were established, 1 each in Amatitlán and Antigua.

The following courses were conducted during the year: 1 postbasic course in psychiatric nursing for 9 students; 1 public health nursing course for 13 students; 1 nursing auxiliary course for 43 students, and 1 laboratory assistant course for 7 students. Also trained were 43 lay midwives, 26 food handlers, and 16 sanitation inspectors. To improve vital and health statistics a course for statistical auxiliaries was conducted for 43 students.

WHO/R

GUATEMALA-3101 (-12), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Epidemiology	Costa Rica	1½
1	Environmental sanitation	Ditto	½
2	Ditto (supervision and sanitary inspection)	El Salvador	6
1	Laboratory services (medical bromatology)	Panamá	4

UNICEF

Awards	Field of study	Country of study	Months
1	Nursing education	United States of America	1½
4	Public health administration	Costa Rica	3
1	Ditto (industrial hygiene)	Chile	10
1	Ditto (veterinary health, food hygiene)	Brazil	11

PAHO/R

GUATEMALA-3300 (-21), Public Health Laboratories

Objective: To study and evaluate the services provided by the existing central and local public health laboratories; to plan operating programs for the Biological Institute and for all laboratories that function at other levels; to establish local laboratories wherever necessary; and to train the necessary personnel.

Probable duration: 1964-1966.

Assistance provided: 1 specialized adviser; equipment and laboratory supplies; and one 6-month fellowship to study vaccine production, in the United States of America.

Work done: 118,000 tests were made, related to enterobacteria, mycology, serology of syphilis, Chagas' disease, etc.; and in the first 11 months of the year, 9,537 rabies treatments were given.

The Biological Institute acted as Regional Laboratory for the production of biological products and in the first 11 months of the year produced the following: 379,500 doses of smallpox vaccine, 394,240 cc of typhoid-paratyphoid vaccine, 6,625 doses of bovine rabies vaccine, and 7,530 doses of canine rabies vaccine. The Institute began producing whooping cough vaccine and diphtheria and tetanus toxoids in an experimental scale.

A study was made of the structure of the Institute with a view of expanding the physical facilities and increasing the number and activities of the staff.

A training course was conducted for 7 laboratory assistants.

PAHO/C: AID, WHO/UN-TA

GUATEMALA-4200 (-13), Nutrition

Objective: To improve the nutritional level in 70 communities in 10 departments of the country, especially in the rural areas, in coordination with the local health, educational, and agricultural services; to train personnel at the intermediate and local levels; and to establish food-preparation and school-garden demonstration services.

Probable duration: 1960-1965.

VIII. PROJECT ACTIVITIES

Assistance provided: Advice by INCAP personnel.

Work done: A nationwide clinical nutrition survey was carried out with the assistance of the United States Interdepartmental Nutrition Committee for National Development and INCAP.

The services of nutrition education and rehabilitation began operating in 4 health centers in various areas of the country, under the direction of the Department of Nutrition of the General Directorate of Health of the Ministry of Public Health and Welfare.

A course on health and safety was held at INCAP, in cooperation with UNESCO, for 102 education supervisors at the elementary and secondary school levels.

FAO, UNICEF

GUATEMALA-6200, Medical Education

Objective: To strengthen medical education by improving the training of medical faculty and the pedagogical approach to the teaching of medicine.

Probable duration: 1965.

Assistance provided: Advisory services by the 2 short-term consultants assigned to project AMRO-6203.

Work done: The teaching program in anatomy at the School of Medical Sciences of the University of San Carlos was reviewed in preparation for the First Seminar on the Teaching of Anatomy in Central America, held in San Salvador, El Salvador, from 10 to 13 October. A PAHO consultant also took part in discussions on the construction of a new building for the School.

GUATEMALA-6300, Nursing Education

Objective: To evaluate the curriculum of the school of nursing in relation to the health needs of the country.

Probable duration: 1955-1964; 1965.

Assistance provided: 1 short-term consultant and consultant services by the nurse adviser assigned to project AMRO-3203.

Work done: During the last 3 months of the year, the National School of Nursing evaluated its curriculum with assistance provided by international personnel, especially with regard to the relevance of the curriculum to the health needs of the country. The interest aroused among health, university, and school authorities, as well as among graduate nurses who participated in 10 committees and study groups, augured well for the implementation of the recommendations made, the most important of which follow: (a) That more consideration be given to recruitment and selection of candidates for the School;

(b) That steps be taken to incorporate the School into the educational system of the country at the level of university education; (c) That consideration be given to receiving at least a part of the students as nonresidents; (d) That the curriculum give additional emphasis to the preparation of the nurse for administration and supervision and for her functions in the field of public health; (e) That nursing faculty members be prepared so that at least 1 may be specialized in each of the 6 major areas of nursing; (f) That nursing faculty members continue their studies in order to fulfill the requirements for professors at university-level education; and (g) That the graduates be utilized more fully at the levels for which they are prepared.

PAHO/R

GUATEMALA-6500 (-14), Teaching of Public Health in Schools of Veterinary Medicine

Objective: To strengthen the School of Veterinary Medicine of the University of San Carlos, especially as to the teaching of public health and preventive medicine.

Probable duration: 1962-1967.

Assistance provided: 1 short-term consultant and consultant services by the adviser of project AMRO-0703; and a limited amount of teaching materials and equipment.

Work done: The teaching and research plans of the Department of Public Health of the School of Veterinary Medicine and Zootechnics were reviewed. The consultant assisted in making an evaluation of the general study plan of the school and subsequently prepared a new draft curriculum for presentation to the University Council. The adviser in veterinary public health assigned to Zone III (AMRO-0703) assisted in research work and in teaching the zoonoses course and the public health course.

The Pan American Zoonoses Center provided the Department of Microbiology and the Department of Public Health with antigens, bacterial strains, and technical information.

PAHO/R

HAITI-0200 (-4), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1961-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 2 medical officers (one served as

codirector of the National Malaria Eradication Service), 1 sanitary engineer, and 3 sanitation inspectors; and antimalarial drugs.

Work done: An AID-UNICEF-PAHO team made an evaluation, in February, of the results of the measures recommended for trial in the last half of 1964. The findings indicated that in the areas where the vector did much outdoor biting the quarterly DDT-spraying cycles still were inadequate to interrupt transmission.

The areas withdrawn from spraying in 1964 were divided into 3 categories and the following operations were conducted: in areas with no evidence of transmission the program carried out intensified passive surveillance, through voluntary collaborators and focal attack where necessary; in those with suspected transmission or inadequate information, a single annual cycle of DDT spraying (2g/m²) was applied and mass treatment with drugs was undertaken wherever foci were found; and in areas of higher incidence, collective treatment with chloroquine-pyrimethamine in 3-week cycles was administered, supplemented with an annual cycle of DDT spraying.

A mass drug-treatment program was initiated in mid-May in the places of highest incidence, with an aggregate population of some 467,000, and was gradually extended so that by December 1965 it included slightly over 1,340,000 persons.

In the area of Petit-Goâve, in which a pilot program had been started in October 1964, treatment was terminated in October 1965 after 15 cycles, with excellent results.

In 752,284 blood smears examined, 10,304 (1.4%) cases were found.

House sprayings carried out during the 1st quarterly cycle of the year covered 246,414 houses, and 404,692 were covered during the 2nd cycle performed from February to May; 5,418 houses were sprayed with DDT on a once-a-year basis between June and October, and 6,296 were sprayed during November and December.

PAHO/SMF

AID, UNICEF

HAITI-0300 (-18), Smallpox Vaccination

Objective: To vaccinate 80% of the population of the country against smallpox in a period of 5 years.

Probable duration: 1962-1967.

Assistance provided: Advisory services by staff assigned to other projects in the country.

Work done: During the first 8 months of the year, 359,937 persons were vaccinated, which brought the number of persons vaccinated since July 1962 to 1,205,046.

HAITI-0600 (-1), Yaws Eradication

Objective: To eradicate yaws from the country; and to use the program's manpower resources to vaccinate 80% of the population against smallpox in a period of 4 years since 1962.

Probable duration: 1950-1967.

Assistance provided: Advisory services by the epidemiologist assigned to Zone II (AMRO-0102).

Work done: Between January and June, 25 suspected cases of yaws were detected and 19 of them were confirmed by laboratory tests (the corrected figure for 1964 was 14 confirmed cases). There were insufficient human and material resources to properly conduct the program, and case-finding activities were therefore late and inadequate. The consultant made a detailed study of the yaws eradication program in Haiti and prepared a report. Plans were made for a special team to investigate the yaws problem in the country.

Smallpox vaccination with dried vaccine donated by the Government of Brazil was continued. Since the inception of the campaign up to August, 1,205,046 vaccinations had been performed.

UNICEF

HAITI-2200 (-22), Water Supplies

Objective: To plan, design, and finance an extension to the water supply system of Port-au-Prince and, later, to plan accordingly for the rest of the country.

Probable duration: 1960-1966.

Assistance provided: 1 sanitary engineer and advisory services by personnel of Headquarters and of Zone II Office; and a grant.

Work done: At the request of the Government of Haiti and of the Inter-American Development Bank, the Organization undertook the preparation of the definitive project for expanding the Port-au-Prince water supply system. To that end a contract was signed with a firm of consultant engineers for the preparation of construction plans. The Government established a semi-independent agency to be in charge of building the works and administering the water and sewerage services. IADB granted a loan of \$2.5 million for the first stage of the project.

PAHO/R, PAHO/G: IADB, WHO/R

HAITI-3100 (-16), National Health Services

Objective: To develop integrated public health services at the national and local levels; and to establish a demonstration and personnel-training area.

VIII. PROJECT ACTIVITIES

Probable duration 1957-1968.

Assistance provided: 2 medical advisers and secretarial services; and equipment and supplies.

Work done: The activities of this project in the demonstration area of the Plain of Cul de Sac and the Commune of Arcahaie, in the Department de l'Ouest, were limited because of the shortage of human and material resources.

The 4 health centers of the area performed 23,336 consultations in outpatient clinics, the most frequent of which were in relation to gastrointestinal diseases, the second in importance was infections of the respiratory tract, and the third malnutrition. Laboratory examinations at the Arcahaie Health Center and subcenters of Duvalierville and Saintard increased to 6,281 during the year ($\frac{1}{2}$ over the number in 1964).

Under the maternal and child health program, prenatal care was given to 2,203 pregnant women, and child consultations totaled 3,444.

A nutrition rehabilitation center was established in Arcahaie for children up to 5 years of age.

In the first 10 months of the year, 811 doses of DPT were applied; and in October smallpox vaccination was begun at the Duvalierville School, with a coverage of 90% of the students.

An increase was observed in environmental sanitation activities, particularly food control, health inspections, and privy construction. Twelve wells were drilled and tubes and pumps installed, and 125 privies were improved.

PAHO/R, WHO/UN-TA

UNICEF

HAITI-3103 (-24), Emergency Health Services

Objective: To rehabilitate and strengthen the public services of the country, including the health services, in the areas affected by hurricane Flora (1963).

Probable duration: 1964-1966.

Assistance provided: Advisory services by the staff assigned to project Haiti-3100.

Work done: The distribution of the equipment and supplies sent by UNICEF for hospitals and health centers in the country was planned, in preparation for distributing it after approval by the Ministry of Public Health.

UNESCO, UNICEF

HAITI-3300 (-9), Public Health Laboratory

Objective: To strengthen the organization of the Public Health Laboratory for the purpose of improving its

services; to establish subsidiary laboratories in 3 local areas; and to improve the functioning of hospital laboratories and dispensaries in the region damaged by hurricane Flora.

Probable duration: 1953-1968.

Assistance provided: 1 adviser in public health laboratories; equipment and supplies for the laboratories of the Port-au-Prince health centers and those of 8 hospitals, and for the School of Medical Technology.

Work done: The central laboratory received 25,439 samples which were submitted to 33,266 tests. The laboratories in Arcahaie, Duvalierville, and Saintard analyzed a total of 6,217 samples.

In cooperation with the School of Medicine a survey on brucellosis prevalence was completed.

The School of Medical Technology continued to train technicians and prepared a manual of laboratory methods.

PAHO/R

HAITI-4200, Nutrition

Objective: To develop a nutrition program; and to establish an agency to coordinate the nutritional functions of the Ministries of Health, of Education, and of Agriculture.

Probable duration: 1961-1969.

Assistance provided: A grant for equipment, supplies and personnel; advisory services by personnel of Zone II; and two 2½-month fellowships to study nutrition in public health, in Guatemala.

Work done: The Government and the Inter-American Childrens' Institute (Uruguay) planned and carried out a seminar on nutrition.

To provide easily accessible water for homes and irrigation a water pump and pipe lines were installed in Fonds Parisiens, and in this community, as well as in Guerin, Portail Leogane, Saintard and in the General Hospital of Port-au-Prince, the nutrition rehabilitation centers continued improving; seminars and series of courses for the training of personnel were planned and carried out.

PAHO/R, PAHO/G: Williams

Waterman Fund

FAO, UNICEF

HONDURAS-0200 (-1), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1956-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 malariologist, 2 sanitation inspectors, advisory services by project AMRO-0203 and Headquarters malaria technical personnel; and drugs.

Work done: An evaluation of the progress of the campaign was made in February and it was decided to discontinue the use of malathion house spraying in the southern problem area and to substitute a program of mass treatment with chloroquine-primaquine in biweekly cycles. The work of preparing for such a project—preparation of forms and manuals, recruitment and training of staff, and education of the public concerning the reasons for the treatment—was carried out in May and June, when treatment was initiated in Marcovia county, chosen for its high incidence of malaria. Financial restrictions did not permit extension of drug treatment to the remaining areas, but coverage was good in the existing program.

Small areas in the more northern areas of the country were still in the attack phase with DDT spraying. The 12th cycle was carried out from February through mid-July, with 35,603 houses sprayed with DDT. From mid-July to December, part of the 13th cycle, with 94,256 houses sprayed, was underway. A total of 24,997 house sprayings was made in the south, terminating the last malathion cycle in February.

Calculations of the extent and population of the malarious areas were made on the basis of new census information available, resulting in the following figures: consolidation-phase area, 79,217 km² with a population of 1,517,968; attack-phase area, 22,150 km² with a population of 333,294.

The number of blood smears examined was 310,301, of which 6,952 (2.24%) were positive; 196,538 of the smears were from consolidation-phase areas, as were 1,870 (0.95%) of those found positive.

The Government was in the process of negotiating with AID a long-term loan to finance the eradication for the next 3 years.

PAHO/R, WHO/MESA

AID, UNICEF

HONDURAS-0400 (-5), Tuberculosis Control

Objective: To organize in the departments of Comayagua, Francisco Morazán, and La Paz a demonstration area for the following purposes: to obtain epidemiological data, apply and evaluate practical methods of tuberculosis control, and train medical and auxiliary personnel for the gradual extension of the program to other areas of the country.

Probable duration: 1962.

Assistance provided: Advisory services by the consultant of project AMRO-0403.

Work done: This program, which was begun in the departments of Comayagua and La Paz, also included at the end of 1965 the departments of Cortés, Choluteca, and Francisco Morazán.

To the minimum program of tuberculin testing and BCG vaccination which was being carried out were added smallpox vaccination and DPT, with the cooperation and participation of other organizations. Indiscriminate (without prior tuberculin test) BCG vaccination was also established. The activities performed under the tuberculosis control program and the percentage achievement as compared to targets for the year were as follows: 162,145 (71%) tuberculin tests, 190,138 (132%) BCG vaccinations, 96,998 (100%) photofluorographies, and 2,019 (150%) cases detected.

UNICEF

HONDURAS-2200 (-9 and -10), Water Supplies

Objective: To organize, plan, and carry out national programs for the provision of water supplies and improvement of existing services.

Probable duration: 1960-

Assistance provided: 1 specialist in community development, 6 short-term consultants (specialized in accounting, invoicing, administrative organization, supplies and equipment, public relations, and the operation and maintenance of water supply systems), and advisory services by the engineer assigned to project Honduras-3100 and by Zone III Office personnel; and a 2½-month fellowship to study environmental sanitation, in Colombia.

Work done: A community development promotion campaign was carried out to bolster the rural water supply program. A plan was formulated, establishing the annual goals and objectives of the Autonomous National Water Supply and Sewerage Service (SANAA) for the next 5 years.

A comprehensive study was made of the administrative methods of SANAA for the purpose of providing the bases for organizing and coordinating its functions, and to that end a report containing a manual of procedures was prepared.

PAHO/R, WHO/R

HONDURAS-3100 (-4), National Health Services

Objective: To organize integrated public health services gradually, both at the central and local levels; and to train personnel.

Probable duration: 1955-1970.

VIII. PROJECT ACTIVITIES

Assistance provided: 1 medical adviser and 1 sanitary engineer.

Work done: The revision of the Health Code was completed, a planning manual was prepared and printed, and a study was made of the transformation of the 5-Year Plan into program budgets. The General Directorate of Health was also reorganized and a General Subdirectorato was established.

A total of 290,578 smallpox vaccinations (118% of the year's goal) was administered; 47,201 series of 2 doses of DPT were applied to children under 5 years of age (34.5% of the goal); and, in collaboration with the International Research Center of Louisiana State University, a pilot program of measles vaccination in 300 children under 3 years of age was also carried out in a suburb of Tegucigalpa.

In the wake of a poliomyelitis outbreak in the North and West of the country, which lasted 4 months and during which 222 cases were reported, the human resources of 60% of the health institutions were utilized to perform 53,527 complete immunizations among children of from 2 months to 7 years of age.

The goal of the tuberculosis program had been coverage of 1 million inhabitants for the year, which was met by performing 162,145 tuberculin tests (71% of the target), 190,138 BCG vaccinations (131% of the target), and 96,998 photofluorographies (100% of the target). Although it had been estimated that 1,344 new cases would be detected, the actual figure was 2,019.

In the leprosy control program, 3,687 persons (37.8% of the year's target) were examined and 183 new contacts (42.3% of the number estimated for the year) were found. Also controlled were 200 former cases.

During the first 10 months of the year, 13,978 pregnant women (73.4% of the target for the year) were controlled, and there were 3,590 consultations for well children (57.5% of the target).

The aim of providing 1 full-time medical officer to each of the 64 health establishments was fulfilled. Eleven new health posts and 2 subcenters began to operate; 3 subcenters were built and another 3 and 1 health post were under construction.

The program of rural water supplies was transferred from the Ministry of Public Health and Social Welfare to the National Autonomous Service of Water Supplies and Sewerage Services. With financing from the U.S. AID the construction of 12 rural water supply systems was begun, to benefit 40,000 inhabitants, and pipes were acquired to expand the system of Tegucigalpa, among whose population of 166,113 a total of 61,113 persons lack running water in their homes.

In 10 months, 1,681 privies were built in urban areas and 1,007 in rural areas.

The following courses were conducted: one 6-month course for nursing auxiliaries, for 30 students; 1 sanitation inspector course, for 4 students; 2 courses on nutrition in education, for 60 students; a 1-month course on principles of public health, for 20 recently graduated physicians; 1 elementary course in statistics, for field personnel, with 44 students; and in cooperation with the National University of Honduras and the advice of PAHO/WHO, 1 course on economic criteria, for 22 students.

WHO/UN-TA

UNICEF

HONDURAS-3101 (-6), Fellowships for Health Services

<i>Awards</i>	<i>Field of study</i>	<i>Place of study</i>	<i>Months</i>
2	Environmental sanitation	El Salvador	3
1	Epidemiology	Costa Rica	1½
1	Organization of medical education (medical pediatrics)	El Salvador	½
1	Public health administration (dental public health)	Brazil	11
1	Ditto (health planning)	Chile	3½
6	Ditto	Costa Rica	3
1	Ditto (veterinary public health)	Brazil	11
1	Public health education (health education)	Puerto Rico	12
1	Public health nursing	Chile	10
1	Public health nutrition	El Salvador, Guatemala	10½

PAHO/R

HONDURAS-3102 (-7), Fellowships for Health Services

<i>Awards</i>	<i>Field of study</i>	<i>Country of study</i>	<i>Months</i>
1	Environmental sanitation (laboratory analysis of water)	México	2½
1	Health statistics	Ditto	10½
1	Nutrition	Guatemala	2½
1	Public health administration (hospital administration)	Chile	16
1	Ditto (maternal and child care)	México	10½
1	Public health nursing	Chile	10
1	Sanitary engineering	México	11
1	Ditto (administration of water and sewerage systems)	Colombia, Venezuela	2
1	Ditto (ground water)	Colombia	2½

WHO/R

HONDURAS-3300 (-15), Public Health Laboratory

Two 1-month fellowships were awarded to study tuberculosis laboratory techniques, in Venezuela.

PAHO/R**HONDURAS-4200 (-51), Nutrition**

Objective: To develop an expanded nutrition program in a selected area of the country.

Probable duration: 1961-

Assistance provided: Advice by INCAP personnel.

Work done: The coordinated program of applied nutrition was conducted satisfactorily through 29 elementary schools, 2 health centers and 1 subcenter, 6 health posts, and 3 areas of agricultural development.

During March and April, INCAP personnel gave several 40-hour courses, on education in nutrition in schools, for 123 teachers of schools in the areas of Choluteca and Danlí, in the southern part of the country, where the coordinated program is being conducted.

FAO, UNICEF**HONDURAS-4800, Medical Care Services**

Objective: To improve the medical care services of social security institutions in the country.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and consultant services by the adviser of project AMRO-4803.

Work done: A study was made of the country's medical care problems and the medical services provided at the Honduran Institute of Social Security. Several changes were introduced into the administrative structure of the Institute: a Department of Medical Audit and another of Medical Statistics were implemented, staff regulations were drawn up for the physicians and a promotion roster was proposed, a classification system for established posts and standards for joining the staff were approved.

Plans were made to extend social security services to the North Coast of the country, and a study of changes in the administrative structure with a view to rationalization was underway.

PAHO/R**OAS****HONDURAS-6200, Medical Education**

Objective: To strengthen medical education by improving the training of medical faculty in basic sciences.

Probable duration: 1965-

Assistance provided: Advisory services by 1 of the short-term consultants assigned to project AMRO-6203.

Work done: Discussions were held with the pertinent faculty members of the School of Medicine and Surgery of the National University on the teaching program in anatomy, in preparation for the First Seminar on the Teaching of Anatomy in Central America, held in San Salvador, El Salvador, from 10 to 13 October.

HONDURAS-6300 (-14), Nursing Education

Objective: To establish a university school of nursing in Tegucigalpa.

Probable duration: 1965-1970.

Assistance provided: Consultant services by the nurse educator assigned to project British Honduras-6300 and by the nurse adviser assigned to project AMRO-3203.

Work done: During the last quarter of 1965 technical advisory services were provided to health, educational, and nursing authorities and to the Technical Advisory Board appointed to organize a university school of nursing. The plans call for starting the school in 1966 with the first group of students taking the first year of basic sciences which is required of all students in the National University. Several committees were working on the legal document to establish the new school, on the curriculum and budget; on recruitment and selection of students; and on the transfer of the present private school of nursing in La Ceiba, with its faculty and students, to the new institution in Tegucigalpa where a building was already available to serve as headquarters for the school and as residence for some of the students from outside of the Capital.

HONDURAS-6400, Sanitary Engineering Education

Objective: To organize and carry out courses on problems related to the water supply program.

Probable duration: 1965-1970.

Assistance provided: Grants for auxiliary personnel and teaching equipment and materials; and teaching services by personnel of other projects in Zone III.

Work done: A short course on basic financial criteria short-term consultants assigned to project AMRO-6203. for planning water supplies was held from 1 to 16 October for 22 students.

PAHO/R, WHO/R

VIII. PROJECT ACTIVITIES

JAMAICA-2200 (-16), Water Supplies

Objective: To design and build, or improve, water-supply systems in rural areas; and to organize the services for efficient operation and maintenance.

Probable duration: 1963-1968.

Assistance provided: 1 sanitary engineer and advisory services by Zone I Office personnel.

Work done: A Tripartite Plan of Operations was prepared and signed by the Government, WHO, and UNICEF. The work included detailed cost estimates of the first phase of the program and lists of materials and supplies needed for the construction of 14 rural water supply systems, as well as for the IV Training Course for Senior Public Health Inspectors to be held at Kingston in July 1966.

WHO/UN-TA

UNICEF

JAMAICA-2300 (-13), *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Probable duration: 1952-

Assistance provided: Advisory services by the staff of projects AMRO-2300 and -2301.

Work done: The *A. aegypti* control services continued to be limited to the international airports and the ports of Kingston and Montego Bay. (The eradication campaign was interrupted in 1961.)

JAMAICA-3100 (-17), Public Health Services

Objective: To study health problems, needs, resources, and cost of public health services; and to prepare and develop a national health plan within the framework of the plan for social and economic development of the country.

Probable duration: 1963-1970.

Assistance provided: 2 short-term consultants; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Air pollution (industrial hygiene)	United States of America	6
1	Communicable diseases (insect control)	Puerto Rico, Trinidad, United States of America, Virgin Islands (U.S.A.)	2
1	Environmental sanitation	Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts, St. Lucia, St. Vincent	2
1	Public health administration	United States of America	12
1	Ditto (dental public health)	Canada	12

Awards	Field of study	Place of study	Months
1	Ditto (health planning)	Trinidad	1½
1	Public health laboratory (microbiology)	United States of America	5¼
1	Public health nursing	Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts, St. Lucia, St. Vincent	2
2	Ditto (administration and supervision)	Canada, United States of America	4
1	Radiochemistry	United States of America	2½
1	Veneral disease control	Ditto	2

Work done: Studies were made of the organization and services of the University Hospital, particularly of the cost of services and use of resources.

Two committees were created at the Ministry of Health—one to analyze health manpower resources and needs and the other to plan steps to be taken for integration of health services.

WHO/R

JAMAICA-4300 (-19), Mental Health

Objective: To prepare a national mental health program integrated within the general health services of the country, including curative and preventive services and training of personnel.

Probable duration: 1964-1966.

Assistance provided: 1 short-term consultant and advisory services by the nurse advisers assigned to projects Venezuela-4300 and AMRO-3201.

Work done: At the request of the Government a survey to appraise the extent of the mental health problems had been carried out by a PAHO short-term consultant at the end of 1964. The report of the country's mental health facilities, services, and activities included recommendations on: psychiatric care, defining of the functions of the psychiatric hospital, training and functions of mental health personnel, evaluation of the national mental health program, and mental health legislation.

The nurse adviser assigned to project Venezuela-4300 visited Jamaica in 1965 to assist in the implementation of the above-mentioned recommendations.

The short-term consultant returned to the country for the purpose of making a progress report on the mental health activities of the island on the basis of the recommendations made during the first period of consultancy. He found that a better distribution of the patients had been made and that 7 outpatient clinics had been established on a monthly basis in the rural areas.

A workshop in which 22 nurses from service and edu-

educational institutions participated produced a course outline on psychiatric nursing, an evaluation guide, and a nursing-care project.

PAHO/R

JAMAICA-6201 (-4), Department of Preventive Medicine (UWI)

Objective: To strengthen the teaching program of the Department of Preventive Medicine of the University of the West Indies; and to expand the health statistics training program at the University, to serve the Caribbean Area.

Probable duration: 1962-1967.

Assistance provided: 1 temporary adviser, 1 short-term consultant, 1 full-time statistician, and advisory services by Zone I Office personnel; and one 12-month fellowship to study organization of medical education in Canada.

Work done: A 4-month health statistics training course for paramedical personnel was begun on 5 July with 28 students from 12 countries and territories in the Caribbean. Statistics courses for preclinical and clinical medical students were introduced in the fall term at the University.

PAHO/R, WHO/R

JAMAICA-6300 (-12), Nursing Education

Objective: To improve basic education in the schools of nursing; and to organize advanced courses for instructors and supervisors.

Probable duration: 1960-1966.

Assistance provided: 1 nurse educator and consultant services by the nurse adviser assigned to project AMRO-3201; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Nursing education	Canada	12
1	Ditto (teaching of psychiatric nursing)	Ditto	6

Work done: Activities carried out under this inservice education project included:

Workshops for 45 senior nurses to activate inservice programs in hospitals and health units for the improvement of patient care; for 24 inservice committee officers who plan programs within health units and hospitals or jointly in some parishes; and for a group of tutors (instructors in schools of nursing) to consider how to introduce psychiatric nursing into the basic program. Ques-

tionnaires were prepared to assist during followup visits to assess any progress made after the workshops.

A 16-week course in ward management and supervision was conducted for 12 ward sisters (nurses), as was a 2-week orientation program for 9 newly appointed ward sisters.

A program was prepared to assist 120 staff nurses of the Bellevue Mental Hospital to accept the need for changes in nursing education.

PAHO/R

JAMAICA-6301, Advanced Nursing Education (UWI)

Objective: To strengthen basic nursing education in the Caribbean Area through the preparation of nursing instructors in the University of the West Indies.

Probable duration: 1965-1967.

Assistance provided: 1 nurse educator (since October) and consultant services by the nurse adviser assigned to project AMRO-3201.

Work done: A university committee began deliberations to develop a specific plan of action for the organization of a department of nursing education within the Faculty of Education of the University of the West Indies. Courses were audited in education, administration, sociology and English, with a view to ascertaining their suitability for the nursing program.

WHO/R

MÉXICO-0200 (-53), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1956-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 medical adviser, 1 malariologist, 1 sanitary engineer, and 1 sanitation inspector; anti-malarial drugs and entomological material; and a 1-month fellowship to study malaria eradication, in Venezuela.

Work done: The following spraying operations were accomplished: the 17th half-yearly cycle which included 1,527,300 houses, and the 18th including 1,583,058; the annual cycle included 124,453 houses; the quarterly, 35,373, and the 4-month cycle, 309,956; there were an additional 56,578 emergency sprayings in areas in consolidation phase. Out of 1,595,503 blood smears examined, 10,113 (0.6%) were positive, and of these, 1,283 came from areas in consolidation phase.

The Government prepared a 6-year plan for the erad-

VIII. PROJECT ACTIVITIES

ication of residual malaria and a budget for the program.

With the Organization's assistance, studies were made (see AMRO-0210) and additional plans were drawn up to test certain attack methods for the areas where transmission persists because of biological reasons.

The Oaxaca state pilot plan of total attack, which consists in spraying the houses in the area with 2 g of DDT per m² of surface 3 times a year, supplemented by monthly case-finding and treatment of all cases found by radical cure, was progressing satisfactorily, even though the epidemiological results were not conclusive. The experience gained was useful as an attack model for other areas. Detection of 1 or 2 cases in localities which had undergone intensive and active case-finding with negative results lead to the suspicion that house-to-house visits were insufficient to detect every case, since many residents are away from their homes during the day. Attempts were being made to improve active case-finding to the maximum by means of secondary visits.

The objective of improving the malaria situation on the Gulf Coast was met in part. Good epidemiological progress was made in some areas which are under attack, while in others malaria control was not possible due mainly to the lack of financial resources. In the remaining malarious areas (Pacific Coast) the epidemiological situation remained the same as in 1964.

PAHO/SMF, WHO/UN-TA

UNICEF

MÉXICO-0201, Malaria Eradication in Problem Areas

Objective: To interrupt transmission by combining residual DDT sprayings with such additional measures as treatment of cases through radical cure or mass drug treatment of the population.

Probable duration: 1965-1968.

Assistance provided: Advisory services by staff assigned to other projects in the country; and a grant to help defray local project costs.

Work done: Plans were completed in Morelos state for the implementation of a Plan of Individual Responsibility in Limited Areas (PRIAL). The plan consists in assigning to each worker, duly supervised by an inspector, a small area for which he is responsible and in which he has to maintain all houses sprayed in monthly visits and at the same time search for cases among persons with a history of current or recent fever.

For Tapachula, in the state of Chiapas, the possibility of adding mass drug treatment to that of sprayings was under consideration because the vector, *Anopheles albi-*

manus, has developed varying degrees of resistance to DDT in the area.

WHO/MESA

MÉXICO-0400 (-38), Tuberculosis Control

Objective: To carry out a series of epidemiological surveys in selected areas of the country; and to establish in the state of Querétaro a demonstration area to show the applicability and effectiveness of tuberculosis control measures.

Probable duration: 1960-1968.

Assistance provided: 1 medical officer and advisory services by the Regional Adviser.

Work done: The use of standard forms was begun and work instructions were printed.

After the appointment of new officers for the National Tuberculosis Campaign a meeting was held with these authorities, with the persons directly responsible for the Querétaro project, and with international staff for the purpose of evaluating and reviewing the program; a study was made also of the possibility of establishing a *verification area*, in which the program would be planned from the outset on the basis of a well defined structure, organization, and standards, in accordance with the policy and guidelines of PAHO/WHO so that the area might serve as a basis for evaluating and improving the tuberculosis control procedures.

During the first quarter of the year, the work done included 25,510 tuberculin tests, 19,002 BCG vaccinations, 3,039 miniature X-rays, 340 sputum tests, and 102 cases detected in the cities of Amealco and El Marqués in Querétaro state. In the remainder of the country the work included: 208,933 tuberculin tests, 109,461 BCG vaccinations, and 168,515 photofluorographies; 31,549 tuberculosis cases were recorded and 14,838 contacts were examined, even though certain administrative difficulties caused a reduction in personnel performance.

WHO/R

UNICEF

MÉXICO-0500 (-29), Leprosy Control

Objective: To develop a national leprosy control program based on modern methods and techniques.

Probable duration: 1960-1968.

Assistance provided: Advisory services by the epidemiologist assigned to project AMRO-0102; and one 3-month fellowship to study leprosy (rehabilitation and prevention of deformities), in Venezuela.

Work done: From 1 January to 30 June, 500 new cases of leprosy were detected, of which 265 were male; 453 were over 15 years of age; 248 were lepromatous, 106 tuberculoid, and 146 indeterminate.

At the end of October the cases registered totaled 14,909, of which 10,389 were under control; 8,155 were lepromatous, 3,125 were tuberculoid, and 3,629 were indeterminate. The number of registered contacts was 10,023, of which 6,356 were under control.

Case-finding was carried out at 19 health centers and by 19 mobile units. The treatment of choice was by the oral route.

WHO/R

UNICEF

MÉXICO-2200 (-39), Water Supplies

Objective: To plan a national public water supply program.

Probable duration: 1960-

Assistance provided: 1 sanitary engineer and advisory services by the engineering staff of Zone II Office and of other projects in the country.

Work done: The Water Supply and Sewerage Section of the Ministry of Hydraulic Resources was reorganized, and new units were created to take care of matters relating to planning and statistics, administrative coordination, training, and public relations. A Water Rates Committee was appointed to study existing rates and any changes that may be required. The Ministry submitted a request to the Inter-American Development Bank for projects in the states of Michoacán, Puebla, and Sonora which will benefit 347 localities, 17 of them with over 10,000 inhabitants, 102 with from 2,500 to 10,000 inhabitants, and 228 with under 2,500 inhabitants. It was estimated that the works will supply water to 4.5 million persons and provide 2 million persons with sewerage services.

Water supply systems were built in 98 localities to supply a population of 910,251, and sewerage services were built in 10 localities with an aggregate population of 528,804.

PAHO/CWSF

MÉXICO-3101 (-15), State Health Services

Objective: To improve the organization and coordination of health services at the regional and local levels.

Probable duration: 1954-1967.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 sanitation inspector.

Work done: The Ministry of Public Health and Welfare was reorganized with a view to avoiding a duplication of agencies with the same function and to delimit the policy-setting and executive functions, lines of authority were established, aiming at simplification of the structure, in order to achieve better coordination and improved administration. The various technical policy-setting departments were placed under the Subsecretariat of Public Health and Welfare and some were combined, according to the preventive and curative activities incumbent upon them, in order to permit the coordination and integration of the functions of these departments at the intermediate and local levels. The General Directorate of Coordinated Public Health Services of States and Territories, taking as a model the integration of services and organization in the states of Guerrero and Hidalgo, has been extending that type of organization to the other states.

The National Plan of Rural Water Supply was accomplished to the extent of 80%. A guide for the control of water quality and systems was prepared, and the mobile laboratory to be used for the study and control of contamination of hydrographic basins was being built.

Health regulations were drawn up for land development, for the construction of buildings, and for the sanitation of beaches and tourist places. In the first 10 months of the year, construction was begun on 248 water supply systems for rural communities, which will serve a population of 173,107.

The training of professional, technical, and auxiliary personnel was carried out according to plan, and the following courses were conducted: four 2-month courses on health orientation for physicians, attended by 60; a 10-month course for community development experts, with 20 students; a 6-month course for public health laboratory assistants, with 14 students; a 4-month health administrator course, with 20 students; two 3-month courses for sanitation inspectors, with 30 students; three 3-month courses for nutrition auxiliaries, with 72 students; 18 courses for nursing auxiliaries, given at 9 training centers, with a total of 360 students; a 1-month course for dental hygiene auxiliaries, for 30 students; and four 2-month courses in public health orientation, for nonprofessional nursing personnel, with 60 students. At the end of the year, 13 students were attending a 10-month course for sanitation technicians.

WHO/R

UNICEF

VIII. PROJECT ACTIVITIES

MÉXICO-3102 (-18), Fellowships for Health Services

A 1964 award (México-24) was extended for 6 months for the fellow to make observation visits in Norway and Yugoslavia.

WHO/R

MÉXICO-3103 (-25), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Control of communicable diseases	United States of America	1
1	Environmental sanitation	Ditto	1¼
1	Sanitary engineering	Brazil, Venezuela	1
1	Ditto	Colombia	1
1	Ditto	Colombia, Perú, Venezuela	1½
1	Ditto	Perú, Venezuela	1
1	Veterinary public health	United States of America	12

PAHO/R

MÉXICO-3300 (-28), Public Health Laboratory

Objective: To expand the services of the National Public Health Laboratory, with emphasis on the control of biological products, food and drugs.

Duration: 1958-1965.

Assistance provided: 1 short-term consultant in 1959, another in 1961 and a third in 1962, and while the project was in operation, advisory services by Headquarters and Zone II Office personnel; reagents and strains; equipment and supplies; and 2 fellowships in 1960, 1 in 1961, 2 in 1962, 1 in 1963, and 2 in 1964.

Work done: Since the project went into operation, the Division of Biological Products of the National Public Health Laboratory was planned and organized. Plans were drawn up for a study on immunization against epidemic typhus by means of strain E of *Rickettsia prowazeki* and a serological study to determine the prevalence of rickettsioses in areas of epidemic typhus was carried out in cooperation with the University of Maryland, U. S. A. The quality and potency of various products manufactured in the country were tested by the reference laboratory services provided by the Organization.

In 1965 the laboratory produced 18 million doses of smallpox vaccine, 3 million doses of BCG, 4.5 million cc of DPT, 2 million cc of tetanus toxoid, 2 million cc of typhoid vaccine, and 2 million cc of rabies vaccine. It

also prepared sera against the causal agents of diphtheria, tetanus, botulism, rabies, gangrene, and typhoid.

PAHO/R

UNICEF

MÉXICO-4200 (-23), Nutrition

Objective: To develop a nationwide nutrition program using the resources of the National Institute of Nutrition, including surveys to learn the situation in the various regions and the training of professional and auxiliary personnel.

Probable duration: 1959-1967.

Assistance provided: Advice by the technical staff of Headquarters and of Zone II.

Work done: Three 3-month courses were conducted in the state capitals of Chilpancingo (Guerrero) and Morelia (Michoacán), and in Jalapa, Tabasco, for a total of 72 nursing auxiliaries.

FAO, UNICEF

MÉXICO-6200 (-32), Medical Education

Objective: To strengthen medical education, with emphasis on the teaching of preventive and social medicine, by improving the training of medical school teachers and researchers and the pedagogical approach to the teaching of medicine.

Probable duration: 1958-

Assistance provided; 1 short-term consultant and advisory services by Headquarters and Zone II Office personnel; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Organization of medical education	El Salvador, Venezuela	1
2	Ditto (laboratory in human relations)	El Salvador	¼

Work done: With the support of the W.K. Kellogg Foundation efforts were continued to strengthen the Schools of Medicine of the University of Nuevo León, Monterrey, to develop it as a faculty-training center.

Discussions were held with the Ministry of Public Health and Social Welfare on the possibility of expanding the resident and "subresident" training program at the National Institute of Nutrition in order to train teachers and investigators.

The Ministry of Health and the Mexican Association of Medical Schools developed a program on medical pedagogy, with emphasis on human relations and medical teaching, for the medical schools of the country.

PAHO/R, WHO/R

MÉXICO-6300 (-14), Nursing Education

Objective: To improve basic nursing education; to prepare graduate nurses to serve as instructors; and to prepare nurses for the training of auxiliary nursing personnel.

Probable duration: 1958-1967.

Assistance provided: 2 nurse educators and consultant services by the nurse adviser assigned to project AMRO-3202; and one 1½-month fellowship to study nursing education in the United States of America.

Work done: In basic nursing education, assistance was given, through the section on Professional Education of the Ministry of Health and Welfare, to 6 schools in as many states; and a directory of the 73 schools of nursing in the country was prepared, based on information supplied by their directors. Fourteen of the schools meet the criteria established for inclusion in the Directory of Schools of Nursing in Latin America.

Assistance was also given in the training of middle-level nursing personnel or "nursing technicians." Approximately 110 were graduated from a 1-year course which prepares them for direct nursing care. These correspond to nursing auxiliaries in several other Latin American countries.

Since the "nursing technicians" will be carrying out general nursing duties, the Ministry decided to reduce the course for auxiliary nursing personnel from 6 to 3 months and give training for specific functions only; 360 auxiliaries completed their studies in 9 training centers and returned to the services in which they had been working.

The postbasic course in public health given in the School of Public Health was completed by 17 nurses.

A seminar attended by 130 persons from the states and the federal district discussed the strengthening of schools of nursing through the additional preparation and inservice education of members of the nursing faculties.

Two-month courses were organized in 4 states in which 60 members of the nonprofessional nursing personnel of the health services received orientation to public health nursing.

Much interest was shown in programed instruction after 14 nurses in key positions attended a series of 10 lectures on this method, given by a Mexican nurse who had participated in the seminar held at Teachers College, Columbia University, New York, in 1965 (see AMRO-6310).

PAHO/R**MÉXICO-6400 (-35), Environmental Sanitation Training**

Objective: To organize in the School of Sanitary Engineering of the National Autonomous University of México (Federal District) and in the School of Engineering of the University of Nuevo León (Monterrey) courses in sanitary engineering and in public health, for graduate engineers.

Probable duration: 1961-1970.

Assistance provided: 1 sanitary engineer, short-term consultants, and services by the engineering staff of other projects in Zone II; grants for materials and equipment; and the following fellowships:

<i>Awards</i>	<i>Field of study</i>	<i>Country of study</i>	<i>Months</i>
1	Environmental sanitation	United States of America	1½
1	Ditto	Perú	1½

Work done: A survey was made in 23 universities throughout the country to acquire information on the teaching of sanitary engineering at schools of civil engineering.

The National Autonomous University of México held 4 short courses as follows: on application of electronic computers to the solution of sanitary engineering problems, from 16 to 28 August, for 12 students; on ground water, from 20 September to 9 October, for 44 students; on design of water supply systems for small communities, from 18 to 30 October, for 29 students; and on administration and financing of water supply systems, from 8 to 20 November, for 25 students. At the University of Nuevo León, Monterrey, a course was held on water supply and distribution, from 15 to 27 November, for 30 students.

The Ministries of Public Health and Hydraulic Resources and the National Autonomous University of México continued studying the organization and functions of a sanitary engineering research and training center, a request for which was being prepared for submittal to the United Nations Special Fund.

PAHO/R, WHO/R**MÉXICO-6500 (-34), Teaching of Public Health in the Schools of Veterinary Medicine**

Objective: To strengthen the teaching of public health and preventive medicine in the schools of veterinary medicine of the country.

Probable duration: 1958-1967.

Assistance provided: 1 short-term consultant; and teaching materials and technical publications.

VIII. PROJECT ACTIVITIES

Work done: The consultant visited the schools of veterinary medicine and zootechnics at the National University of México; at the Juárez University of Villahermosa, Tabasco; at the University of Veracruz; at the Guadalajara University of Jalisco; and at the Tamaulipas University in Ciudad Victoria, and cooperated in organizing the teaching of public health and preventive medicine. An evaluation was made of the programs of professional training at each of these schools, as well as an estimate of the possibilities for technical development.

WHO/R

NETHERLANDS ANTILLES-3101 (-2), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Public health administration (public health dentistry)	Canada	12
1	Public health nursing	Jamaica	10

PAHO/R

NICARAGUA-0200 (-1), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1957-1972, year in which the consolidation phase is expected to be completed.

Assistance provided: 2 malariologists (only 1 after September), 1 sanitary engineer, 3 sanitation inspectors, and consultant services by the technical staff of Headquarters and project AMRO-0203; antimalarial drugs; and a limited amount of equipment and supplies.

Work done: 236,531 blood smears were examined and 10,275 (4.3%) were positive. Most cases occurred in the departments of Chinandega, Estelí, León, and Managua.

Spraying operations were carried out regularly in the area where the vector is susceptible to DDT. The 13th half-yearly cycle was completed by spraying 33,998 houses and 30,010 houses were treated under the 14th cycle. An additional 3,661 houses were sprayed as an emergency measure in areas in consolidation phase.

There were 26,930 sprayings with malathion, which represented the 5th and 6th cycles in Estelí, the 8th and 9th in San Antonio, the 9th in Montelimar, the 2nd and 3rd in Villa El Carmen, and the first in La Paz and in certain neighborhoods of Managua and Nagarote.

Antilarval measures were limited to the cities of Condega, El Viejo, and Managua.

The mass drug treatment program was suspended in all areas except the municipality of El Viejo where the program reached the 24th cycle of drug application in a

population of 30,000 scattered in more than 40 localities.

Collaborating posts increased to 1,788 and an average of 856 reported monthly.

The Government was negotiating with U.S. AID for a long-term loan to finance an adequate program that will include sprayings, larvicides, mass treatment with anti-malarial drugs, and surveillance operations for the next 3 years.

PAHO/SMF, WHO/MESA AID, UNICEF

NICARAGUA-0400 (-8), Tuberculosis Control

Objective: To organize in the departments of Chinandega and León a demonstration area for obtaining epidemiological data, applying and evaluating practical methods of tuberculosis control, and training medical and auxiliary personnel for the gradual extension of the program to other areas of the country.

Probable duration: 1964-1968.

Assistance provided: Advisory services by the consultant of project AMRO-0403 and by staff of Zone III Office.

Work done: The participation of all health services in tuberculosis activities was begun by gradually training the personnel in those services. Special attention was given to the laboratory service, and 17 laboratory technicians from the local health services were given training.

The accomplishments of the year and the percentage of target achievement were as follows: 101,893 (60%) tuberculin tests, 71,461 (60%) BCG vaccinations, 22,245 (55%) photofluorographies, 32,670 (93%) X-rays, and 3,690 (73%) sputum tests. A total of 2,402 cases were detected and placed under treatment, in addition to the 232 already under treatment from previous years. Of the 1,705 contacts who were given chemoprophylactic treatment in 1965, 375 had already been receiving it.

National agencies, local civic groups, and communications media and publicity agencies of the country cooperated in the project.

UNICEF

NICARAGUA-2200 (-10), Water Supplies

Objective: To establish a central agency responsible for water and sewerage services; and to plan a national water supply program.

Probable duration: 1962-1967.

Assistance provided: 1 sanitary engineer, short-term consultants (specialized in accounting, invoicing, per-

sonnel, supplies and equipment, and public relations), and advisory services on administrative organization, operation and maintenance, by Zone III Office personnel.

Work done: A loan request for the rural water supply program was prepared for submittal to the Inter-American Development Bank. A comprehensive study was made of the administrative methods and procedures of the Managua Water Authority with a view to establishing the bases for a more functional reorganization of the institution; to that end a report was prepared and will serve as a guide for a manual of procedures.

PAHO/R, PAHO/CWSF, WHO/R

NICARAGUA-3100 (-3), General Health Services

Objective: To plan and carry out a National Health Plan that will serve as a basis for the planning and execution of specific programs.

Probable duration: 1963-1970.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 public health nurse; and the following fellowships:

Awards	Field of study	Place of study	Months
1	Environmental sanitation (laboratory analysis)	México, Puerto Rico	1½
1	Hospital administration	Chile	6
1	Organization of medical education	México	12
1	Planning	Chile	3½
3	Ditto	Costa Rica	3
2	Sanitary engineering	Guatemala	11

Work done: As part of the reorganization begun in the previous year, in 1965 a Department of Veterinary Public Health, a Division of Education and Training, a School for Auxiliary Technicians, and 1 rehydration center were established; and the Technical Council was reorganized.

The National Health Plan was completed and the working area was divided into 3 health regions. Nine health centers and 3 health posts were furnished, and construction began on 3 additional centers and 2 posts; 2 of the health centers were donated by the Government of México.

Under the smallpox program, 173,358 persons were vaccinated (71.1% of the year's target); 62,008 children received DPT (110% of the target); and 421,950 children were immunized against poliomyelitis (target for the year was 64,916).

Under the rabies campaign, 25,367 dogs (84.6% of the established target) were destroyed, and 484 were

vaccinated. In addition, under the rabies program underway along the border with Costa Rica, 2,104 dogs were destroyed, estimated to be 83% of all stray dogs in the border area.

In environmental sanitation, 15 urban water supply systems were built to serve 65,525 persons, and 11 rural systems to serve 6,954. Also built were 4,715 sanitary privies, or 79% of the established target (2,000 privies were built in 1964).

An intensive training program was carried out: 3 courses in nursing administration and supervision, for 45 nurses; 9 courses trained 248 nursing auxiliaries; and 4 short courses in venereology, for 162 physicians and medical students. A short course on potable water was also conducted, for 72 officials, and another on principles of administration, for 25 persons.

PAHO/R, WHO/R, WHO/UN-TA UNICEF

NICARAGUA-3101 (-7), Fellowships for Health Services

Awards	Field of study	Country of study	Months
2	Environmental sanitation	El Salvador	3
2	Epidemiology	Costa Rica	1½
1	Organization of medical education	El Salvador	½

PAHO/R

NICARAGUA-4200 (-11), Nutrition

Objective: To develop a coordinated program of applied nutrition in a selected area of the country, including education and training activities, promotion of the production of highly nutritious foods, and improvement of the nutritional status of pregnant women, nursing mothers, preschool and school children.

Probable duration: 1962-

Assistance provided: Advice by Headquarters and INCAP personnel.

Work done: The coordinated program of applied nutrition was being extended to the North of the country through 7 consolidated schools, 65 elementary schools, 1 normal school, 8 health centers, and 5 agricultural extension agencies. Special attention was given to the incorporation of education in nutrition in elementary schools by establishing work units for the purpose.

FAO, UNICEF

VIII. PROJECT ACTIVITIES

NICARAGUA-4800, Medical Care Services

Objective: To study the possibility of coordinating the hospital resources of the National Board of Social Welfare and those of the National Institute of Social Security.

Probable duration: 1965.

Assistance provided: 1 short-term consultant.

Work done: The Organic Law of the Social Security was revised; its rules and regulations were studied, and a report, with the pertinent conclusions and recommendations, was prepared.

PAHO/R

NICARAGUA-6200, Medical Education

Objective: To strengthen medical education by improving the training of teachers of basic sciences and preventive and social medicine.

Probable duration: 1965.

Assistance provided: Advisory services by a short-term consultant assigned to project AMRO-6203 and by Headquarters personnel.

Work done: Discussions with the pertinent faculty members of the School of Medical Sciences of the National University were held regarding the teaching program in anatomy, in preparation for the First Seminar on the Teaching of Anatomy in Central America, held in San Salvador, El Salvador, from 10 to 13 October.

The Department of Preventive Medicine of the School of Medicine conducted 1 short course on venereal diseases, for 40 medical students. Plans were prepared to offer courses in immunization and in nutrition in 1966.

NICARAGUA-6300 (-5), Nursing Education

One 1½-month fellowship was awarded to study nursing education, in the United States of America.

WHO/R

NICARAGUA-6400, Sanitary Engineering Training

Objective: To organize and develop short courses on subjects relating to the Water Supply Plan.

Probable duration: 1965.

Assistance provided: 5 lecturers and teaching services by personnel of Zone III; a grant for auxiliary personnel and for teaching equipment and materials; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Administration of water and sewerage systems	Colombia	2½
1	Environmental sanitation	Chile	½
1	Sanitary engineering	Guatemala	11

Work done: A short course on basic financial criteria for planning water supply systems was held from 29 September to 13 October for 24 students; most of the students were engineers from national and state agencies.

PAHO/R

PANAMÁ-0200 (-2) Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1956-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 malariologist, 1 sanitary engineer, 1 entomologist, 3 sanitation inspectors, and consultant services by the technical staff of Headquarters and project AMRO-0203; antimalarial drugs; supplies and equipment; and one 4½-month fellowship to study malaria eradication, in Brazil.

Work done: 102,969 slides were examined and 1,929 (1.9%) were positive; of these, 172 were *Plasmodium falciparum* and 1,757 were *P. vivax* infections.

Under the 6th cycle, from January to June, 183,650 houses were sprayed with DDT. The 7th cycle included 196,902 houses sprayed from July to December, making a total of 380,552 sprayings for the year.

In the pilot area in which the half-yearly spraying with dieldrin was being tested, 3,000 sprayings were performed; 1,867 corresponded to the January-June cycle, and 1,133 to the July-December cycle.

The Government was completing the preparation of a 3-year financing plan to overcome the administrative and economic obstacles to routine activities.

PAHO/SMF, WHO/MESA

UNICEF

PANAMÁ-0400 (-14), Tuberculosis Control

Objective: To develop in the provinces of the Central Region of the country a tuberculosis control program integrated with the local health services; and to expand and improve the control programs in the other two regions, insofar as it is justified by the progress of the Central Region program.

Probable duration: 1963-1969.

Assistance provided: Advisory services by staff assigned to other projects in the country.

Work done: In the province of Veraguas the campaign

examined 19,845 persons (29,732 consultations) among which were 6,325 children under 15 years of age who were vaccinated with BCG. A total of 8,841 adults were X-rayed and 52 cases of tuberculosis were diagnosed (35 new and 17 old cases), all of which were placed under treatment.

The second tuberculin-X-ray survey made in the province of Chiriquí showed a decrease in X-ray positivity from 2% in 1961 to 0.5% in 1965, as well as a high percentage of the incipient forms of the disease.

All tuberculosis institutions reported that a large percentage of the cases diagnosed during the year had been incipient cases, which makes a swifter recovery possible.

UNICEF

PANAMÁ-0500 (-13), Leprosy Control

Objective: To study the problem of leprosy in the country; and to organize, conduct, and evaluate a national leprosy control program based on modern methods and procedures.

Probable duration: 1961-1967.

Assistance provided: Advisory services by the Country Representative.

Work done: From 1 July 1964 to 30 June 1965, 14 new cases of leprosy were detected, all under 15 years of age; 7 were males; 4 were lepromatous; 7 tuberculoid, and 3 other clinical forms of the disease.

Of the total of 184 patients registered at mid-1965, 121 were male and 180 were over 15 years of age; 66 were lepromatous, 88 tuberculoid, 3 indeterminate, and 27 had other clinical forms; 155 were under treatment: 102 in hospitals and 53 at outpatient departments. The total number of registered contacts was 538, of which 483 were under control.

UNICEF

PANAMÁ-2200 (-9), Water Supplies

Objective: To organize a national water supply and sewerage authority; and to develop a national water supply program.

Probable duration: 1960-

Assistance provided: Advisory services by the sanitary engineer assigned to project Panamá-3100 and by Zone III Office personnel.

Work done: A public relations and community development promotion campaign was carried out in rural localities, aimed mainly at preparing the population for

the development of the water supply plan. A program of waterworks for urban localities was begun, as was a personnel training program.

PANAMÁ-3100 (-1), National Health Services

Objective: To prepare and put into practice a national health plan; to train the professional and auxiliary personnel needed; and to reorganize, improve, and extend health services coverage as stipulated in the national health plan.

Probable duration: 1952-1970.

Assistance provided: 1 medical adviser, 1 sanitary engineer and 1 short-term consultant; equipment and supplies; and the following fellowships:

Awards	Field of study	Country of study	Months
5	Public health administration (administration of health programs)	Costa Rica	3
1	Sanitary engineering	Guatemala, Venezuela	1

Work done: The Ministry of Public Health approved its first program budget (for 1966) and prepared administrative standards for hospital regulations.

The construction of the San Félix Health Center and of an outpatient clinic at the National Psychiatric Hospital were completed; the building for the Cañaza Medical Center and the expansion and remodeling of those of Ocú and Colón were almost completed; the plans and specifications for remodeling the outpatient clinic at Santo Tomás Hospital were also completed.

The laboratory network continued to improve, and the number of tests performed increased by 50% over that of the previous year. *Manual de Técnicos de Laboratorio* (Handbook for Laboratory Technicians) was prepared and published.

The National Committee for Vital and Health Statistics met at the end of 1965, after several years of inactivity.

During the year, 44,750 persons were vaccinated against smallpox (45.4% of the established target), and 30,688 children were inoculated with DPT (37.9% of the target). Also 5,751 children were vaccinated against poliomyelitis (20% of the yearly goal).

The integration of services increased gradually in the Central Region of the country, particularly in the pilot area of Penonomé. The area has 77 health centers, as follows: 7 integrated health centers, 7 health centers with annexes, 8 health centers, and 55 subcenters. In the Eastern Region the Department of Health and the Social Security joined efforts to build and operate a hospital for the city of Colón. The Western Region, which has 5 health areas, was in the process of being organized.

VIII. PROJECT ACTIVITIES

During the first 10 months of the year, 200 wells were drilled and 1,558 wells were repaired. The privies built totaled 2,662.

In the meat inspections performed from January to September at the national slaughterhouse, cysticercosis was found in 1.55% of pigs. A new slaughterhouse was inaugurated in the city of David.

A 12-month course for laboratory technicians, with 9 students, and an 11-month course for nursing auxiliaries, with 32 students, both begun in 1964, were completed. The following courses were held during the year: a 10-month graduate course in midwifery, for 9 students; a 6-month sanitation inspector course, for 12 students; a 2-month food handling course, for 47 students; 2 courses for lay midwives, for a total of 29 students; 3 courses for nursing auxiliaries, with a total of 71 students; and 2 courses for laboratory technicians, with 32 students.

PAHO/R, WHO/UN-TA

UNICEF

PANAMÁ-3101 (-7), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Clinical and social pediatrics	Chile	3
3	Control of food and drugs	Canada	1¼
5	Environmental sanitation (rural water supplies)	Venezuela	½
1	Nursing education	United States of America	12
1	Ditto	United States of America	1½
1	Nursing services (psychiatric nursing)	Guatemala	5
1	Public health administration (epidemiology)	Chile	10
1	Social pediatrics	Brazil, Chile, Colombia	1¼

WHO/R

PANAMÁ-3102, Fellowships for Health Services

Awards	Field of study	Country of study	Months
2	Laboratory services	United States of America	3
1	Sanitary engineering	Guatemala	11

PAHO/R

PANAMÁ-3300, Laboratory Services

Objective: To strengthen laboratory services.

Probable duration: 1965-

Assistance provided: 1 short-term consultant; and laboratory reagents.

Work done: The National Laboratory of Public Health performed 90,000 examinations; each of the 2 regional laboratories made 60,000 tests; and the 11 laboratories of the area reached an average of 2,000 tests.

The National Laboratory published and distributed the volumes *Manual de Técnicas y Métodos* (3rd ed., 1965) and *Manual de Técnicas y Métodos para Análisis Bioquímicos* (1963).

PAHO/R

PANAMÁ-4200 (-11), Nutrition

Objective: To conduct an expanded nutrition program in a selected area of the country.

Probable duration: 1962-1966.

Assistance provided: Advisory services by INCAP personnel; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Biochemistry of food	Guatemala	6
2	Public health nutrition	Ditto	2½

Work done: The equipment and supplies furnished by UNICEF made it possible to carry on the planned activities in 41 school gardens as well as to begin the poultry program in the village of Divisa, where the fowl breeding center is operating.

As the applied nutrition program entered its third year, the public health and agricultural personnel working in the 6 selected medical health areas received reorientation in supervision and management.

INCAP personnel conducted a nutrition education course for 27 home educators of the Agricultural Extension Service.

PAHO/R

FAO, UNICEF

PANAMÁ-6200, Medical Education

Objective: To strengthen medical education by improving the training of teachers of basic sciences.

Probable duration: 1965-

Assistance provided: Advisory services by a short-term consultant assigned to project AMRO-6203.

Work done: Discussions with the pertinent faculty members of the School of Medicine of the National University were held regarding the teaching program in anatomy, in preparation for the First Seminar on the Teaching of Anatomy in Central America, held in San Salvador, El Salvador, from 10 to 13 October.

PANAMÁ-6400, Sanitary Engineering

Objective: To organize and hold specific short courses on subjects relating to water supply programs.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and teaching services by personnel of Zone III and by 5 of the consultants assigned to project AMRO-6403.

Work done: A course on basic financial criteria for planning water supply systems was held from 22 September to 5 October for 14 students, most of them from the National Institute of Water Supply and Sewerage and the Ministry of Labor, Social Welfare and Public Health.

PAHO/R**PARAGUAY-0100, Communicable Diseases**

Objective: To incorporate the control of communicable diseases into the regular activities of the services of the Ministry of Public Health and Social Welfare, and to that end to develop a local plan of action adapted to the nature and magnitude of the problem in order to decrease the risks of infection, disease, incapacity, and death from these diseases.

Probable duration: 1965-1967.

Assistance provided: Advisory services by personnel of projects Paraguay-3100 and AMRO-0506, and of Zone VI; and two 3-month fellowships for the study in Venezuela of the prevention of incapacitating leprosy lesions and the rehabilitation of patients so incapacitated.

Work done: A coordinating committee for the communicable disease control program was established in order to promote working relations and standardization of methods and systems of the prevention and control of the most frequent communicable diseases in the country. In addition to staff from the Ministry of Public Health, the committee was composed of representatives of the Social Security Institute, Army Medical Corps, Police Surgeons, and National University.

The technical staff prepared the programs and organized the activities for developing a Plan of Control of Communicable Diseases in the Capital and in Health Area I and revised the system of communicable disease reporting and recording.

The poliomyelitis vaccine campaign was completed in most localities of the country; 200,000 doses were given to children under 6 years of age, so that a high percentage of the planned trivalent vaccination target was fulfilled. The Wellcome Research Laboratories donated 1,500,600 doses of Sabin vaccine. An influenza vaccination program was also carried out.

An outbreak of smallpox gave rise to a smallpox vaccination program with the goal of immunizing 80% of the population. The Governments of Argentina, Brazil, and Uruguay immediately sent 1,500,600 doses of vaccine. Up to 9 November 814,694 persons, or 40.8% of the population, had been vaccinated.

From January to October 94 new leprosy cases were detected; of these, 47 were lepromatous, 31 tuberculoid, 12 indeterminate, and 4 unclassified. Of the 3,862 leprosy patients registered, 2,722 were under control. The number of lepromatous cases was 1,901; tuberculoid, 1,903; indeterminate, 808; and 60 other clinical forms. As for treatment, 272 patients remained in the Sta. Isabel leprosarium, 2,450 were undergoing ambulatory treatment, and of the other 1,140 it was not known whether they were following any treatment.

Two training courses were completed: one for nursing auxiliaries, attended by 20 students, and the other for statistical personnel, attended by 14 students.

UNICEF**PARAGUAY-0200 (-1), Malaria Eradication**

Objective: To eradicate malaria.

Probable duration: 1961-1973, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 sanitation inspector and advisory services by Headquarters technical personnel; equipment and supplies; and 1 fellowship for 5½ months to study malaria eradication in El Salvador, México, and Venezuela.

Work done: Emergency spraying of houses was carried out as a safety measure in connection with the 1964 outbreak in Caaguazú and to fight outbreaks that occurred in 1965. The main activity during the year was an expansion of geographical reconnaissance in preparation for the initiation of the attack phase, planned for the third quarter of 1966.

From January through June, 5,631 houses were sprayed with dieldrin in some localities of the Caaguazú and Alto Paraná departments, where an increased incidence of malaria had been registered.

From January to November, 77,933 blood smears were examined and 6,189 (7.9%) of them were positive.

In an effort to obtain a long-term loan that would complement financing the malaria eradication campaign to its end, the Government prepared a plan of operation for study and consideration by international agencies.

PAHO/SMF**UNICEF**

PARAGUAY-0500 (-9), Leprosy Control

See Paraguay-0100, Communicable Diseases.

PARAGUAY-2200 (-19), Water Supplies

Objective: To plan and carry out a national water supply program.

Probable duration: 1961-1966.

Assistance provided: Advisory services by the engineering staff of Zone VI Office.

Work done: The National Autonomous Service of Sanitary Works (SANOS) and the Inter-American Development Bank concluded an agreement whereby the Bank will provide SANOS with the nonreimbursable amount of \$65,000 for preparing comprehensive engineering and financial feasibility studies on building water supply systems for 5 localities; for reviewing the technical studies and designs already made by SANOS for the purpose of providing water to 2 communities; and for revising the administrative organization of SANOS. The 7 localities included in this study have an aggregate population of 90,305.

PARAGUAY-3100 (-10), Health Services

Objective: To plan a ten-year health program as an integral part of the national plan for economic and social development of the country; to develop integrated health services throughout the country; and to train professional and auxiliary personnel.

Probable duration: 1955-1970.

Assistance provided: 1 medical adviser, 1 sanitary engineer, 1 public health nurse, 1 nurse-midwife, and 1 statistician; equipment and supplies; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Public health administration (international health)	Argentina, Venezuela	1
2	Tuberculosis control	Argentina	2

Work done: The Planning Unit had to readjust the 1965 programs to the funds actually allocated, which were less than originally planned.

A new plan was drawn up to expand the food and nutrition education program to 60 localities within the next 2 years. To decentralize the program, 6 areas were established, each of which will have an average of 17 projects under the supervision of 1 agronomist and 1 home improver. A nutrition survey was made of the civilian and military population, and a preliminary re-

port on the survey was presented to the National Nutrition Council for consideration.

Between January and June, only 91,874 persons were vaccinated against smallpox (the target for the year being 335,330) but, because of an outbreak of smallpox in Asunción, by the end of October vaccinations had risen to 814,694. As to leprosy, 2,822 patients were under control, and a rehabilitation community for such patients was being considered. As part of the tuberculosis control program, 3,050 BCG vaccinations were performed in the first 6 months of 1965 in the 5 health areas of the country (target for the year was 145,984); 1,486 patients were under control and 742 contacts were examined. In the under-14 age group 10,123 doses of DPT were applied.

During the same period, there were 32,101 consultations of pregnant women (30% of the year's target), 27,781 consultations of infants under 1 year of age, 37,856 of preschool age, and 19,587 of school-age. The nursing personnel made 35,204 home visits (71.3% of the target) and 180,918 interviews in clinics, outnumbering the established target by 8.5%.

The National Autonomous Service of Sanitary Works formulated a Ten-Year Water Supply Program, to serve a population of 1,053,400, and to carry it out an agreement was concluded with the Inter-American Development Bank. During the year, 22 deep wells of the 34 planned were drilled. The privies built totaled 1,357 (51.2% of the target for the year).

The Nursing School of the Andrés Barbero Institute had 40 first-year, 25 second-year, and 19 third-year students. In addition, 2 courses were conducted for nursing auxiliaries, with a total of 63 students; 1 course in vital and health statistics, with 17 students; a 2-week course on principles of statistics, for 10 government officials; and a course in midwifery for nurses began with 10 students.

PAHO/R, WHO/UN-TA**UNICEF****PARAGUAY-3101 (-12), Fellowships for Health Services**

Awards	Field of study	Country of study	Months
1	Sanitary engineering	Argentina	½
1	Ditto	Colombia	½
1	Tuberculosis	Brazil	¾
1	Veneral diseases	Chile	1
1	Water services	Perú	½

WHO/R

PARAGUAY-3102 (-13), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Drug control	Brazil	12
1	Organization of medical education (microbiology)	Ditto	3
1	Public health administration	Ditto	11
1	Ditto	México	10½
1	Ditto (health education)	Puerto Rico	11½
1	Ditto (health planning)	Chile	3½
1	Ditto (veterinary public health)	Brazil	11
1	Sanitary engineering (water supplies)	Argentina	½
1	Ditto	México	½
2	Tuberculosis (laboratory techniques)	Argentina	2

PAHO/R**PARAGUAY-4200 (-18), Nutrition**

Objective: To develop an expanded nutrition program in a selected area of the country, including education and training activities, promotion of the production of highly nutritious foods, and improvement of the nutritional status of pregnant women, nursing mothers, preschool and school children.

Probable duration: 1960-1966.

Assistance provided: Advice by the technical staff of Headquarters and of Zone VI; and a 2½-month fellowship to study nutrition, in Guatemala.

Work done: Special emphasis was placed on the decentralization of the program, for which 6 zones were delimited, each with some 17 projects under the supervision of 1 agricultural engineer and 1 home improver.

Under the auspices of the National Nutrition Council, experts of the U.S. Interdepartmental Committee on Nutrition for National Development began a nutrition survey in cooperation with personnel of the National Food and Education Program (PAEN) of Paraguay. The survey included 720 families consisting of 38,843 persons, and 693 soldiers in 14 of the 16 departments of the country.

There were 140 school gardens (100% of the established goal) and 840 family gardens (50% of the goal) in operation; 240 chicken coops were installed in homes (14% of the planned total); and 80% of the families participating in the program had their own fruit gardens. In addition, some 118 school clubs and 131 community committees were organized.

The Plan of Operations was modified with the intent of extending the nutrition program to other areas which include 60 localities with approximately 30,000 school-children.

Three courses on agricultural subjects were conducted: 1 for 36 rural leaders in San José de los Arroyos; another for 39 such leaders in Itacurubí del Rosario; and a refresher course for 24 PAEN supervisors.

PAHO/R**FAO, UNICEF****PARAGUAY-6200 (-21), Medical Education**

Objective: To strengthen medical education by means of promoting teaching programs in preventive and social medicine at the undergraduate and postgraduate (rural internship) levels; and to improve the pedagogical approach to the teaching of medicine.

Probable duration: 1964-

Assistance provided: 1 short-term consultant; and one 1½-month fellowship to study organization of medical education, in Argentina.

Work done: The problems concerning the teaching of preventive and social medicine were reviewed and discussed with the pertinent authorities of the School of Medicine of the National University of Asunción, and recommendations were formulated.

PAHO/R**PARAGUAY-6300 (-20), Education in Nursing and Midwifery**

Objective: To collaborate in the training of nurses and midwives at the Dr. Andrés Barbero Institute.

Probable duration: 1964-1969.

Assistance provided: Consultant services by the nurse advisers assigned to projects Paraguay-3100 and AMRO-3206.

Work done: The School of Nursing of the Dr. Andrés Barbero Institute extended its course to 4 years, and the Institute was attached to the National University of Asunción. In connection with the latter, a further development was the initiation of a program to facilitate the obtention of the bachelor of science degree in nursing by former graduates of the school who meet certain requirements and take an additional year of study.

UNICEF granted 25 scholarships to students in the basic course, in addition to 20 for the postbasic course of 4 months in administration of nursing services, organized by the same school.

The School of Nursing also had consultant services, under an AID contract, from the University of Buffalo, New York.

UNICEF

PERÚ-0200 (-5), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1957-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 malariologist, 1 sanitary engineer, 4 sanitation inspectors, and advisory services by Zone IV and Headquarters personnel; antimalarial drugs, and a limited amount of imported supplies and equipment; and 1 fellowship for 2½ months to study malaria eradication in Brazil.

Work done: The outbreak that took place in 1964 in consolidation-phase and maintenance-phase areas in the department of Madre de Dios was completely controlled, and no malaria case was found there during 1965. Considering all of Perú, although there was no increase in the number of areas respectively in consolidation or maintenance phase over the 1964 figures, by the end of 1965 there were 14 provinces in the Coast ready to be set in maintenance phase. The new full-time director of the National Malaria Eradication Service was making the necessary arrangements with the General Directorate of Health for the latter to take over the epidemiological vigilance of this area.

Severe malaria outbreaks were registered in the northern coastal and mountain regions and 728 malaria cases in 20 foci had been located up to September. Entomological studies in selected areas with persistent transmission were carried out according to a plan initiated in February.

House sprayings performed amounted to 241,441, covering 97.6% of the sprayings projected. Of 452,097 blood smears examined, 1,877 (0.42%) were positive—367 were from areas in consolidation phase and 267 of these were classified as: 209 autochthonous, 6 from areas in attack phase, 1 imported, 1 induced, and 50 relapses. From areas in maintenance phase, 2 cases were recorded and classified as induced.

PAHO/SMF

AID, UNICEF

PERÚ-0401 (-29), Tuberculosis Control (Tacna)

Objective: To establish in the Tacna health area a demonstration area for the application and evaluation of practical methods of tuberculosis control and for training medical and auxiliary personnel, in order to extend the program gradually to other areas of the country.

Probable duration: 1961-1966.

Assistance provided: Advisory services by the adviser of project AMRO-0404.

Work done: The organization of the program was revised. Work was also done on a revision of the technical standards and in the preparation of standard forms for data recording. Work done up to July was as follows: 6,153 tuberculin tests, 787 BCG vaccinations, and 9,491 photofluorographies; 440 cases were detected.

UNICEF

PERÚ-0402 (-29A), Tuberculosis Control (Junín)

Objective: To develop a tuberculosis control program in the province of Huancayo, department of Junín, which will include the training of professional and auxiliary personnel.

Probable duration: 1964-1966.

Assistance provided: Two 1-month fellowships for the study of tuberculosis (laboratory methods), in Venezuela; and supplies and equipment.

Work done: A complete review was made of the diagnoses of tuberculosis cases, the method having been adjusted to the standards established for this project. A program for the training of personnel in work methods was also carried out.

PAHO/R

PERÚ-2200 (-30), Water Supplies

Objective: To plan, organize, and develop a national program for the construction or extension of water supply and sewerage services, including their administration and operation.

Probable duration: 1960-

Assistance provided: 1 sanitary engineer, 1 short-term consultant, and advisory services by personnel of Zone IV Office.

Work done: 2 requests for loans to finance the first 2 stages of the National Plan of Sanitary Works were prepared and submitted to the Inter-American Development Bank. IADB approved one of the requests for \$8.1 million and was studying the second request.

The Subdirectorate of Sanitary Works of the Ministry of Promotion and Public Works completed the definitive water supply and sewerage projects for the cities of Chimbote, Cuzco, Ica, and Piura. Private firms were preparing projects for Ayacucho, Chiclayo, Huancayo, Iquitos, Tacna, and Trujillo. Standards for the design of public water supply systems were prepared and were being studied by a committee, as a prior stage to their pro-

mulgation by the Subdirectorate of Sanitary Works. A start was made on the design of water supply systems for communities with from 2,000 to 30,000 inhabitants. The Sanitation Corporation of Lima and that of Arequipa initiated studies, the one on industrial wastes, and the other on the water rates in force.

Congress approved a draft law for establishing the National Institute of Sanitary Works, although some details regarding the composition of its Board were pending.

PAHO/R, WHO/UN-TA

IADB

PERÚ-2201, Rural Water Supplies

Objective: To develop a national rural water supply program.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and advisory services by Headquarters and Zone IV personnel.

Work done: A study of the organization and administration of the rural water supply program was carried out. The program includes the construction of 150 water supply systems in as many rural localities along the coastal and highland areas of Perú.

PAHO/G: IADB

PERÚ-3100 (-22), National Health Services

Objective: To improve health services at the national, regional, and local levels; and to organize health areas, beginning with the Junín Health Area.

Probable duration: 1956-1967.

Assistance provided: 1 medical adviser, 1 sanitary engineer, and 1 public health nurse; and 2 short-term consultants.

Work done: The collection of basic data for preparing a national health plan was begun in May and the program retained the same goals that were established in 1964.

During the year, the following activities were carried out in the Junín Health Area: 12 health posts were established to benefit 33,192 persons, 63.5% of the 52,253 persons expected to be benefited through 17 new posts. A pediatric service was put into operation in Jauja which, together with the obstetrical service inaugurated the previous year, represents two important stages in the transformation of the former Olavegoya Tuberculosis Sanatorium into a Hospital-Health Center. The Lourdes Hospital of the Jauja welfare service was transferred to the hospital-health center of the area, and the services could therefore be integrated.

Seven small waterworks and 41 wells were built to benefit a population of 6,294 (58.3% of the total planned) and, in accordance with the National Water Supply Plan, 32 other systems were built to serve 28,800 persons (0.53% of the rural population, and 34.8% of the annual goal). The privies built totaled 270, benefiting 1,350 persons (48% of the year's target).

During the first 8 months of the year, the cared for pregnant women (2,218 consultations) represented 10.58% of the pregnant women in the Junín Health Area, and 67.3% of the goal for the year. There was an average of 1.77 consultations per pregnant woman. During the same period, the number of consultations for infants under 1 year of age was 6,083 (40.88% of the accessible population in that age group and 87.8% of the annual target); the average was 1.96 consultations per child. In the first 8 months also, there were 4,228 consultations for preschool-age children (53% of the target set for the year and 6.57% of the accessible population in that age group), the average being 2.76 consultations per child. There were also 1,366 school-age child consultations (35.9% of the annual target, and only 1.4% of registered schoolchildren); the average was 1.16 consultations per schoolchild.

The Ministry of Public Health and Social Welfare had a total of 675 available beds (58.2% of the total in the area), or 1.76 beds per 1,000 of the accessible population. There were 5,910 hospital dismissals, with an occupancy rate of 60%, and an average stay of 16.6 days. Consultations during the year totaled 86,338, or 3.38 consultations per available physician/hour.

During the first 8 months of the year, 21,882 persons were vaccinated against smallpox (5.44% of the total population of the area and 61.5% of the annual target); 3,617 children received complete doses of DPT (4% of the population to be vaccinated and 60.7% of the target established for the year). During the same period also, 4,685 persons were vaccinated with BCG and 13,875 were inoculated against yellow fever (99.1% of the annual target).

As part of the rabies program 12,066 dogs were destroyed in 8 months (94.2% of the target for the year and 56.5% of the estimated stray dogs), but no canine vaccine was available.

Area personnel was trained through the following courses: a 6-month course for nursing auxiliaries, with 26 students; a 3½-month course for health auxiliaries, with 11 students; and a 1-month course for 33 nursing auxiliaries. Inservice training was given to 10 nursing supervisors and 15 general nurses.

PAHO/R, WHO/UN-TA

UNICEF

VIII. PROJECT ACTIVITIES

PERÚ-3101 (-21), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Application of electronic computers	Colombia	½
1	Clinical and social pediatrics	Chile	3
1	Food control	Brazil	6
1	Health services	Argentina, Brazil, Venezuela	1
1	Laboratory techniques (immunofluorescent techniques)	Sweden, United Kingdom	½
1	Medical records librarianship	Venezuela	10½
1	Organization of medical care	México	½
1	Organization of medical education (public health)	Chile	10
1	Public health administration	Puerto Rico	11½
2	Social pediatrics	Guatemala	1
1	Veterinary public health	Brazil	11

WHO/R

PERÚ-3103 (-25), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Dental public health	Brazil	2½
1	Industrial hygiene	Chile, United States of America	10
1	Nutrition (chemical analysis)	México	1
1	Organization of dental schools	Colombia, Costa Rica, Puerto Rico, Venezuela	1½
1	Organization of medical education	Chile	7
3	Public health administration	Ditto	3½
1	Ditto (education)	Puerto Rico	11½
1	Rehabilitation	Ditto	10½
1	Sanitary engineering	Argentina	1

PAHO/R

PERÚ-3104, National Institutes of Health

Objective: To expand the activities of the National Institutes of Health.

Probable duration: 1965-

Assistance provided: 1 short-term consultant.

Work done: A new program and new work plans were prepared for the National Institutes of Health, which in-

cluded nutrition, biological control, virology, and pathology-laboratory services. The quality of biological products was improved and production was increased, especially as regards rabies, lyophilized smallpox, and DPT vaccines.

PAHO/R

IADB

PERÚ-4101 (-32), Infantile Diarrhea and Malnutrition

Objective: To study the nature of the water metabolism and electrolyte changes in children suffering from diarrhea and malnutrition and to determine the best therapy for such children.

Duration: 1960-1965.

Assistance provided: Management of administrative and financial aspects of the grant.

Work done: During the course of the project a number of important research findings were uncovered and several articles were published in professional journals by the research group. Findings to terminal date of PAHO support were summarized in "La diarrea y la malnutrición infantil," an article published in the January 1966 issue of the *Boletín de la Oficina Sanitaria Panamericana*.

PAHO/R, PAHO/G: USPHS-NIH

PERÚ-4200, Nutrition

Objective: To achieve the gradual improvement of the nutrition status of the population in the departments of Junín, Pasco, and Puno—one of several coordinated efforts to raise the health level of the country.

Probable duration: 1965-1967.

Assistance provided: Consultant services by the adviser of project AMRO-4204.

Work done: A nutrition program was prepared as part of the health plan for the Health Area of the Junín department.

Poultry farms were begun in the department of Puno. The tabulation and processing of data collected in the clinical nutrition survey conducted in Camicachi, Chucuito, and Taraco was completed.

In Puno department, a course was designed for school teachers and another for nursing auxiliaries.

FAO, ILO, UNICEF

PERÚ-6100 (-33), Training of Health Personnel

Objective: To establish a School of Public Health in order to ensure adequate preparation of professional, technical, and auxiliary personnel for institutions that provide health services to the population.

Probable duration: 1963-1966.

Assistance provided: 2 short-term consultants and advisory services by the Zone IV nurse and the nurse educators assigned to project Perú-6300.

Work done: According to the national plan of personnel training, which is part of the National Health Plan, the School of Public Health completed the following courses in 1965: on public health orientation for heads of medical posts (rural internship), for 19 students; for health statistics technicians, with 19 students; for statistics auxiliaries (Arequipa) with 27 students; for sanitation inspectors (Puno), with 16 students; and for nursing auxiliaries (Cuzco, Huancayo, Lima, Puno, and Trujillo), with 176 students.

The following courses, to be completed in 1966, were begun: on public health (for physicians), with 23 students; on public health education, with 14 students; on public health nursing, with 13 students; on administration and supervision of hospital nursing services, with 17 students; and on nursing education, with 12 students.

PAHO/R

UNICEF

PERÚ-6200 (-31), Medical Education

Objective: To strengthen medical education through adequate planning of teaching and research activities, improved training of medical school teachers and researchers, and a better pedagogical approach to the teaching of medicine.

Probable duration: 1964.

Assistance provided: 1 temporary adviser and consultant services by Headquarters personnel; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Medical pedagogy (laboratory in human relations)	Chile	½
2	Organization of medical education	Ditto	12

Work done: Assistance was provided for the organization of the Second Meeting of the Peruvian Association of Medical Schools, and plans for a seminar on medical pedagogy were discussed with officials of the Association.

Discussions were held with faculty members of the 2

schools of medicine in Lima regarding the possibilities of their participating in the PAHO faculty training program on microbiology in Rio de Janeiro, Brazil.

PAHO/R

PERÚ-6300 (-15), Nursing Education

Objective: To improve basic nursing education in hospital schools; and to collaborate in the organization of schools of nursing within the existing universities.

Probable duration: 1959-1968.

Assistance provided: 2 nurse educators, 1 short-term consultant, and consultant services by the nurse adviser assigned to project AMRO-3204.

Work done: The program includes basic nursing education under the control of hospitals and universities and a postbasic course for the preparation of nurse instructors.

Consultation to 10 hospital schools of nursing was given through participation on the Permanent Committee for the Control of Schools of Nursing organized in the Ministry of Public Health and Social Welfare. Advice was provided in inservice education programs in several of the schools, and a 23-hour program on preparation of objective tests was conducted for 18 nurse instructors from the 10 schools. A revision of minimum standards for nonuniversity schools of nursing was also undertaken.

Four university schools of nursing are included in the project: the University of San Marcos in Lima, the University of Trujillo, and the universities of Santa Maria and San Agustín in Arequipa. All these schools were studied to ascertain their stage of development and needs and to make plans for participation of their instructors in a postbasic course to prepare them for teaching at university level.

Administrative procedures were planned for a postbasic program to be carried out at the University of San Marcos for the instructors of all participating university schools. Thirteen nurses enrolled in the program. According to the plans, the professional subjects to be given in the summer sessions were to be taught by PAHO/WHO nurse advisers. During 2 academic years the nurses take up humanities and sciences in the universities in the cities in which they are located, and in 2 summer sessions they study the nursing content at the University of San Marcos in Lima. Upon satisfactory completion of the program the nurses will be granted the equivalent of a bachelor of science degree.

PAHO/R, WHO/R

VIII. PROJECT ACTIVITIES

PERÚ-6400 (-18), Sanitary Engineering Education

Objective: To revise the curriculum of the School of Sanitary Engineering of the National University of Engineering; and to organize courses on subjects bearing on water supply and sewerage.

Probable duration: 1964-1967.

Assistance provided: 2 short-term consultants and services by the engineering personnel of other projects in Zone IV; grants; and a 2½-month fellowship to study environmental sanitation (water supply systems administration), in Colombia.

Work done: An intensive course on hospital equipment maintenance and basic sanitation in hospitals was held at the School of Sanitary Engineering of the National Engineering University from 13 September to 23 October, for 20 local and 5 foreign professionals, as follows: 9 mechanical engineers, 5 civil engineers, 4 sanitary engineers, 3 architects, and 4 maintenance mechanics. Another intensive course was held at the same school from 8 to 20 November, on organization, administration, and operation of water supply services, for 14 engineers of the Ministry of Public Health and Social Welfare and of the Subdirectorate of Sanitary Works of the Ministry of Public Works.

WHO/R

PERÚ-6500 (-28), Veterinary Medicine Education

Objective: To strengthen the School of Veterinary Medicine at the University of San Marcos, especially as to the teaching of public health and preventive medicine.

Probable duration: 1965-1969.

Assistance provided: 1 short-term consultant; teaching material and technical publications; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Veterinary public health	Brazil	11
1	Ditto (parasitology)	United States of America	12

Work done: Cooperation was given to the School of Veterinary Medicine in organizing a department of public health and preventive medicine, as well as in preparing a draft project for establishing a zoonoses institute at the school. The consultant gave a series of technical lectures on epidemiology for teachers of the school and for officers of veterinary services of the Ministries of Public Health and of Agriculture. In cooperation with the Pan American Zoonoses Center, diagnostic antigens

and other biological materials were provided to the Department of Virology and the Department of Microbiology.

WHO/R

SURINAM-0200 (-1), Malaria Eradication

Objective: To eradicate malaria.

Probable duration: 1957-1971, year in which the consolidation phase is expected to be completed.

Assistance provided: 1 medical officer (who functioned as acting director of the program), 1 health educator, 1 entomologist, 1 specialist in malaria, 2 sanitation inspectors, and advisory services by the Zone I malaria team (AMRO-0201); antimalarial drugs; and a limited quantity of imported supplies and equipment.

Work done: The collection of blood smears in the coastal area, which continued in consolidation phase, was systematized. In the whole country, 47,744 blood smears were collected and examined and 4,311 (9.03%) cases were found. Of the smears collected and examined, 20,366 were from consolidation-phase and Paramaribo areas and showed up 74 (0.36%) cases.

The problem of refusal of spraying by the population of the interior continued and was attacked by implementation of the system of hiring local inhabitants to perform the spraying operation. The system improved coverage but did not entirely eliminate the problem of refusals. The 12th cycle (January-June) included spraying of 12,782 houses and during the 13th cycle 11,550 were sprayed.

Intensive activities in health education were being developed in an effort to solve refusal problems. A Malaria Eradication Exhibit was being shown in the difficult areas and by year's end had given evidence of being a potentially useful tool in overcoming bush-population refusals to surveillance spraying operations.

Four evaluators of the Malaria Eradication Service were assigned to assist in the distribution of medicated salt in hospitals and clinics. Along the Surinam River 2 missionary doctors distributed medicated salt provided by the Service, with good acceptance by the population concerned.

PAHO/SMF

UNICEF

SURINAM-2200 (-10), Water Supplies

Objective: To plan a rural water supply program for the country.

Probable duration: 1964-

Assistance provided: Advisory services by the Zone I Office technical staff; and a limited amount of supplies.

Work done: A preliminary document was drafted showing in detail the health aspects of the water supply program as an integral part of the general health program and following the views of UNICEF, which has expressed interest in contributing towards at least 13 water supply systems. The Ministry of Health appointed a committee with the purpose of collecting basic data in early 1966 to prepare a final document.

The geological service, in collaboration with the water supply section, prepared an application to the United Nations Special Fund requesting a short-term consultant to advise on the preparation of a formal request for a ground water resources survey of the coastal area.

PAHO/CWSF

SURINAM-2300 (-51), *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Probable duration: 1952-

Assistance provided: 1 sanitation inspector and advisory services by the medical adviser assigned to project AMRO-2301; and equipment and supplies.

Work done: Work continued concentrated in the capital, Paramaribo, with limited results. The city was inspected several times, but its infestation index remained high, ranging from 14% to 26%. The high index was due chiefly to the fact that in March the use of insecticide was suspended in view of the mosquito's high resistance to chlorinated insecticides; since then the campaign personnel, in their monthly house visits, limited their activities to general mosquito control measures.

The international airport of Surinam and the border localities of Albina and Nickerie, as well as 9 localities surrounding the capital, were also inspected. Except for the airport, where the last verification revealed 4 houses with *A. aegypti*, out of the 89 houses visited, all the other localities inspected had higher infestation indices.

WHO/UN-TA

SURINAM-3100 (-9), Health Services

Objective: To strengthen and integrate the health services and to extend them to the rural areas.

Probable duration: 1965-1968.

Assistance provided: Advisory services by personnel of Zone I Office.

Work done: For the purpose of extending medical care services a program was begun to provide 20 institutions

in rural areas with maternity sections. In addition, the program aims to add nurse-midwives in rural sectors, under supervision of the local physician.

SURINAM-3101 (-8), Fellowships for Health Services

One 4-month fellowship was awarded to study health statistics, in Jamaica.

PAHO/R

TRINIDAD AND TOBAGO-2200 (-10), Water Supplies

Objective: To create a central water and sewerage authority; and to prepare plans to improve the water and sewerage systems of Trinidad and Tobago, endeavoring for efficient operation and maintenance and eventually economic self-support.

Probable duration: 1963-1967.

Assistance provided: 2 short-term consultants and advisory services by Zone I personnel.

Work done: The legislature enacted into law a bill for the creation of a Water and Sewerage Authority, and the 7 members of the board were appointed. The direction of the Authority was placed under the sanitary engineer assigned to the project by PAHO, assisted by a national counterpart.

Office space, staff, equipment and supplies were provided by the Government and by the end of the year the Authority was in full operation.

WHO/R

TRINIDAD AND TOBAGO-3100, Health Services

Objective: To improve the administrative services in the Ministry of Health, particularly the fields of supply and management and the general services unit.

Probable duration: 1965-1966.

Assistance provided: 1 short-term consultant in administrative methods.

Work done: The administrative services were regrouped under the unified command of a Chief of Division and by the end of the year were in the process of redefining functions at the central, regional, and unit levels.

PAHO/R

VIII. PROJECT ACTIVITIES

**TRINIDAD AND TOBAGO-3103 (-14),
Fellowships for Health Services**

Awards	Field of study	Place of study	Months
1	Environmental sanitation	Puerto Rico	½
1	Health statistics	Canada, United States of America	2
1	Public health administration (organization of health services)	Puerto Rico, United States of America	1
1	Quarantine services	United States of America	2
1	Sanitary engineering	Ditto	12

PAHO/R

TRINIDAD AND TOBAGO-3200 (-12), Nursing Services

Objective: To strengthen and improve the nursing services in Trinidad and Tobago.

Probable duration: 1959-

Assistance provided: 1 nurse adviser (since August) and consultant services by the nurse adviser assigned to project AMRO-3201.

Work done: The Ministry of Health established methods of health service planning and initiated a quantitative and qualitative survey of nursing resources, the strengthening of nursing administration and supervision, and the improvement of basic nursing education.

The findings of the survey, which will be available in the early part of 1966, will be used as a basis for the planning and implementation of programs for the improvement of nursing. In relation to administration at the national level, job descriptions of nursing personnel were elaborated or modified in order to clarify responsibilities, authority, and relationships in conformity with the proposed organizational structure of the Ministry. Meetings were organized for nurse instructors to discuss the need to improve the methods and quality of teaching.

PAHO/R

TRINIDAD AND TOBAGO-4200 (-9), Nutrition

Objective: To develop a national nutrition program; and to train professional and auxiliary personnel in the field of nutrition.

Probable duration: 1961-1966.

Assistance provided: Advisory services by Headquarters personnel and by the adviser assigned to project AMRO-4201.

Work done: The Plan of Operations for the program was revised in alignment with the new organizational

structure of the Ministry of Health and Housing, and priorities and indices for evaluation of activities were defined accordingly.

Height and weight data collected from rural and urban populations were analyzed and standard height and weight curves were prepared.

A 3-week course in food and nutrition was conducted for 36 primary school teachers, and nutrition teaching was initiated in 36 schools in which small animal stock farm projects were also begun. The personnel of 10 health centers (public health nurses and inspectors) received intensive training in nutrition education.

The teaching of nutrition was initiated in a teacher-training college, and in public health nursing schools it was increased from 8 to 16 hours with 16 hours of demonstrations.

FAO, UNICEF

**TRINIDAD AND TOBAGO-4201 (-11),
Pathogenesis and Prevention of Anemias**

Objective: To study the pathogenesis and prevention of anemias in Trinidad and Tobago, in order to identify the major environmental (including nutritional) and hereditary factors and qualify their relative importance, for the purpose of studying practical measures to reduce the prevalence of the anemias.

Probable duration: 1963-1966.

Assistance provided: 1 scientist and consultant services by the adviser of project AMRO-4201.

Work done: The study in which infants, preschool and school children, and pregnant women and nursing mothers were examined for anemias was completed and, on the basis of the findings, iron therapy for pregnant and nursing mothers and other anemic individuals was initiated through health centers.

Several new methods were added to the national laboratory procedures for the investigation of nutritional anemias, and a study of the absorption of iron from 4 local foods was initiated.

PAHO/G: USPHS-NIH

TRINIDAD AND TOBAGO-4800, Hospital Administration and Medical Records

Objective: To organize departments of medical statistics records in the hospitals, clinics, and health centers of the Ministry of Health and Housing; and to train the appropriate personnel.

Probable duration: 1965-1966.

Assistance provided: 1 hospital-record adviser.

Work done: A study of conditions existing in the Medical Statistics Department of the General Hospital of Port-of-Spain, Trinidad, was made and submitted to the Advisory Committee of the Hospital. The Committee recommended the establishment of a hospital-record committee to undertake the reorganization of the Department, define its functions and responsibilities, develop a system of forms for recording histories, and plan the immediate training of Department personnel.

A similar study was carried out at Scarborough Health Center, where the Advisory Committee of Tobago proposed the same recommendations that were made for the General Hospital of Port-of-Spain.

WHO/UN-TA

TRINIDAD AND TOBAGO-6400, Sanitary Engineering Education

Objective: To develop sanitary engineering teaching, service, and research at the Faculty of Engineering of the University of the West Indies. A 1-year-diploma program of study will be developed, and laboratories for research and service functions will be installed.

Probable duration: 1966-1969.

Assistance provided: 1 short-term consultant.

Work done: A preliminary proposal for an education program was prepared for review and forwarded to the Government and the dean of the Faculty of Engineering.

Eighteen persons received training in two 1-week courses: 9 attended a course on training needs of water supply personnel and the others a course on technical and administrative water supply problems in the Eastern Caribbean.

PAHO/R

**UNITED STATES OF AMERICA-2300 (-13),
Aedes aegypti Eradication**

Objective: To eradicate *A. aegypti*.

Probable duration: 1964-

Assistance provided: Consultant services by the adviser assigned to project AMRO-2300.

Work done: Field operations continued in Florida and Texas and in the U.S. Virgin Islands and Puerto Rico, but were not begun in Alabama, Arkansas, Georgia, Louisiana, Mississippi, South Carolina, or Tennessee, considered to be wholly or partly infested.

**UNITED STATES OF AMERICA-3100 (-10),
Consultants in Specialized Fields of Public Health**

Objective: To obtain the services of short-term consultants for the study of special public health problems.

Probable duration: 1958-

Assistance provided: 3 short-term consultants.

Work done: Advice was provided on the development of the listeriosis program in the country; on the planning, organization and administration of virus programs; and on hospital-acquired infections.

WHO/R

**UNITED STATES OF AMERICA-3101 (-11),
Fellowships for Health Services**

Awards	Field of study	Country of study	Months
1	Environmental sanitation (disposal of farm wastes)	England, Federal Republic of Germany, Netherlands, Norway, Sweden	1½
2	Mental health	France, United Kingdom	2
1	Nutritional education	France, Italy, Switzerland, United Kingdom	2½
1	Organization of public health teaching (hospital environmental health)	Denmark, Finland, Norway, Sweden, United Kingdom	2½
1	Sanitary engineering (industrial hygiene)	Belgium, Federal Republic of Germany, Luxembourg, Netherlands, United Kingdom	¾

PAHO/R

UNITED STATES OF AMERICA-3102, Medical and Public Health Training

One 2-month fellowship to study training of medical personnel and public health services in India, Malaysia, Nepal, and Thailand.

PAHO/R

**UNITED STATES OF AMERICA-3103 (-200),
Fellowships for Health Services**

Awards	Field of study	Country of study	Months
1	Hospital and medical care administration	England, Sweden	2
1	Medical care administration	Denmark, Federal Republic of Germany, United Kingdom	2½

VIII. PROJECT ACTIVITIES

Awards	Field of study	Country of study	Months
1	Organization of medical education (maternal and child care)	Denmark, Iceland	2
1	Organization of public health teaching (health education)	India, Lebanon, Philippines, Thailand, Switzerland, United Arab Republic	2
1	Ditto (nursing)	Brazil, Chile, Colombia, Costa Rica	2
1	Ditto	Brazil, Ecuador, El Salvador, Panamá, Perú	2
1	Ditto (occupational health)	England, France, Italy, Luxembourg, Sweden, Switzerland	2
1	Public health administration (community health services)	Australia, Fiji, New Zealand	2
1	Ditto (geriatrics)	Denmark, Finland, Norway, Sweden, United Kingdom	1¾
1	Ditto (management)	Denmark, Finland, Federal Republic of Germany, Sweden, Switzerland, United Kingdom	1¾

WHO/R

URUGUAY-2200 (-18), Water Supplies

Objective: To plan and carry out national water supply programs.

Probable duration: 1960-

Assistance provided: Services by the engineering staff of the Zone VI Office and of other projects in Uruguay.

Work done: A draft of the technical assistance agreement between the State Sanitary Works Directorate and the Pan American Health Organization was prepared. By the end of the year the Government had obtained loans from international credit organizations amounting to over \$17 million, most of which will be for the water supply and sewerage systems of Montevideo.

URUGUAY-3100 (-5), National Health Services

Objective: To develop integrated health services in 5 departments, and subsequently to extend equal services to the whole country.

Probable duration: 1955-1970.

Assistance provided: 1 medical adviser, 1 adviser in hospital administration, 1 sanitary engineer, and 1 public health nurse; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Environmental sanitation	Colombia	2½
1	Nursing services (administration and supervision)	Chile	10

Work done: In the wake of a rabies epizootic that occurred in August in Montevideo and neighboring villages, with 220 cases and 2 deaths, 27,199 dogs were vaccinated and 4,419 were destroyed. A total of 4,906 persons were bitten, and of these 1,126 received treatment.

During the year, 8 wells were drilled.

The following undergraduate and graduate training was carried out in collaboration by the Ministry of Health, the School of Medicine, and PAHO: two 3-month courses in fundamentals of hospital administration, attended by 36 students; the Nursing School of the University held a course in nursing administration and supervision, with 20 students; 1 course for nursing auxiliaries, conducted at the Health School, with 92 students; and 20 students attended a 2-month course on inservice training for administrators, given for officials of the Ministry of Public Health and other institutions.

PAHO/R, WHO/UN-TA

UNICEF

URUGUAY-3101 (-8), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Maternal and child health	Chile, México, Panamá, Puerto Rico	2
1	Nutrition	Guatemala	2½
1	Pediatrics	Ditto	1
1	Public health administration	United States of America	12
1	Ditto (epidemiology)	Chile	10
1	Ditto (mental health)	Puerto Rico	11½
1	Sanitary engineering	Argentina	½
1	Ditto	United States of America	1
1	Virology	Brazil	6

WHO/R

URUGUAY-3102 (-10), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Nutrition	Guatemala	2½
1	Public health administration (administrative methods)	Chile	4
1	Ditto (health planning)	Ditto	3½
1	Radiology	Ditto	13
1	Tuberculosis (nursing)	Argentina	2

PAHO/R

URUGUAY-3500 (-14), Health Statistics

Objective: To improve the process of obtaining at the local level statistical data for the purpose of improving national health and vital statistics; and to train statistical personnel at the national and local levels.

Probable duration: 1965-1970.

Assistance provided: Consultant services by the adviser in statistics assigned to project AMRO-3506.

Work done: The agreement for this project was signed in July 1965. Lists of equipment and supplies were prepared and plans were underway to initiate the activities in 1966.

URUGUAY-6100 (-13), Training of Health Personnel

Objective: To strengthen the Dr. Carlos Nery School of Nursing; and to prepare the auxiliary personnel needed to carry out the health plans for the country.

Probable duration: 1960-1968.

Assistance provided: 1 short-term consultant and consultant services by the nurse adviser assigned to projects Uruguay-3100 and AMRO-3206; and equipment and supplies.

Work done: Improvements were gradually being introduced into the curriculum of the school, and its physical facilities were extended to include a science laboratory and a remodeled library.

For the training of auxiliaries, 6 new instructors were appointed, bringing the total to 15, and a program of inservice education was carried out.

A committee on the training of nursing auxiliaries, made up of teaching and service nursing personnel from the Ministry of Public Health and the University Hospital, gathered data on current courses and were in the process of drawing up recommendations for the country as a whole.

PAHO/R

UNICEF

URUGUAY-6200 (-24), Medical Education

Objective: To strengthen medical education by improving the pedagogical approach to the teaching of medicine.

Probable duration: 1964-1966.

Assistance provided: 1 short-term consultant and the following fellowships:

<i>Awards</i>	<i>Field of study</i>	<i>Country of study</i>	<i>Months</i>
1	Organization of medical education (pediatrics)	Brazil, Chile, Colombia, Guatemala, México, Venezuela	2
1	Ditto (pharmacy)	Chile	3

Work done: The current teaching program was reviewed and recommendations for strengthening the program were formulated. Plans were developed to organize a seminar on medical pedagogy.

PAHO/R

URUGUAY-6400, Sanitary Engineering Education

Objective: To improve the training of sanitary engineering in the regular engineering curriculum; and to develop a program of continuing education for professionals through intensive short courses.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and services by the engineering personnel of Zone Office VI and of other projects in the country.

Work done: An intensive short course on water supply operation and maintenance was organized and held at the School of Engineering and Land Surveying of the University of the Republic from 14 to 23 October, for 19 professionals.

PAHO/R

VENEZUELA-0400, Tuberculosis Control

Objective: With a view to their general use in the country, to test various procedures for the bacteriological diagnosis in tuberculosis that will make it possible to expand the coverage of the tested population; and to organize short training courses for national and international personnel.

Probable duration: 1965-1967.

Assistance provided: 1 short-term consultant.

Work done: Comparative studies were made of various procedures for the collection and preparation of laryngeal swab sputum samples and culture media, and an evaluation of the results was begun. A first course on mycobacteria, to be given from January to February 1966, was also prepared.

PAHO/R, WHO/R

VENEZUELA-0902, Diarrheal Diseases Study

Objective: To study the relative importance of bacterial and parasitic infections on diarrheal diseases in popula-

VIII. PROJECT ACTIVITIES

tion groups (all ages) residing in communities supplied with water as against groups residing in communities lacking water supply.

Duration: 1964-1965.

Assistance provided: Advisory services by the WHO Advisory Group on Diarrheal Diseases, composed of 1 chief epidemiologist, 1 bacteriologist, 1 parasitologist, and 1 sanitary engineer; also laboratory equipment and printed matter.

Work done: A 10-month horizontal study to determine the prevalence of diarrheal diseases was carried out in 3 rural communities: Pampanito, Monay, and Kilómetros 12, 14 and 17, in the state of Trujillo. An analysis of the data contained in the report submitted to the Government proved especially useful with regard to water supply and housing, in which the national authorities were particularly interested. The laboratory installed in Trujillo especially for this study continued to isolate and type pathogenic enterobacteria. The national staff will continue work on the program of determining the seasonal influence on diarrheal diseases.

VENEZUELA-2100, Environmental Sanitation

Objective: To make a study of garbage and refuse disposal systems and determine the one best suited to the topography, climate and other characteristics of Caracas.

Probable duration: 1964-

Assistance provided: Advisory services by Zone I Office staff; and 8 one-year fellowships to study sanitary engineering in the United States of America.

Work done: Arrangements were made for a meeting in New York City, N.Y., U.S.A., between the Governor of Caracas and the short-term consultant who in 1964 provided assistance in the design of incinerators for Caracas. The meeting was for the purpose of obtaining additional advice on the selection of firms to do the final design of the incinerators.

PAHO/R

VENEZUELA-2200 (-27), Community Water Supplies

Objective: To prepare long-range plans for urban water supply programs; to establish adequate water rates for financing the construction of new water supply systems and for expanding the existing ones; and to reorganize the management of the water supply service of Caracas.

Probable duration: 1960-1967.

Assistance provided: 5 short-term consultants to advise on organizational methods and accounting systems and advisory services by Zone I Office staff; and one 12-month fellowship to study sanitary engineering in the United States of America.

Work done: The National Institute of Sanitary Works (INOS) continued the expansion of the waterworks of the Caracas metropolitan area and throughout the rest of the country. At the end of the year, the total population served with water in the country was 5,888,269 of which 1,405,300 persons were in the metropolitan area of Caracas. Agreements with the various municipalities of the metropolitan area for the adoption of new water rates were underway. Improvements in the organization of INOS and the management of the Caracas water supply system were gradually being introduced in keeping with the recommendations of the short-term consultants. Negotiations with the International Bank for Reconstruction and Development for a loan to finance part of the cost of the long-range plan were in an advanced stage.

WHO/R

IADB

VENEZUELA-2201 (-35), Rural Water Supplies

Objective: To provide water to 35% of the rural population living in localities of less than 500 inhabitants in the region south of Lake Maracaibo.

Probable duration: 1962-1966.

Assistance provided: Advisory services by Zone I Office personnel.

Work done: 47 new water supply systems serving 11,851 persons in communities of less than 500 inhabitants were completed. For the 500-5,000 population communities 162 systems were completed, serving 113,237 inhabitants.

UNICEF

VENEZUELA-2300 (-16), *Aedes aegypti* Eradication

Objective: To eradicate *A. aegypti*.

Probable duration: 1958-

Assistance provided: 1 medical adviser and 2 sanitation inspectors.

Work done: 223 localities were inspected in initial survey, 348 were verified, and 134 were treated. Of the localities inspected in initial survey, 32 were found with *A. aegypti*, and of the verified localities, 128 were still positive; 657,616 houses were inspected and 147,004 were treated. From January to October, 15,675 vessels

in various Venezuelan ports were inspected and 2 vessels were found infested with *A. aegypti*. Administrative and technical difficulties which continued to hamper the progress and limit the results of the campaign included labor union problems which hindered the proper management of field personnel; insufficient budgetary funds for the correct coverage of infested areas in the country; importation of *A. aegypti* from other Venezuelan localities or from localities in the Caribbean Area which had been considered negative; and the almost country-wide resistance of the mosquito to chlorinated insecticides, which forces the campaign to use residual insecticides that are less effective and more expensive than either DDT or dieldrin.

PAHO/R

VENEZUELA-2400 (-38), Rural Housing

Objective: To plan rural housing programs that are adequate to protect health in agricultural areas, especially with regard to rural water supplies, in keeping with the Government's general plan of land reform and plans to build 45,800 rural houses in a 4-year period.

Probable duration: 1963-1966.

Assistance provided: 2 short-term consultants and advisory services by Headquarters and Zone I Office staff.

Work done: Up to 30 August, 6,509 houses had been completed, or 80% of the target figure for the year.

WHO/R

VENEZUELA-3100 (-24), Consultant Services in Health

Objective: To strengthen the organization of the Ministry of Health and Social Welfare on the basis of decentralization and regionalization.

Probable duration: 1964-1967.

Assistance provided: 1 short-term consultant and advisory services by Zone I Office staff.

Work done: A new Chief of the Planning Unit was appointed and technical staff was assigned to the Unit. The collection of basic data for the preparation of a national health plan was underway in 2 regions.

A training course in methodology of health planning was conducted for 30 health workers from regional services.

WHO/R

VENEZUELA-3101 (-9), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Insecticides	United States of America	2
1	Laboratory services (immunofluorescent techniques)	Ditto	3
1	Organization of maternal and child hygiene service	Ditto	½
1	Organization of medical education	Chile	½
4	Public Health administration	Ditto	3½
1	Sanitary engineering	United States of America	2

PAHO/R

VENEZUELA-3102 (-10), Fellowships for Health Services

Awards	Field of study	Country of study	Months
1	Epidemiology	United States of America	12
1	Food control (shell fish)	Ditto	½
1	Organization of public health teaching	Ditto	12½
2	Pediatrics	Guatemala	1
1	Rehabilitation	Brazil	4

WHO/R

VENEZUELA-3301 (-18), National Institute of Hygiene

Objective: To broaden the Institute's viral studies and increase its production of lyophilized vaccines.

Probable duration: 1964-1966.

Assistance provided: Advisory services by Headquarters personnel; laboratory reagents and printed material; and the following fellowships:

Awards	Field of study	Place of study	Months
2	Food control	Brazil	4
2	Laboratory services (administration of public health laboratories)	México, Puerto Rico	3

Work done: Following the establishment of the Committee on Study and Control of Venezuelan Encephalitis, research work on arbovirus infections was increased, and at the end of the year a study was being made to establish the immunological profile of 11 viruses of the A, B, C, California and Bunyanwera groups in a representative sample of 7,000 sera.

The Institute acted as a study center for enteroviruses,

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and every case of paralytic disease suspected of being of poliomyelitic origin was referred to the Institute. One year after the poliomyelitis immunization campaign, only 74 cases of the disease had been confirmed in the entire country.

PAHO/R

VENEZUELA-4200 (-44), Nutrition

Objective: To carry out a suitable nutrition program on a national scale; and to train personnel in this field.

Probable duration: 1965-

Assistance provided: 2 short-term consultants and advisory services through Headquarters and AMRO-4201 personnel.

Work done: The Ministry of Health and Social Welfare, the Institute of Nutrition, and the School of Public Health received technical advice with regard to the planning of systems of coordination and the determination of future needs for international assistance.

The Ministry of Health was also advised on the technical aspects of salt iodization as part of a national program for the prevention of endemic goiter.

PAHO/R

VENEZUELA-4300 (-2), Mental Health

Objective: To review and evaluate the mental health problem in the country; and to plan a national mental health program integrated with the national health plan and providing for care and rehabilitation of patients, training of personnel, research, and prevention of mental disorders.

Probable duration: 1964-1967.

Assistance provided: 1 nurse adviser (since May) and consultant services by the nurse adviser assigned to project AMRO-3201.

Work done: An evaluation was made of the mental health services provided in 4 institutions; and at the Centro de Salud Mental del Este a demonstration unit was set up, a nursing care plan was introduced, and work was begun on the preparation of a procedure manual.

The postbasic 1964-1965 course in psychiatric nursing was completed with 5 students, and a second course was started in October with an enrollment of 6 students. Three intensive courses in psychiatric nursing were conducted for auxiliary nursing personnel and volunteers. Length of the courses varied from 8 weeks to 3 months.

Plans were formulated to establish a continuous in-

service education program for mental health nursing auxiliary personnel.

WHO/UN-TA

VENEZUELA-4400, Dental Health

Objective: To formulate a national program of dental health services, bearing in mind the governmental, labor union, and university sectors.

Probable duration: 1965-1968.

Assistance provided: 3 special consultants and advisory services by the Regional Adviser; and the following fellowships:

Awards	Field of study	Country of study	Months
2	Dental health	Brazil	11
1	Public health dentistry	Ditto	2½

Work done: A plan was drawn up to study all aspects of dentistry in the country, including the situation of dental health from the social, anthropological, and economic viewpoints, the resources available, general practice of dentistry, and the status of dental training in the country. A review was made of the data available in the country's 3 schools of dentistry, the College of Dentists, and the Ministry of Public Health and Welfare. The population sample for the study in question was defined. The study will serve to formulate the national policy of dental health training and dental practice and for future studies of this kind in the remainder of the Hemisphere.

PAHO/R

VENEZUELA-4600 (-28), Industrial Hygiene

Objective: To strengthen the industrial hygiene and occupational health services of the Ministry of Health and Social Welfare.

Probable duration: 1962-

Assistance provided: Advisory services by the consultant in industrial hygiene assigned to project Chile-4601.

Work done: The laboratories were being improved with the installation of new instruments for the radiation protection service and other aspects of the work; more equipment had been ordered.

VENEZUELA-4801 (-37), Rehabilitation

Objective: To provide rehabilitation services to the incapacitated, through the creation of a national rehabili-

tation institute and of rehabilitation units attached to the hospitals and health centers of the country.

Probable duration: 1963-1967.

Assistance provided: 1 physiotherapist adviser and consultant services by the Regional Adviser in rehabilitation (AMRO-4807).

Work done: The School of Physiotherapy began to function at the Central University of Venezuela, in Caracas, and 17 students began on 1 June the 2-year university-level course in physical therapy. These students made their practical training in governmental, military, industrial, and private hospitals for adults and children.

The Government hired a Canadian physiotherapist for the Rísquez Hospital, in Caracas, to supervise the students' activities and to assist in their training.

The program of studies on physiotherapy for rehabilitation of leprosy patients was revised and the Ministry of Health and Social Welfare provided 10 fellowships for the first course, which was held during 1965.

WHO/R

VENEZUELA-6100 (-19), School of Public Health

Objective: To broaden the scope of the School of Public Health and improve its teaching.

Probable duration: 1961-1967.

Assistance provided: 1 health education adviser.

Work done: National advisory committees were established to improve the organization of the School of Public Health and to establish and organize a Department of Health Education as well as to incorporate the teaching of social sciences and health education in the various courses taught at the School.

Training in social sciences and health education was provided to 179 students registered in 11 courses at the School. A total of 450 hours was devoted to the subject, which was taught in the following courses: public health administration, postgraduate pediatrics; health inspection; advanced training in nursing; dietetics, and the course for staff of the National Nutrition Institute.

It was also possible to include the teaching of social sciences and health education in the curricula of several schools of medicine, dentistry, and dietetics.

WHO/R

VENEZUELA-6200 (-17), Medical Education

Objective: To strengthen medical education by improving the teaching of basic sciences and preventive and social medicine and the pedagogical approach to the teaching of medicine.

Probable duration: 1958-1966.

Assistance provided: 2 temporary advisers, 1 specialist in medical pedagogy, and advisory services by Headquarters and Zone I Office personnel; and one 2-month fellowship to study organization of medical education in Chile, Colombia, and Puerto Rico.

Work done: A course on medical pedagogy and human relations was held from 1 to 13 February for 26 professors and instructors of local medical schools and 2 from Uruguay. Various aspects of the teaching programs were reviewed with members of the faculties of the 2 schools of medicine in Caracas, and recommendations were made for improving the programs.

Twenty-eight Venezuelan medical school professors met from 20 to 22 May with 2 PAHO-provided advisers to discuss the teaching of preventive medicine.

The Venezuelan Association of Medical Schools was formally established on 21 May 1965.

PAHO/R

VENEZUELA-6300 (-14), Nursing Education

Objective: To establish at the School of Public Health advanced courses in nursing education and in administration of nursing services; and to assist in the creation of a university school of nursing.

Probable duration: 1959-1968.

Assistance provided: 1 nurse educator and 1 short-term consultant; and one 12-month fellowship to study nursing education (teaching of psychiatric nursing), in Puerto Rico.

Work done: A committee of national nurses, assisted by the short-term consultant, made a study of the schools of nursing in the country. A summary of the findings was sent to the director of each school, and a final report with comments and recommendations was under preparation at year's end.

A study was made of the possibility of organizing a school of nursing in the Central University of Venezuela. Several committees took up various aspects of the study, and a plan of action was drawn up.

PAHO/R, WHO/UN-TA

VENEZUELA-6400 (-42), Sanitary Engineering Education

Objective: To strengthen the teaching of sanitary engineering within the regular courses for civil engineers in 4 universities; to develop a postgraduate course at

VIII. PROJECT ACTIVITIES

the Central University of Venezuela; and to establish laboratories for research and teaching practices.

Probable duration: 1964-1968.

Assistance provided: 1 chief technical adviser (appointed in March), 1 laboratory planning and installation consultant (in April), and 1 short-term consultant; and the following fellowships:

Awards	Field of study	Country of study	Months
1	Environmental sanitation	Belgium, France	2
1	Public health laboratory	United States of America	4
1	Sanitary engineering	Ditto	12
1	Ditto (laboratory techniques)	Ditto	2

Work done: Office accommodations at the University City were provided for the chief technical adviser and consultants, and their national counterparts were appointed. Four instructors for the Central University and supporting personnel were also appointed.

The Central University provided most of the supplies for a sanitary engineering laboratory and an industrial hygiene laboratory. Four lists for additional laboratory equipment and supplies were prepared, and orders for books to supplement those currently available in the local libraries were under preparation.

Initial steps were taken to recruit engineering professors for the Universities of Los Andes (Mérida) and Zulia (Maracaibo), and a professor was appointed to the Andrés Bello Catholic University engineering faculty.

The Catholic University provided a newly constructed building for a laboratory. Laboratory buildings for Los Andes and Zulia Universities were designed and bidding for construction was underway.

The Central University, with the services of 2 PAHO/WHO consultants, held from 22 to 26 November a Seminar on Environmental Sanitation in Slum Areas; 43 persons participated.

WHO/UN-SF, WHO/Other

WEST INDIES-0200 (-17), Malaria Eradication

Objective: To eradicate malaria in Carriacou, Dominica, Grenada, and St. Lucia.

Duration: 1956-1965.

Assistance provided: 2 sanitation inspectors from 1958 to 1962 and 1 from 1962 to September 1964, and consultant services by the technical advisory group of project AMRO-0201; drugs, entomological supplies, 1 station wagon and 3 motorcycles; and fellowships for 5 laboratory technicians and 2 sanitation inspectors.

Work done: DDT house spraying according to the classic pattern was carried out in Carriacou and Grenada from February 1957 to February 1960, when malaria surveillance was instituted. No case of malaria was found since March 1959, despite careful search, and the eradication of malaria in Carriacou and Grenada was certified by PAHO/WHO in November 1962.

Operations in St. Lucia were begun in January 1956. DDT residual house spraying was employed as the principal attack measure, and after a protracted first cycle, operations proceeded according to plan. Spraying was discontinued in September 1959 and malaria surveillance was instituted. No autochthonous case was found from June 1959 through 1962, and malaria eradication in the island was certified by PAHO/WHO in December 1962. In 1963, however, 2 autochthonous cases and 3 of uncertain origin, all in children and caused by *Plasmodium malariae*, were discovered in a restricted area. Thorough measures to stamp out this focus were applied and when intensive search failed to reveal more cases the certification was allowed to stand. During 1964 four relapsing cases of *P. malariae* were discovered. There were no cases in 1965.

Dominica began eradication operations in June 1959 with DDT spraying as the principal attack measure. Apart from some financial difficulties, which slowed down some cycles, the attack phase proceeded according to plan until it was discontinued in November 1962. No case of malaria has been discovered in the island, despite careful scrutiny, since November 1961. The third successful year of the consolidation phase terminated at the end of 1965 and certification of eradication of malaria in the island was scheduled for completion in early 1966.

PAHO/SMF

UNICEF

WEST INDIES-2200 (-18), Water Supplies

Objective: To prepare plans and designs for the improvement and expansion of existing water supply systems and the construction of new ones in several islands of the Eastern Caribbean.

Probable duration: 1962-1968.

Assistance provided: Advice by the sanitary engineer assigned to AMRO-2101.

Work done: In Antigua and St. Lucia, personnel were trained in the use of new well-drilling equipment provided during the year. The Water or Sanitation Departments of Barbados, Dominica, Grenada, and Montserrat received advice on the taking of a survey of existing water supply systems and planning improvements or

expansion as required in accordance with the population needs.

WHO/R, WHO/UN-TA

WEST INDIES-3101 (-4), Fellowships for Health Services

Awards	Field of study	Place of study	Months
2	Environmental sanitation	Jamaica	10½
1	Ditto (insecticide control)	United States of America	1
1	Laboratory services	Jamaica	6
1	Ditto	Ditto	9
1	Sanitary engineering	Barbados, Grenada, St. Lucia	3

PAHO/R

WEST INDIES-3102 (-5), Fellowships for Health Services

Awards	Field of study	Place of study	Months
1	Environmental sanitation	Barbados, Grenada, Puerto Rico	1
1	Ditto	Jamaica	10½
3	Medical technology	Ditto	9

WHO/R

WEST INDIES-3104 (-27), Health Services in Montserrat

Objective: To develop a general health program based on the strengthening and expansion of existing services.

Probable duration: 1965-1968.

Assistance provided: Advisory services by personnel of Zone I Office and of projects in the area.

Work done: In the last months of the year, various studies were made of a plan for a new 100-bed hospital.

In a survey to learn the status of dental health among schoolchildren, 1,138 students were examined and 81% were found to have caries.

Environmental sanitation activities were begun, especially as regards the construction of privies for schools and studies on possible garbage disposal measures.

WHO/UN-TA

WEST INDIES-3200 (-3), Nursing Services

Objective: To improve the nursing services in Barbados, Dominica, Montserrat, and St. Lucia; and, as soon as

possible, to extend the project to other islands in the Eastern Caribbean.

Probable duration: 1959-1968.

Assistance provided: 1 nurse adviser and consultant services by the nurse adviser assigned to project AMRO-3201; and the following fellowships:

Awards	Place of origin	Field of study	Country of study	Months
1	Barbados	Nursing services	United States of America	5
1	Barbados	Public health nursing (administration and supervision)	Jamaica	12
1	St. Lucia	Nursing education	Canada	12
1	St. Lucia	Public health nursing	Jamaica	12
1	St. Vincent	Ditto	Ditto	12

Work done: The district nurses and supervisors trained through fellowship awards in recent years made it possible to expand in 1965 the preventive aspects of health programs. The nursing section of the health services of the islands in the area placed emphasis on nutrition and sanitation education activities and on the provision of iron supplement for pregnant women and of skim milk for infants, in order to combat the problems of malnutrition and gastroenteritis.

UNICEF awarded 33 fellowships for district nurses and supervisors to attend a 2-month course on orientation to public health nursing held in Barbados, as follows: Antigua, 5; Barbados, 3; Basseterre, 1; Dominica, 6; Grenada, 4; Montserrat, 2; Nevis, 1; St. Kitts, 2; St. Lucia, 5; and St. Vincent, 4. (One supervisor each from Dominica, Grenada, and St. Lucia had 1 additional week of instruction.)

In addition to the course mentioned above, inservice education programs were initiated in Barbados and Montserrat for staff of the health services. In Dominica and Montserrat, hospital and district services designed and implemented referral slips to provide for the followup of children with malnutrition and gastroenteritis, and in the latter island the clinic and record-keeping systems were reorganized.

PAHO/R, WHO/R

UNICEF

WEST INDIES-3201 (-30), Pediatric Nurses Course

Objective: To provide opportunity for supervisory staff in children's wards of hospitals in the Leeward and Windward Islands to acquire new skills related to modern pediatric nursing procedures, principles of ward man-

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agement and techniques of health education, in order to improve the care of sick children.

Probable duration: 1964-1966.

Assistance provided: Consultant services by PAHO/WHO nurse advisers assigned to other projects in the area.

Work done: The first 6-month course (begun in 1964) was completed in March, with 7 graduates (1964 fellowship awards). The Foundation for International Medical Services provided travel funds for 2 nurses from the University Hospital in Jamaica to visit the Leeward and Windward Islands in order to followup and assist the graduates of the course in applying their new knowledge, particularly to improve services in the local pediatric wards. The nurses' findings on these visits were used to modify the content of the second course.

UNICEF awarded 8 fellowships for the second 6-month course, held in Jamaica, as follows: Antigua, Barbados, Dominica (2), Grenada, Nevis, St. Lucia, and St. Vincent.

UNICEF

WEST INDIES-4200 (-22), Nutrition

Objective: To improve the level of nutrition in Antigua, Barbados, Dominica, Grenada, Jamaica, Montserrat, St. Kitts, St. Lucia, and St. Vincent, through training courses for technical and local personnel, school gardens, and nutrition education in schools and health centers.

Probable duration: 1962-1967.

Assistance provided: Consultant services by the adviser and the public health nutritionist of project AMRO-4201; and one 12-month fellowship for a fellow from St. Kitts to study nutrition, in the United States of America.

Work done: A National Nutrition Committee was organized in Barbados, and plans to develop an integrated public health program were under study.

The National Nutrition Committee of Jamaica held regular meetings to coordinate the activities of the Ministries of Health, Education, and Social Welfare for the effective development of the country's applied nutrition program.

In Montserrat a 10-day course for 22 hospital and district nurses and public health inspectors was conducted.

A course in nutrition was given for 12 teachers and nutrition education was initiated in 6 pilot schools in St. Kitts.

In St. Lucia the nutrition education activities, were continued in 5 pilot schools and 5 health centers. The teaching of nutrition in the schools of nursing and at

the Teacher-Training College was reviewed and revised.

Six hours of nutrition teaching were included in the training course for district nurses working in the Eastern Caribbean.

WHO/R

FAO, UNICEF

WEST INDIES-4802, Training in Hospital Administration

One 12-month fellowship was awarded to study hospital administration in the United States of America.

WHO/UN-TA

AMRO-0102 (-162), Epidemiology (Zone II)

Objective: To stimulate the development of programs for the eradication or control of communicable diseases and for better reporting services in the countries of Zone II; and to advise the Governments on new methods and techniques of control of those diseases and on problems related to the application of the International Sanitary Regulations.

Probable duration: 1965-

Assistance provided: 1 epidemiologist.

Work done: Activities were oriented toward the organization and development of epidemiological services, the training of professional and auxiliary personnel, and the improvement of emergency control measures and reporting of notifiable diseases.

In Cuba the situation of communicable diseases was analyzed. The epidemiologist lectured during 3 weeks at the School of Public Health, and participated in the reorganization of the Department of Epidemiology of the School; he also assisted the Ministry of Public Health in a revision of the teaching of epidemiology for paramedical workers throughout the country and for medical students at the University of Santiago.

In regard to the yaws situation in Haiti a survey was carried out that will provide a foundation for the work of the evaluation team scheduled for 1966.

PAHO/R

AMRO-0103 (-203), Epidemiology (Zone III)

Objective: To stimulate and guide the development of epidemiological services in the countries of Zone III; to advise the Governments on control or eradication programs for communicable diseases; to coordinate

the development of such programs and ensure the continuing exchange of epidemiological information; to study and suggest to the countries new control techniques; to promote and participate in epidemiological investigations; to coordinate and participate in personnel training activities; and to give advise on the application of the International Sanitary Regulations.

Probable duration: 1961-

Assistance provided: 1 epidemiologist.

Work done: Assistance with epidemiology programs in Central America chiefly took the form of cooperation with the preparation of epidemiological control programs (El Salvador, Guatemala) or in their operation (Guatemala, Honduras).

By the end of the year, the epidemiological services of some countries in Zone III had a defined structure, especially at the central level, with statistical systems, completed public health laboratories, and programs underway; other programs were at a less developed stage, improvements still being required in the statistical reporting system, which is the basis for planning and executing programs and the adjustment of their field activities to the needs of the country; the remaining ones, even though they had a defined structure at the central level, still lacked sufficient personnel trained in statistics as well as suitable public health laboratories.

For these reasons, efforts continued to be focused on promoting the development of reporting services, communicable disease statistics, and public health laboratories; on improving the planning, execution, and evaluation of programs; and on cooperating in the training of the necessary personnel. The improvement of *Aedes aegypti* surveillance services was also promoted.

The principal activities were as follows:

The results of the Costa Rica vaccination programs were far below the targets: during the first 9 months of the year 22,267 smallpox vaccinations, 62,245 DPT vaccinations, and 28,529 poliomyelitis vaccinations were given, or, in other words, 10.5%, 42.2%, and 15.0%, respectively, of the targets established for the year.

The epidemiology consultant assisted in the investigation of cases of poisoning by flour accidentally contaminated by organo-phosphorous insecticides, which occurred in August and September, some of which were fatal. The Organization assisted in the acquisition of drugs for the treatment of these patients, and in the analysis of flour samples.

Assistance was given in the planning and conduct

of a course on epidemiology sponsored by PAHO/WHO and organized by the International Medical Research and Training Center (CIAM) which the University of Louisiana maintains in cooperation with the Government of Costa Rica. The course was held during August and September and was attended by most chiefs of epidemiology programs in Central America, several medical officers from Costa Rica, and by personnel of CIAM.

During the first 6 months of the year, 39,342 DPT and 132,071 BCG vaccinations were given in El Salvador, or 37% and 58%, respectively, of the goals established for the year; 19,324 typhoid vaccinations were also given.

The epidemiologist assisted in *A. aegypti* eradication activities and participated in a course, given for environmental health supervisors, on the most important theoretical and practical aspects of communicable diseases control.

In Guatemala, during the first 10 months, 128,121 persons were vaccinated with BCG and 282,988 against poliomyelitis, representing 42.9% and 88%, respectively, of the goals established for the year. Poliomyelitis vaccinations were primarily given to the urban population of the department capitals, or 25% of the total susceptible population. During the same period, 213,803 smallpox and 58,377 DPT vaccinations were given, or 32% and 36%, respectively, of the goals for the year. Although no goal was established for typhoid vaccinations, 37,638 were given.

The epidemiologist, together with national experts, participated in the investigation of an outbreak of insecticide poisoning during which 45 cases and 20 deaths occurred in the North of the country. The toxic compound was eaten with the wheat distributed in that area for planting; the wheat seeds had been previously treated with a mercury solution.

In Honduras 197,717 smallpox vaccinations, 87,158 DPT vaccinations, and 159,951 poliomyelitis vaccinations were given during the first 9 months of the year.

The epidemiologist assisted the Government in the investigation and development of control measures for a poliomyelitis outbreak which began in August in the North of the country. Up to 5 December 222 paralytic cases and 9 deaths were recorded. The attack rate was 41 per 100,000 population, and 90% of the cases occurred among children under 5 years of age. The cities most affected were San Pedro Sula, Tela, and La Ceiba; the last mentioned town was the center of a focus which caused 43 of the cases and 2 of the deaths, with an attack rate of 99 per 100,000 children

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under 7 years of age. In October the authorities began a mass poliomyelitis vaccination program in which the first inoculation was to be given to 272,000 children, in order to reach, including already vaccinated children, 80% of the total population under 7 years of age in the country.

Assistance was also given to the authorities of Nicaragua in the control of a poliomyelitis outbreak which in early 1965 caused 101 paralytic cases and 2 deaths. As the result of this outbreak, which chiefly affected the departments of Chinandega, León, and Managua, a mass vaccination plan was carried out. In the first 10 months of the year, 400,570 children under 10 years, or 78% of the goal established for the year, were vaccinated.

During the same period, Nicaragua also vaccinated 105,516 persons against smallpox, 44,541 against diphtheria-pertussis-tetanus, 142,204 against typhoid, or 43%, 631%, and 116%, respectively, of the goals established for the year.

Under the rabies control program 10,310 dogs, or 171% of the goal for the year, were vaccinated.

PAHO/R

AMRO-0106 (-163), Epidemiology (Zone VI)

Objective: To stimulate the development of programs for the eradication or control of communicable diseases and improve reporting services in the countries of Zone VI; to advise the Governments on the application of modern techniques and methods for the control of these diseases, and on problems related to the International Sanitary Regulations.

Probable duration: 1958-

Assistance provided: 1 epidemiologist.

Work done: Assistance was given to the countries of the Zone in the preparation of draft projects for their participation in the continental smallpox eradication program, and specifically to Argentina and Paraguay in the epidemiological study and application of long term and emergency measures for the control of outbreaks of the disease.

Data on venereal diseases in Argentina collected by a questionnaire indicated a continuing increase in these diseases in recent years, especially since 1961. The results of the tuberculosis control program in Santa Fe were assessed and its objectives were redefined.

The epidemiologist assisted in formulating the National Health Plan of Chile, and gave advisory services in his specialty to the study groups in charge of the preparation of the Plan.

The Government of Uruguay was given advice in connection with the appearance of an outbreak of canine rabies.

A study of the needs for strengthening laboratory diagnosis services for communicable diseases and obtaining better case reporting with the health authorities of the countries of the Zone was made to that end; assistance was given in the organization of data recording services, and in the planning and organization of control activities, as well as personnel training.

PAHO/R

AMRO-0108 (-280), Research Training Program in Virology (Cornell University Medical College)

Objective: To study the ecology of arboviruses, especially the role of migratory birds in the spread of arbovirus in temperate and tropical areas in the northern part of the Hemisphere; and to provide research training in this field.

Probable duration: 1961-1966.

Assistance provided: Advisory services by Headquarters personnel.

Work done: Research in México was continued to ascertain levels of arbovirus activity south of Veracruz and to define the role of heron colonies in the ecology of arbovirus in Minatitlán; efforts were made to obtain additional samples of migratory birds.

The 3rd summer course took place in Veracruz, from 11 July to 21 August, with the participation of teaching staff from the Institute of Tropical Diseases, the National School of Biological Sciences of the National Polytechnic Institute, and the Institute of Biology of the National Autonomous University, all of México; Cornell University, of New York; and PAHO.

USPHS-NIH

AMRO-0109 (-140), Investigation of Diseases Caused by Arboviruses

Objective: To carry out research on the ecology of hemorrhagic fever in order to establish procedures for its control.

Probable duration: 1957-1958; 1963-

Assistance provided: Advisory services and administrative facilities by Headquarters staff.

Work done: As part of the established working arrangement between the USPHS and the Organization concerning disease-investigation studies and laboratory

assistance to be provided in various countries of the Americas by the Middle America Research Unit, a new member of the hemorrhagic fever group of viruses was isolated. It was named Amapari virus after the river in the Amapa Territory, Brazil. A rather broad survey was made of all eastern Bolivia, as well as of the areas adjacent to Paraguay, Brazil, and Perú. This survey involved sampling of rodent and human sera in an effort to discern the distribution of the hemorrhagic fever viruses. A team of MARU scientists spent some weeks in Argentina collaborating with the national health authorities concerned with studies of Argentine hemorrhagic fever.

Studies made by MARU staff have revealed viruses identified for the first time in this Hemisphere, such as one of the group that causes sandfly fever.

USPHS

AMRO-0200 (-90), Malaria Eradication Advisory Services (inter-Zone)

Objective: To provide advisory services in entomology, parasitology, and transportation.

Probable duration: 1955-1971.

Assistance provided: 1 entomologist until 30 April, 1 parasitologist, and 2 administrative officers specialized in transportation; a limited amount of equipment; and laboratory supplies.

Work done: The entomologist served as coordinator-instructor of national and PAHO entomologists, assisting any program that needed expert assistance. He spent the latter part of the year in Brazil, reviewing the behavior of the *Anopheles kerteszia* mosquitoes in Santa Catarina state and in the Amazon valley.

The parasitologist provided technical advisory services in Brazil in connection with project AMRO-0212 (Resistance of Malaria Strains to Drugs), in Ribeirão Preto, and in the setting up of a field trial of a new treatment for cases infected by chloroquine-resistant *Plasmodium falciparum* in the state of Espírito Santo. He also assisted in the training of microscopists in Brazil and Perú's malaria programs.

The consultants in transportation made 26 visits to several countries where they provided services in relation to the evaluation of transportation equipment and spare parts and the organization and administration of repair shops.

The first meeting of the PAHO Advisory Committee on Malaria Eradication was held in Washington, D.C., U.S.A., from 31 August through 3 September. Observ-

ers from the U.S. Public Health Service and the Agency for International Development also took part in the deliberations. A final report including recommendations was reproduced and distributed among Ministries of Health, National Malaria Eradication Services, and PAHO/WHO Country Representatives.

PAHO/SMF, WHO/R, WHO/MESA

AMRO-0201 (-117), Malaria Technical Advisory Services (Zone I)

Objective: To provide technical advisory services to the countries and territories in Zone I and coordinate the respective malaria eradication programs; and to coordinate the research and training activities of these programs with those of the Hemisphere-wide malaria eradication program.

Duration: 1957-1965.

Assistance provided: A complete malaria eradication team which, during the years this project functioned, varied in size to include 1 or 2 medical officers specialized in malariology, 1 sanitary engineer, 1 administrative methods consultant, 1 statistician, 1 entomologist, 1 laboratory adviser, 1 sanitation inspector, and 1 administrative assistant, as well as short-term consultants.

Work done: While this project was in operation, the team provided technical advice, as necessary, to the various projects in the Zone. By the end of 1965, malaria eradication had been confirmed in Barbados, Carriacou, Dominica, Grenada, Guadeloupe, Martinique, St. Lucia, and Trinidad and Tobago. The only areas in Zone I where malaria transmission still continued were British Guiana, French Guiana, and Surinam, where projects continued operating. Advisory services will continue to be provided to all areas in Zone I, as necessary, by Headquarters and specific country projects personnel and by short-term consultants.

PAHO/SMF

AMRO-0203 (-118), Malaria Technical Advisory Services (Zone III)

Objective: To provide technical advisory services to the Governments of the countries in Zone III and coordinate the respective malaria eradication programs; and to coordinate the research and training activities of these programs with those of the Hemisphere-wide malaria eradication program.

VIII. PROJECT ACTIVITIES

Probable duration: 1958-1971 or until all the countries in the Zone complete the consolidation phase of their malaria eradication programs.

Assistance provided: 1 malariologist, 1 health educator, and 1 administrative methods adviser.

Work done: The malariologist visited all the programs in the Zone for purposes of evaluation, advice and supervision. He also functioned as secretary of the Working Group for Coordination of the Malaria Eradication Programs of Central America and Panamá, which met in Guatemala City from 6 to 8 September. The health educator rendered services to all malaria programs in the Isthmus of Central America and Panamá and was instrumental in preparing materials for the training of staff and education of the public, in connection with the collective drug programs being undertaken in Honduras and other countries of the Zone. The administrative methods adviser rendered services to the malaria programs of Costa Rica, El Salvador, Honduras, Nicaragua, and, more particularly, that of Panamá.

PAHO/SMF, WHO/MESA

AMRO-0204 (-119), Malaria Technical Advisory Services (Zone IV)

Objective: To provide technical advisory services to the Governments of the countries in Zone IV and coordinate the respective malaria eradication programs; and to coordinate the research and training activities of these programs with those of the Hemisphere-wide malaria eradication program.

Probable duration: 1958-1970 or until all the countries in the Zone complete the consolidation phase of their programs.

Assistance provided: 1 malariologist.

Work done: Although the malariologist was mainly occupied with the program of Colombia, where he was stationed, he also visited the malaria programs of Bolivia, Ecuador, and Perú to evaluate achievements, provide consultation on policy, and supervise the work of program consultants.

PAHO/SMF

AMRO-0209 (-196), Insecticide Testing Team

Objective: To study the activity of new insecticides; and to develop and evaluate methods of applying larvicides for use in the malaria eradication campaigns.

Probable duration: 1959-1969.

Assistance provided: 1 entomologist, 1 assistant entomologist, and 1 entomological aide, all with duty station in El Salvador; all equipment and supplies; and a grant to cover salaries of local auxiliary personnel.

Work done: The team contributed new information on the susceptibility and resistance of various strains of *Anopheles albimanus* to the standard insecticides as well as to 12 of the more promising new ones.

A method was perfected for testing combined effects of irritability and lethality of new insecticides either alone or over a prior deposit or DDT. The method proved extremely useful.

On the basis of much background study it was decided in March that OMS-33 (Bayer-39007, or Baygon, a new carbamate insecticide) was the most promising one available for use in the Americas to overcome the DDT-resistance problem. At the end of September, trials were started in 3 villages with a total of 320 houses. The initial kills were excellent, but the residual effect was little more than 3 months at best and was considerably shortened in dry weather. An expanded village-scale trial was planned and scheduled to start before the next rainy season.

Larviciding procedures with the new larvicide fenthion were evaluated. The findings showed that fenthion is impractical in the rural areas of Central America.

These studies are fully coordinated with other laboratory and field trials of WHO's Insecticide Studies.

WHO/R, WHO/MESA

AMRO-0210 (-220), Malaria Eradication Epidemiology Team

Objective: To determine causes of the persistence of malaria transmission; to recommend additional eradication measures; and to develop methods for the study of the epidemiology of persistence of transmission.

Probable duration: 1960-1971.

Assistance provided: 1 epidemiologist and 1 entomologist.

Work done: The team measured the effectiveness of combined-attack methods in Pinotepa Nacional, the most extensive problem area in México. The first combination studied was DDT spraying 3 times a year plus intensified case-finding and prompt radical treatment of all cases found.

Persistence of transmission in this area is so low that search for cases and radical-cure treatment may prove to be all that is needed to interrupt transmission.

The study showed that search for fever cases alone does not pick up all the malaria cases in the community and that the benefits of radical-cure treatment of all discovered cases may not be clearly apparent until more than 1 year has elapsed. The study must continue at its present spot for at least another year in order to devise a means to discover all remaining cases, before the team can tackle another type of problem area and other methods of solving its problems.

WHO/MESA

AMRO-0211 (-344), Seminars on the Role of Local Health Services in the Malaria Eradication Programs

Objective: To study the participation of the local health services in malaria eradication programs by means of seminars where the authorities of the general health services and the directors of malaria eradication campaigns of the Hemisphere may exchange views and experiences.

Duration: 1963-1965.

Assistance provided: 1 short-term consultant in 1963, 1 in 1964 and assistance by 3 Headquarters staff members, and 1 in 1965; and simultaneous interpretation services for 2 seminars.

Work done: The first seminar, held in Poços de Caldas, Minas Gerais, Brazil, from 26 June to 4 July 1964, was attended by 50 participants as follows: Argentina, 8; Bolivia, 3; Brazil, 27; Colombia, 2; Ecuador, 2; Paraguay, 2; Perú, 3; and Venezuela, 3; 23 PAHO/WHO staff members, and observers from AID and UNICEF also participated. The second seminar, held in Cuernavaca, México, from 4 to 13 March 1965, had 30 participants from: British Guiana, 1; Costa Rica, 2; Cuba, 2; Dominican Republic, 2; Grenada, 1; Guadeloupe, 1; Guatemala, 2; Haiti, 2; Honduras, 2; Jamaica, 2; México, 4; Nicaragua, 2; Panamá, 2; St. Lucia, 1; Surinam, 1; Trinidad and Tobago, 1; and United States of America, 2. Thirty-two PAHO/WHO staff members, and observers from AID and UNICEF also participated.

Individual reports were issued immediately after each seminar, and later a combined final report (*PAHO Scientific Publication 118*) was distributed to all health authorities concerned.

PAHO/SMF

AMRO-0212 (-350), Resistance of Malaria Plasmodia Strains to Drugs

Objective: To study the plasmodia strains of human malaria which are resistant to the antimalarial drugs at present in use.

Duration: January 1963-March 1965.

Assistance provided: Contractual services, and equipment and supplies.

Work done: During the 2 years it was in operation, the Strain Screening Center for Drug-Resistant Plasmodia, located in the Santa Tereza Hospital of Ribeirão Preto, São Paulo, Brazil, studied 15 strains of *Plasmodium falciparum*—obtained from 10 localities in Brazil, 4 in Colombia, and 1 in Venezuela. Five of the strains were taken in the field and the remaining ones from persons reporting to the laboratory of the malaria service in Ribeirão Preto. The Center investigated the efficiency of various methods of inoculation with the following results:

Blood injected	Successful	Unsuccessful	Total
Chilled	64	21	85
Frozen	11	15	26
Fresh	56	2	58
Total	131	38	169

The response of the various strains to chloroquine was a primary subject of investigation. Nine of the strains were adjudged insensitive to chloroquine (less than normal response); 3 strains showed complete lack of response, and the others showed varying degrees of insensitivity with increased response to the higher dosages.

The response to pyrimethamine was also investigated and 4 strains were found to be definitely insensitive and 3 normally sensitive. Not all strains were tested.

Hopes for a drug combination that could be freely used in the field in areas with drug-resistant plasmodia were dampened when further testing of treatment with pyrimethamine combined with long-acting sulfonamide, although highly successful in curing infections even with pyrimethamine-resistant and chloroquine-resistant strains, produced cases of leucopenia. All the leucopenia cases were readily cured with folic acid but 4 had to be given blood transfusions in their acute stages. Although the Center was closed on 31 March 1965, the leucopenia cases were followed up into August, in order to confirm the success of the regimens that finally produced a cure.

Tabulations of the more than 200 treatments given to patients infected with 10 of the strains tested were made and presented in a working document to the First Meeting of the Advisory Committee on Malaria

VIII. PROJECT ACTIVITIES

Eradication, held August-September 1965 in Washington, D.C., U.S.A.

WHO/R

AMRO-0214, Advanced Course in Malaria Epidemiology

Objective: To provide advanced training on epidemiology of malaria for malariologists, national and international, working in the Malaria Eradication Program of the Americas.

Probable duration: November 1965-1968.

Assistance provided: Travel and per diem for 1 short-term consultant, for 6 PAHO/WHO senior epidemiologists, and for the director of the national malaria eradication program of Colombia—to serve as lecturers (several staff members of the Venezuelan Malaria Eradication Service and of the School of Malariology of Maracay also contributed their services as lecturers); and simultaneous interpretation services for 2 days.

Work done: The epidemiology of disappearing malaria becomes more complicated in the late phases of the program. Experience with problem areas has shown the urgent need for their early detection, delimitation, and selection of the best method of replacing residual insecticide spraying or to supplement it.

Therefore, to train personnel in malaria epidemiology an advanced course was held at the School of Malariology in Maracay, sponsored by the Government of Venezuela and PAHO/WHO. The course, planned by a special coordinator, was taught by staff of the School of Malariology with the assistance of guest lecturers and Headquarters staff and was attended by 15 PAHO malaria advisers to country programs. After 2 weeks of formal lectures and seminars, the group, accompanied by PAHO/WHO instructors and members of the Venezuelan malaria staff, went on a 2-week field trip to observe various aspects of the Venezuelan program.

PAHO/SMF

AMRO-0300 (-60), Smallpox Eradication

Objective: To cooperate with Governments in the production of smallpox vaccine; and to advise them on the organization, conduct, and evaluation of national smallpox eradication programs.

Probable duration: 1951-

Assistance provided: Short-term consultants.

Work done: A joint study on a national smallpox eradication program in Brazil was made with officials of the Ministry of Public Health. A first draft covered costs and the estimated international assistance required.

A questionnaire was prepared for a survey to determine, in the countries where smallpox still exists, what resources are available for smallpox eradication and the international assistance required to eradicate the disease, and in those countries in which at present there is no smallpox, the international assistance required for maintenance and epidemiological surveillance programs to keep them free from the disease. In December, 10 consultants recruited for this study met with PASB staff in Santiago, Chile, to discuss the questionnaire and reach consensus as to its application and interpretation.

A document on the present situation of the smallpox eradication program in the Americas was prepared for the XVI Meeting of the Directing Council, held in Washington, D.C., in September-October.

PAHO/R, WHO/Other

AMRO-0400 (-110), Tuberculosis Control (inter-Zone)

Objective: To collaborate with the Governments in the planning and carrying out of tuberculosis control programs; and to stimulate technical meetings in order to foster and expand antituberculosis programs.

Probable duration: 1957-

Assistance provided: Advisory services by the Regional Adviser; and equipment and supplies.

Work done: As the result of the guidelines discussed and agreed upon at international meetings in 1964, a renewed interest in the problem of tuberculosis and in the adoption of suitable control programs could be noted on the part of the countries in 1965. Several countries placed special emphasis on bacteriological diagnosis and stepped up the training of auxiliary personnel; other countries were extensively applying indiscriminate (without prior tuberculin test) BCG vaccinations together with other immunizations.

The protocol for a study of the prevalence of primary resistance to isoniazid and the prevalence of atypical mycobacteria was being prepared; for the sensitivity tests and the classification of atypical mycobacteria various procedures are to be used in 2 laboratories in the Americas and 3 in Europe.

A course on the bacteriological diagnosis of tuberculosis was prepared, with emphasis on simple procedures. The course will be held in Caracas, Venezuela, in early 1966.

During 1965 advisory services were given to Argentina, Brazil, Chile, Colombia, El Salvador, Honduras, México, Nicaragua, and Venezuela.

Two Argentine laboratories and 1 each in Chile and Venezuela conducted comparative tests of solid and liquid culture media.

Studies were begun for the establishment of a *verification area* in Brazil, and another in Colombia, in which from the outset the program will be planned on a well defined organization, structure, and standards so it may serve for the evaluation and improvement of the observation of cases under control.

The material for *Scientific Publication* 112 was prepared. The publication contains all the documents relating to the Technical Discussions held (9 September 1964) during the XV Meeting of the Directing Council of PAHO (México, D.F.; 31 August-11 September) and to the Regional Seminar on Tuberculosis (Maracay and Caracas, Venezuela; 29 November-5 December 1964); 2,000 copies were distributed. Four papers and 4 documents of WHO were translated and mimeographed, among which the *Technical Guides No. 4* and *5* are of special importance. The *Boletín* of the Pan American Sanitary Bureau published 3 papers on tuberculin, BCG, and bacterial resistance, reprints of which were widely distributed throughout the countries and numerous summaries and excerpts on various aspects of tuberculosis.

The Regional Adviser participated in 2 meetings of the United States-México Border Public Health Association, which dealt with various aspects of tuberculosis control program in the border areas of both countries.

WHO/R

AMRO-0403 (-246), Tuberculosis Control (Zone III)

Objective: To collaborate with the Governments of the countries of Zone III in the study, organization, conduct, and evaluation of tuberculosis control programs, in the training of professional and auxiliary personnel in modern techniques, and in the integration of tuberculosis control activities into the general health services.

Probable duration: 1963-1966.

Assistance provided: 1 short-term consultant.

Work done: Honduras and Nicaragua continued their programs, and that of El Salvador was begun in August. These 3 countries, where the consultant gave advisory services, continued to expand their control activities and to incorporate and coordinate those activities into the general health services. Costa Rica, Guatemala, and Panamá also intensified their activities, but did not achieve their full integration into the general health services during the year. (*See also* the individual projects for each country, except Guatemala).

PAHO/R

AMRO-0404 (-316), Tuberculosis Control (Zone IV)

Objective: To collaborate with the Governments of the countries of Zone IV in the study, organization, conduct and evaluation of tuberculosis control programs, in the training of professional and auxiliary personnel in modern techniques of tuberculosis control, and in the integration of tuberculosis control activities into the general health services.

Probable duration: 1962-1966.

Assistance provided: 1 medical adviser.

Work done: The adviser, who took up his duties in June, visited 4 countries in the Zone. A revision of projects Bolivia-0400 and Perú-0401 (Tacna) was begun, covering work standards, data recording systems, and the establishment of targets and priorities. The adviser made 2 visits to Colombia to cooperate in basic studies on the establishment of a *verification area*, in which the general guidelines of PAHO for tuberculosis control programs will be fully applied (*see* AMRO-0400). In Ecuador the training of personnel who will incorporate tuberculosis control activities into project Ecuador-3100 (Manabí province) was begun in cooperation with the Ecuadorian League Against Tuberculosis.

WHO/R

AMRO-0500 (-149), Leprosy Control (inter-Zone)

Objective: To determine the prevalence and characteristics of leprosy in the Americas; and to assist the Governments in the planning, programming, and organization of leprosy control activities and in the training of professional and auxiliary personnel.

Probable duration: 1958-

Assistance provided: 1 short-term consultant and advisory services by Headquarters personnel.

VIII. PROJECT ACTIVITIES

Work done: A detailed study was made of the planning, organization, conduct, and evaluation of leprosy control programs in Argentina, Ecuador, and Venezuela, with the technical cooperation of PASB. Basic guidelines were also established for programs of epidemiological, sociological, and administrative research, as parallel activities. As a first step in making program administration more effective, suitable data recording systems were organized; to that end, medical and paramedical personnel were given training in the various techniques, including notification, recording, tabulation, analysis, interpretation, and publication of the data. In the 3 countries mentioned, progress was made in establishing the quantitative objectives, the table of operations, the performance indices, evaluation procedures, and costing.

As a preliminary step in organizing the next Pan American Seminar on Leprosy (planned for 1968), a guide was prepared on the role of the seminar and that of the countries of the Americas in it.

Progress was made in the preparation of a manual on leprosy control programs, and by the end of the year the glossary of epidemiological, administrative, and physical rehabilitation terms was well advanced.

PAHO/R

AMRO-0504 (-263), Leprosy Control (Zone IV)

Objective: To collaborate with the Governments of the countries of Zone IV in the study, organization, conduct, and evaluation of leprosy control programs, in the training of professional and auxiliary personnel in modern techniques of leprosy control, and in the integration of leprosy control activities into general health services.

Probable duration: 1960.

Assistance provided: 1 medical officer.

Work done: The adviser to this project, who is stationed in Guayaquil, Ecuador, devoted a large part of his time to the leprosy control program in that country (see Ecuador-0500); he also provided the Governments of Bolivia, Colombia, and Perú with advisory services. A study was made in Perú of the leprosy problem in the Andean region.

WHO/R

AMRO-0506 (-305), Leprosy Control (Zone VI)

Objective: To collaborate with the Governments of the countries of Zone VI in the study, organization,

conduct, and evaluation of leprosy control programs, in the training of professional and auxiliary personnel in modern techniques of leprosy control, and in the integration of leprosy control services into the general health services.

Probable duration: 1962.

Assistance provided: 1 leprologist.

Work done: The adviser took up his duties at mid-year and assisted in the programs underway in Argentina and Paraguay (see Paraguay-0100). He also encouraged the establishment of a leprosy control program in Uruguay.

WHO/R

AMRO-0507, Courses on rehabilitation and prevention of deformities (Leprosy)

Objective: To give a course on the prevention of deformities and physical rehabilitation of leprosy patients, with special emphasis on nonsurgical methods.

Place and duration: Caracas, Venezuela; 3 May-16 July 1965.

Assistance provided: Short-term consultants and advisory services by Headquarters personnel; interpretation and secretariat services; and equipment and supplies.

Work done: The course on prevention of deformities and physical rehabilitation of leprosy patients, with emphasis on nonsurgical methods, was given under the auspices of the Government of Venezuela and the PASB, with the cooperation of the American Leprosy Mission, the Department of Physical Medicine of New York University, the World Rehabilitation Fund, Inc., and the International Society for the Rehabilitation of the Disabled.

The faculty was composed of technical staff of the Department of Physical Rehabilitation of the Ministry of Health and Social Welfare of Venezuela and the international consultants of the Organization. Theory was combined with practical demonstrations in hospitals in which physical rehabilitation is part of the leprosy control program in Venezuela.

The course was attended by 15 medical officers already working in leprosy control programs or about to be assigned to them, as follows: 2 from Argentina; 3 from Colombia; 2 from Ecuador; 1 from México; 2 from Paraguay; and 5 from Venezuela.

PAHO/R

AMRO-0600 (-160), Yaws Eradication and Venereal Disease Control

Objective: To provide advisory services on yaws eradication and venereal disease control.

Probable duration: 1961-

Assistance provided: 1 short-term consultant and advisory services by Headquarters staff.

Work done: The Seminar on Venereal Disease was organized (see AMRO-0607), and preparations were made for the courses on laboratory techniques for the diagnosis of venereal diseases, held in Santiago, Chile, in November.

Work was begun on a questionnaire for a survey to establish, insofar as possible, the present magnitude and scope of the venereal disease problem in the countries of Middle and South America and in the Caribbean Area. The preparation of a glossary of terms relating to these diseases was also begun.

Technical publications on venereal diseases were distributed to the countries of the Americas. With a view to future publication, the 1964 revision of the *Manual of Serologic Tests for Syphilis*, prepared by the Department of Venereal Diseases of the Communicable Disease Center of the United States Public Health Service, was translated into Spanish. In connection with the holding of the Seminar, material on laboratory techniques for diagnosing gonorrhoea, not included in the above-mentioned *Manual*, was also translated into Spanish for distribution to the countries.

Steps were taken to recruit an expert in epidemiology and statistics to direct the study on the status of yaws in Haiti and the Dominican Republic.

PAHO/R

AMRO-0607, Seminar on Venereal Diseases

Objective: To exchange ideas and experiences on the importance of venereal diseases and their epidemiological characteristics, on the importance of case detection and control, on clinical and laboratory diagnosis, and on professional education and personnel training in that field.

Place and duration: Washington, D.C., U.S.A.; 24-30 October 1965.

Assistance provided: 21 temporary advisers, all U.S. Public Health Service officers from the Communicable Disease Center, and advisory services by Headquarters and field personnel; and costs of the seminar.

Work done: One day was devoted to each agenda item, presented in plenary session by an expert and

then discussed by another expert. There were also practical demonstrations and meetings of working parties. A Final Report was approved and immediately distributed to the participants.

A total of 39 public health experts took part in the discussions. The 23 Member Countries, as well as British Honduras and Canada, were represented. One WHO (Geneva) official was among the observers.

The Communicable Disease Center provided all the supplies and equipment for the practical demonstrations, and the United States Public Health Service paid for the transportation.

WHO/R

USPHS

AMRO-0700 (-81), Pan American Zoonoses Center

Objective: To provide interested countries with advisory services for establishing or improving veterinary services and zoonoses control programs; to carry out research on the most prevalent zoonoses; and to train technical personnel for zoonoses control work.

Probable duration: 1956-

Assistance provided: 1 scientist director, 1 chief of laboratory services, 1 chief of technical services and training, 2 zoonoses specialists, 1 administrative officer and 1 short-term consultant; and equipment and supplies.

Work done: Chile, Perú, and Uruguay, as well as several provinces in Argentina, were visited to evaluate the situation with respect to control of rabies and to provide technical advice on diagnosis and the production of pertinent vaccines and sera.

The chief of Technical Services and Training carried out a study of the current general zoonoses situation in Chile, Ecuador, and Perú.

Colombia, Chile, and Uruguay received advice on problems dealing with bovine tuberculosis, brucellosis, goat brucellosis, and hydatidosis control. In Uruguay the national authorities were assisted in formulating control measures against a new outbreak of canine rabies. A short-term consultant was subsequently contracted to help the Governments of Argentina and Uruguay in their rabies control programs.

Continuing the Center's research program, work was begun on the typing of *Brucella* strains isolated from human patients and animals in various countries of Latin America; on an investigation into the natural occurrence of brucellosis in hares (*Lepus europaeus*) found in large quantities in the Azul and adjacent

VIII. PROJECT ACTIVITIES

areas; on a survey to determine the incidence of cattle infection with *Leptospira pomona* and *Lept. sejroe* in the Azul area, using the microscopic agglutination test; and on a special study for the adaptation of rabies virus of bovine origin to different types of tissue culture cells.

Safety trials of the Philips-Duphar brucellosis bacterin were repeated because strong local reactions had been noted following revaccination. In hydatidosis, studies on drug treatment of dogs infected with *Echinococcus granulosus* were continued, and a comparative study of different tests for human diagnosis of hydatidosis was conducted on persons from the province of Neuquén, one of the more heavily infected areas in Argentina. Two studies on the multiplication of *Leishmania brasiliensis* sp. in tissue culture were carried out. The transmission of rabies via the respiratory route was studied in laboratory animals and an evaluation of 5 antirabies vaccines for use in immunization of cattle was undertaken. Ecological and virological studies on *Desmodus rotundus* in Northern Argentina were continued.

In regard to education and training, 5 postgraduate students from Argentina, Bolivia, Brazil, Ecuador, and Paraguay, and 1 laboratory technician from México, received long-term training in special subjects related to the zoonoses; and 3 technicians from Argentina, 1 from México, and 1 from Paraguay were trained for short periods in the laboratory aspects of brucellosis and rabies diagnosis. Center staff members conducted in Lima, Perú, during February, a course on the use of fluorescent-antibody techniques to diagnose rabies; the course was attended by 27 professionals of various national health services and universities. A special international rabies course, which included epidemiological studies and laboratory practices, was held by the Center in Buenos Aires, Argentina, in cooperation with the Carlos G. Malbrán National Microbiological Institute and the Inter-Ministry Commission for Coordinating Zoonoses Work; 19 professionals from Argentina, Bolivia, Brazil, Chile, Perú, and Venezuela attended, as well as 1 observer from Argentina and 2 from Uruguay.

The Center prepared lists of references on several subjects dealing with zoonoses, in answer to requests from institutions or individuals from Argentina, Ecuador, Perú, Trinidad and Tobago, and the United States, and to meet the demand for epidemiological information and research findings, revised and enlarged the volume of its Spanish and English quarterly bulletin—*Zoonosis*. During the year, 5 scientific papers were published.

The Center received 70,602 specimens for diagnosis, 82 biological products for control studies, and 373 animal specimens for diagnostic and taxonomical classification.

**PAHO/R, PAHO/G: USPHS-NIH,
PAHO/G: Burroughs-Wellcome Foundation, Inc., WHO/UN-TA** **Government
of Argentina**

AMRO-0701 (-312), Rabies Control (Zone I)

Objective: To cooperate with the health services of the countries of Zone I in the development of rabies control activities, including training of personnel and the establishment of diagnostic services.

Probable duration: 1965-1968.

Assistance provided: 2 short-term consultants and advisory services by the public health veterinarian assigned to project AMRO-0703; and a limited amount of equipment and supplies.

Work done: Assistance was given to Grenada in a rabies control program based on elimination of the mongoose, reduction of stray dogs, and vaccination of owned dogs. Eight men were trained in trapping and a crew of 60 was instructed in appropriate poisoning methods. A trapping survey indicated a mongoose population of 25,000, with a density of 1 per hectare. Poisoning and trapping operations were immediately started in almost all parishes of the island—165 traps and 159,290 baits were set out in an area of 7,964 acres. Three teams operated dog vaccination clinics throughout the island and from April to November more than 8,000 dogs were registered and vaccinated. Special operations were carried out in an attempt to reduce the large number of stray dogs.

PAHO/R

AMRO-0703 (-188), Veterinary Public Health (Zone III)

Objective: To collaborate with the Governments of the countries of Zone III in the development of veterinary public health services and activities, especially the study and control of zoonoses and the application of protective measures in food control; to promote the teaching of veterinary public health; and to collaborate in the evaluation of programs of veterinary public health and of other programs aimed at the satisfactory use of these services.

Probable duration: 1957-

Assistance provided: 1 adviser in veterinary public health; and a limited amount of equipment and supplies.

Work done: Advice on food hygiene, zoonoses control, and food and drug control services was again given to the countries; public health personnel were trained both at the local and at the international level.

The increase in canine rabies cases in Central America during the year gave rise to an intensification of the activities of the regional rabies control program. The Organization assisted in the purchasing of poisons, vaccines, and other biological materials. In cooperation with the Pan American Zoonoses Center, which also furnished antigens and strains, the Organization continued to encourage the veterinary public health services of the countries to report periodically the cases of zoonoses recorded in Central America, and some progress was obtained in this regard. Assistance continued to be given to brucellosis and bovine tuberculosis control programs, in the form of advisory services, antigens, and other diagnostic reagents.

Assistance was given to Honduras in preparing a minimum plan of action for the Food Control Section, and technical assistance was given in estimating the work targets for 1965; progress was made also in the reorganization of the new Department of Veterinary Public Health of the Ministry of Public Health of Nicaragua.

The adviser conducted 2 courses on food technology at INCAP, and assisted the University of San Carlos of Guatemala with the regular courses on zoonoses and public health. Antigens, diagnostic strains, and reference vaccines were supplied to various laboratories, institutes, and teaching centers.

See also AMRO-4703.

WHO/R

AMRO-0708 (-61), Rabies Control

Objective: To provide supplies and advisory services for the control of rabies epidemic outbreaks.

Probable duration: 1954-

Assistance provided: Consultant services by the Regional Adviser in veterinary public health and by the veterinarian in public health assigned to the El Paso Field Office.

Work done: Emphasis was placed on rabies control along the United States-México border area, in cooperation with national, state, and local health departments of both countries; and because the problem of rabies continued to cause concern among the health authorities, local activities were carried out by the health au-

thorities, the Organization providing assistance in the planning and execution of the programs. In México, the cities of Mexicali, Tijuana, Juárez, and Metamoros vaccinated 25,815 dogs and 22,070 dogs were destroyed; on the United States side, in San Diego and El Paso 18,848 dogs were destroyed and an estimated 60% of the total canine population was vaccinated.

Emphasis was also placed on the need to encourage predator control activities in selected areas. Accordingly, the Organization made arrangements to hold in El Paso, Texas, an international meeting on predator control, which was attended by representatives of health, agricultural, and wildlife services, army and other dependencies of the Governments of México and United States of America, as well as by representatives of the Organization. In the state of Sonora, México, a predator control program was carried out, covering almost the whole state: 3,890 baits were laid, each of which will effectively protect an area of 10 km². The Organization provided both training for the personnel in charge of these activities and technical cooperation in the execution of the program.

Pursuant to discussions among the Surgeon General of the United States Public Health Service, the Minister of Health of México and the Director of the Pan American Sanitary Bureau—held during the course of the XXIII Meeting of the United States-México Border Public Health Association (Los Angeles, California; 7-10 June)—a program was designed to provide firm and effective support for the rabies campaigns planned for 1966.

The Costa Rica-Nicaragua Border Rabies Meeting dealing with rabies control in both countries was held in San Juan del Sur, Nicaragua, in October. This meeting, convened because 28 positive animals were recorded during an epizootic outbreak of rabies in Guanacaste Province, Costa Rica, in May, recommended that a special rabies control program be carried out as an immediate measure. At the end of the year this program was underway in the border area.

The problem of rabies again became acute in Montevideo, Uruguay, where up to the end of December over 175 cases among animals and 1 human case were recorded. A consultant was sent to advise the Government in planning a national rabies campaign; vaccines, supplies, equipment, and vehicles were also supplied.

Assistance was given to the Governments of Argentina, Costa Rica, the Dominican Republic, Grenada, Guatemala, Honduras, México, Perú, and Uruguay in purchasing strychnine, compound 1080, zinc sulphide, and rabies vaccines for their rabies programs.

VIII. PROJECT ACTIVITIES

Through the Pan American Zoonoses Center the countries were provided with biological products for the diagnosis of rabies as well as for the production and control of rabies vaccines.

AMRO-0800 (-77), Pan American Foot-and-Mouth Disease Center

Objective: To make available to interested countries advisory services for the control of foot-and-mouth disease, for laboratory diagnosis of the disease, and for the training of professional and auxiliary personnel; and to carry on research that will eventually result in the preparation of a modified live-virus vaccine for countries in need of it.

Probable duration: 1951.

Assistance provided: Part of the Center's staff and assistance with training, research, information and publications, technical and advisory services, and general services; equipment and supplies including biological reagents for diagnosis and research; and the following fellowships:

Awards	Country of origin	Field of study	Country of study	Months
1	Bolivia	Veterinary public health (foot-and-mouth disease)	Brazil	(days) 18
1	Brazil	Laboratory services	Colombia, Perú	1
1	Brazil	Veterinary public health	Argentina	1
1	Brazil	Ditto (foot-and-mouth disease)	Brazil	2
2	Brazil	Ditto	Argentina, Brazil	1¼
1	Colombia	Foot-and-mouth disease	Brazil	9
1	Perú	Communicable diseases	Ditto	2
1	Perú	Veterinary public health (foot-and-mouth disease)	Argentina, Brazil, Venezuela	(weeks) 2
1	Uruguay	Communicable diseases (foot-and-mouth disease)	Brazil	3½
1	Uruguay	Veterinary public health (foot-and-mouth disease)	Ditto	(days) 17
9	3	Communicable diseases (foot-and-mouth disease)	Brazil	(days) 17
9	4	Foot-and-mouth disease	Venezuela	(weeks) 2

³ Argentina, Brazil (2), Chile, Colombia, Ecuador, Perú, Paraguay, Venezuela.

⁴ Colombia, Costa Rica, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá (2).

Work done: Work continued in the 4 principal program areas: diagnosis, research, technical assistance to the countries, and training.

As part of the work relating to diagnosis, a survey of vesicular stomatitis viruses was made, outbreaks of the disease having occurred in the state of Alagoas in Brazil and in Salta, Buenos Aires, in Argentina, and 2 subtypes of Indiana virus were detected for the first time. Assistance was again given for early diagnosis of vesicular disease outbreaks in countries free of foot-and-mouth disease; a large number of samples were received from Central America and Panamá. Research was begun on complement-fixation antigen in various organs of the chicken embryo, rabbit and mouse, in order to study it in relation with the production of attenuated live-virus vaccine against foot-and-mouth disease. The strains used in Argentina, Brazil, Perú, and Uruguay for vaccine production and control tests were also studied.

The research program continued devoted mainly to improving the work with live virus and the techniques for studying virus persistence in convalescent animals. Toward the end of the year studies were begun in animals vaccinated with attenuated live virus. Attenuated live virus avianized O Campos strain vaccine, which had been improved at the Center was used with great success in Ecuador to control the O type foot-and-mouth disease outbreak which occurred in the south-eastern provinces of the country in June. The Center shipped 35,000 doses of vaccine and also furnished the seed virus with which the laboratories of the General Directorate of Animal Health of Guayaquil began large-scale vaccine production. Bivalent A Cruzeiro and O Campos vaccine was used for the first time in the program in Colombia; and approximately 6,000 cattle were vaccinated in Brazil, for which purpose trivalent attenuated live virus vaccine was used for the first time. Research also continued on the preservation of attenuated live-virus vaccine, its use in sheep and pigs, and the duration of immunity. Regarding the persistence of foot-and-mouth disease virus, especially in animals convalescing from the disease, practical methods of recovering the virus from carriers were studied, a significant step towards a better knowledge of the epizootiology of the disease and control measures.

A Center specialist cooperated with the laboratories of the Ministry of Agriculture in Bolivia, where the first lot of inactivated vaccine was produced during the year. Advisory services for the establishment of national foot-and-mouth disease campaigns were given to Bolivia, Ecuador, and Perú. The Center played an important role

in organizing the Rio Grande do Sul campaign, in Brazil, begun in December in municipalities on the Argentina or Uruguay border. Outstanding among the technical collaboration activities of the Center was the assistance given to Chile, Paraguay, and Uruguay in preparing applications for loans from the Inter-American Development Bank.

The XX Training Course was held in June in Maracay, Venezuela, for 10 veterinarians from countries free of foot-and-mouth disease, 9 of which attended as fellows of the Center and 1 as a fellow of the Institute of Agrarian Reform of Colombia. The XXI Course, held in Rio de Janeiro, Brazil, in September was attended by 10 veterinarians from countries affected by the disease; 9 were fellows of the Center and 1 was a fellow of the Government of Venezuela. The XXI Course dealt mainly with the principles of evaluating foot-and-mouth disease campaigns.

**PAHO/OAS-PTC,
PAHO/G: AID**

**Government of
Brazil, OIRSA**

AMRO-0901 (-155), Schistosomiasis Control

Objective: To assist countries to appraise their schistosomiasis problem, plan and develop control programs, and plan research projects.

Probable duration: 1960-

Assistance provided: 1 short-term consultant and advisory services by Headquarters staff.

Work done: Snail specimens for research were collected in Argentina, Chile, Ecuador, and Perú. Discussions were held with the national health authorities of Brazil concerning the planning and execution of a pilot control program.

The first draft of "An Introductory Guide for Intermediate Hosts of Schistosomiasis in the Americas" was distributed to a selected group of experts for review before final editing and publication.

PAHO/R

AMRO-0902 (-275), Chagas' Disease

Objective: To assist the Governments in the study of the epidemiological characteristics of Chagas' disease, its prevalence, and practical measures to control this disease.

Probable duration: 1960-

Assistance provided: Advisory services by Headquarters staff.

Work done: Complement-fixation reagents were sup-

plied to the countries for the laboratory diagnosis of Chagas' disease and for surveys aimed at assessing its prevalence in the Hemisphere.

Tripanosoma cruzi antigen was sent to: Argentina, 30 ml; El Salvador, 15 ml; Guatemala, 35 ml; Paraguay, 40 ml; and Perú, 50 ml (260 ml were distributed in 1964 to Argentina, Guatemala, México, Paraguay, and Perú).

AMRO-0908, Symposium on Onchocercosis

Objective: To exchange ideas and experiences in order to gain a better knowledge of the problem of onchocercosis in the Americas.

Place and duration: Guatemala City, Guatemala; 2-3 December 1965.

Assistance provided: 5 temporary advisers to cooperate in organizing the symposium.

Work done: The Organization cooperated in this symposium conducted by the Government of Guatemala; the recommendations made by the symposium are aimed at coordinating research on onchocercosis and control or eradication programs relating to it in the countries of the Americas.

PAHO/R

AMRO-2100 (-39), Environmental Sanitation

Objective: To hold annual meetings of the Advisory Committee on Environmental Sanitation in order to evaluate sanitation work and plan future activities accordingly.

Probable duration: 1958-

Assistance provided: Organization of the meetings of the Committee.

Work done: A Regional Conference on Water Supply in the Americas was held from 18 to 20 October in lieu of the annual meeting of the Committee. It was attended by more than 30 persons from various international agencies and institutions, including 10 short-term consultants who presented papers, or made comments on papers regarding the status of the water supply program in the Americas.

After the Conference, a group of 7 advisers met for 1 day to review other environmental sanitation activities in which the Organization participates. The Conference prepared a report with recommendations, which was published and distributed among the countries of the Hemisphere.

PAHO/R

**AMRO-2101 (-204), Sanitary Engineering
(Zone I)**

Objective: To collaborate with the countries and territories of Zone I in improving the organization of the environmental sanitation services of the Ministries of Public Health; to give technical advice to the agencies responsible for water supply and sewerage services, rural housing programs, refuse collection and disposal, air and water pollution control, and industrial hygiene; and to cooperate with universities and other institutions in the education and training of professional and auxiliary personnel for sanitation work.

Probable duration: 1960.

Assistance provided: 1 sanitary engineer and secretarial services.

Work done: The promotion of environmental sanitation activities was continued, and assistance was provided for the planning and development of programs in the countries and territories of Zone I. In Venezuela assistance was provided to the Ministry of Health in matters dealing with water supplies in rural areas, in housing, and in industrial hygiene; and to the National Institute of Sanitary Works, in urban water supplies, sewage disposal, and water pollution control. The population with water service in Venezuela in 1965 was well over 5,888,269, or 72% of the country's total population.

PAHO/R

**AMRO-2102 (-205), Sanitary Engineering
(Zone II)**

Objective: To collaborate with the Governments of the countries of Zone II in improving the organization of the environmental sanitation services of the Ministries of Public Health; to advise the agencies responsible for water supply and sewerage services; and to cooperate with universities and other institutions in the education and training of professional and auxiliary personnel for sanitation work.

Probable duration: 1960.

Assistance provided: 1 sanitary engineer and secretarial services.

Work done: Advisory services and assistance were given through the staff of all projects in which the Organization participates in the countries of the Zone.

Special assistance was given particularly in México, in regard to its water supply program and those of education and training in sanitary engineering, and the potable water section of the Ministry of Hydraulic Resources was reorganized to bring it up to date with

current trends in the field of water supply. In regard to water supplies in rural areas of the country, assistance was again given to the Building Committee of the Ministry of Public Health and Welfare, a program to build 370 systems had been planned and 248 of them were underway and will benefit a population of 174,000.

In the matter of education and training the adviser helped to orient the programs of regular courses and short courses to be given at the National University of México and the University of Nuevo Leon in Monterrey; he also helped to prepare a request to be submitted to the United Nations Special Fund for the establishment of the Sanitary Engineering Research and Training Center in México City.

PAHO/R, WHO/R

**AMRO-2103 (-206), Sanitary Engineering
(Zone III)**

Objective: To collaborate with the Governments of the countries of Zone III in improving the organization of the environmental sanitation services of the Ministries of Public Health; to advise the agencies responsible for water supply and sewerage services; and to cooperate with universities and other institutions in the education and training of professional and auxiliary personnel for sanitation work.

Probable duration: 1960.

Assistance provided: 1 sanitary engineer and secretarial services.

Work done: The administrative organization of the National Water Supply and Sewerage Service of Honduras and of the Water Board of Managua, Nicaragua, was analyzed and some changes were introduced. An agreement was signed providing for similar services to be given to the National Water Supply and Sewerage Services Administration of El Salvador, and the bases for similar services to Panamá were studied.

All countries of the Zone, except for British Honduras, conducted programs for the expansion and improvement of water supplies in urban localities, priority being given to the capital cities. The rural water supply programs already begun or being financed will benefit 434 communities with an estimated population of 301,746.

Assistance was given in submitting requests to the United Nations Special Fund for research projects on ground water in Costa Rica and El Salvador, for which the plans of operation were being formulated.

In Guatemala assistance was given to a graduate

course in sanitary engineering, held at the University of San Carlos. Under the subject of financing, the course included a series of talks on water rates.

Assistance was also given in the environmental sanitation training being given in each of the countries of the Zone.

PAHO/R, WHO/R

AMRO-2104 (-207), Sanitary Engineering (Zone IV)

Objective: To collaborate with the Governments of the countries of Zone IV in improving the organization of the environmental sanitation services of the Ministries of Public Health; to advise the agencies responsible for water supply and sewerage services; and to cooperate with universities and other institutions in the education and training of professional and auxiliary personnel for sanitation work.

Probable duration: 1960-

Assistance provided: 1 sanitary engineer and secretarial services.

Work done: Advisory services were continued to specific sanitary engineering projects in the countries of the Zone and to Ministries of Public Works or water and sewerage authorities responsible for such programs. The establishment of a revolving fund was promoted in Colombia to ensure the continuity of water supply programs in rural areas. In Ecuador assistance was given to the municipal entities of Quito and Guayaquil. In Perú, in addition to promoting rural water supply programs, assistance was given to the Corporación Sanitaria of Lima and to that of Arequipa in solving technical and administrative problems.

The Organization also helped university, public health, and public works authorities to organize and conduct intensive short courses (see AMRO-6400 and the pertinent country project).

PAHO/R

AMRO-2106 (-209), Sanitary Engineering (Zone VI)

Objective: To collaborate with the Governments of the countries of Zone VI in improving the organization of the environmental sanitation services of the Ministries of Public Health; to advise the agencies responsible for water supply and sewerage services; and to cooperate with universities and other institutions in the edu-

cation and training of professional and auxiliary personnel for sanitation work.

Probable duration: 1960-

Assistance provided: 1 sanitary engineer and secretarial services.

Work done: Assistance was given in the conduct of general programs of environmental sanitation which are underway in the countries of the Zone and which form part of the integrated public health programs. In Argentina assistance was continued to the Ministry of Public Health in the formulation of a water supply program for rural communities, for which the Ministry obtained a loan from the Inter-American Development Bank in the amount of \$5 million. Assistance was also provided to the General Administration of Sanitary Works of the Nation in the preparation of a draft agreement to cover the cooperative services provided by the Organization. Steps were taken in Chile and in Uruguay to sign agreements by virtue of which the Organization would give more assistance to water supply programs underway. In Paraguay assistance continued to be given to the Ministry of Public Health and to the National Autonomous Service of Sanitary Works, both of which obtained increases in the amounts allocated for making definitive studies of communities lacking water supply.

In the fields of education, training, and research, assistance was furnished to the School of Sanitary Engineering of the National University of Buenos Aires, the engineering and public health schools of the University of Chile, and the School of Engineering and Surveying of the University of Uruguay.

PAHO/R

AMRO-2107 (-95), Environmental Sanitation (Caribbean Area)

Objective: To give technical advice for the strengthening of sanitation departments under the Ministries of Health or the creation of such departments where they do not exist; to collaborate in environmental sanitation activities, through the investigation and evaluation of existing conditions and by providing technical advice during the development of extensive sanitation programs in the countries and territories of the Caribbean Area.

Probable duration: 1956-

Assistance provided: 1 sanitary engineer, 1 sanitation inspector, 1 short-term consultant, and advisory services by Zone I Office personnel.

VIII. PROJECT ACTIVITIES

Work done: Through June 1965 the latrine construction program showed the following results: Barbados: 10,000 originally planned; 601 new units built; 9,451 latrines installed since construction began in 1959, or 94.6% of global target. Grenada: 10,000 originally planned; 304 new units built; 8,255 latrines installed since construction began in 1960, or 82.6% of global target. Montserrat: 3,000 originally planned; 172 new units built; 402 latrines installed since construction began in September 1964, or 13.4% of global target. St. Kitts: 10,000 originally planned; no funds were available from April 1964 to June 1965, at which time the number of latrines installed since construction began in June 1956 was 3,811, or 38.1% of global target (casting and installations were again resumed in July 1965). St. Lucia: 10,000 originally planned; 337 new units built; 7,989 latrines installed since construction began in April 1959, or 79.9% of global target. St. Vincent: 10,000 originally planned; 465 new units built; 9,045 latrines installed since construction began in March 1959, or 90.4% of global target. Trinidad: 80,000 originally planned; 5,032 new units built; 66,447 latrines installed since construction began in August 1957, or 83.1% of global target.

Training of local personnel in the sanitation departments received due consideration and, with financial assistance from UNICEF, 11 senior public health inspectors were trained in 3 intensive courses. Technical collaboration was begun in Antigua, Barbados, Dominica, Grenada, St. Kitts, St. Lucia, and St. Vincent. St. Lucia organized an islandwide water and sewerage authority.

PAHO/R, WHO/UN-TA UNICEF

AMRO-2108 (-13), Seminar on Sanitary Engineering (Zone III)

Objective: To study the problems of greatest interest in water supply, excreta disposal, and water course pollution, together with the officials responsible for conducting related programs in the countries of Zone III.

Place and duration: Guatemala City, Guatemala; 28 November-4 December 1965.

Assistance provided: Travel costs and per diem for 10 participants.

Work done: At the V Seminar on Sanitary Engineering for Central America and Panamá the following 2 items were discussed: "Status of the Water Supply Programs in the Countries of Central America and Panamá," and "Water Course Pollution Control Programs." The

Seminar was attended by 4 participants from Costa Rica, 13 from El Salvador, 4 from Honduras, 5 from Nicaragua, 8 from Panamá, and 53 from Guatemala; 7 came from various institutions, and 13 were officers of the Pan American Sanitary Bureau, adding up to 107 participants.

PAHO/R

AMRO-2109 (-234), Sewage Disposal and Water Pollution Control

Objective: To advise the Governments in the planning of programs for the construction of sewerages and sewage treatment plants and in the solution of specific problems regarding water-course pollution.

Probable duration: 1962-

Assistance provided: Short-term consultants.

Work done: The consultants provided special services on problems relating to sewerage systems, sewage treatment, industrial wastes, and pollution of bodies of water in Brazil (Pôrto Alegre, Rio Grande do Sul) and in Curaçao, Grenada, Guatemala, Perú (Lima) and Venezuela (Caracas).

In compliance with Resolution XXXV of the XVI Meeting of the Directing Council of PAHO, which asked that appropriate attention be given to requests for assistance with water pollution problems, a consultant began to visit several countries of the Americas, in December, for the purpose of studying the possibilities, facilities, and interest of the Governments in establishing a regional research and training center for water pollution.

A PAHO official presented a paper on "Water Course Pollution Control Programs" (in various countries of the world) at the V Seminar on Sanitary Engineering for Central America and Panamá (see AMRO-2108).

PAHO/R

AMRO-2110 (-236), Refuse and Garbage Disposal

Objective: To advise Governments on appropriate methods of garbage collection and waste disposal and on the organization and administration of the pertinent municipal services.

Probable duration: 1961-

Assistance provided: Advisory services by technical staff at Headquarters, Zone Offices, and projects.

Work done: Advisory services were given to the Intermunicipal Committee for the Control of Water and

Air Pollution of São Paulo, which represents 5 of the municipalities surrounding the metropolitan area of São Paulo, one of the most important industrial areas of Brazil, as well as to the pertinent authorities in the city of São Paulo regarding the serious problems involved in garbage collection and disposal. Some of the more important recommendations contained in the pertinent reports were being put into effect. Advisory services were given by Headquarters staff to Santo Domingo, Dominican Republic, to reduce the high fly population resulting from indiscriminate disposal of local solid refuse. As the result of a visit by a consultant to San Juan, Argentina, at the end of 1964, assistance was given in 1965 to the School of Sanitary Engineering of Buenos Aires in connection with a project for the final disposal of refuse in San Juan. Assistance continued to be given in the planning and construction of 2 incinerators for the disposal of solid refuse in Caracas, Venezuela.

AMRO-2111 (-277), Manual on School Sanitation

Objective: To advise the Governments on the planning and design of sanitary installations for schools; and to prepare a manual on this subject.

Probable duration: 1962-

Assistance provided: Editing and translating services by Headquarters personnel.

Work done: The comments received were incorporated into the Spanish version, but publication of the English version was pending a final review of both versions.

AMRO-2200 (-187), Water Supplies

Objective: To advise interested countries on the planning, financing, and carrying out of national water supply programs and on the organization and administration of central and local water supply and sewerage authorities.

Probable duration: 1959-

Assistance provided: 2 water-supply design specialists, 1 administration and financing specialist, and advisory services by Headquarters, Zone Offices, and country projects personnel; and equipment and supplies.

Work done: Advisory services and assistance were given to all interested countries and territories.

Cooperation with the countries and international loan agencies, especially the Inter-American Development Bank, in the preparation and submittal of requests for

financing new water supplies or the expansion of existing systems resulted, up to the end of the year, in loans in the amount of some \$350 million and investments on the part of Governments exceeding \$600 million, which will benefit an estimated population of 42.5 million inhabitants.

A Regional Conference on Water Supply in the Americas was held in Washington, D.C., from 18 to 20 October for the purpose of assessing the progress made during the first half of the Alliance for Progress decade. It was attended by 63 experts from 14 countries of the Hemisphere and 3 from other Regions, as well as by 7 PAHO engineers and other officials, and representatives of the OAS, IADB, IBRD, Alliance for Progress, and Inter American Association of Sanitary Engineering (AIDIS). According to the data collected, at the end of 1965 the program of water supply provision in urban areas was further advanced than had been anticipated in 14 of 19 countries, but in the rural areas this was true for only 2 countries.

PAHO/SFHP, PAHO/CWSF, WHO/R

AMRO-2203, Water Supply (Zone III)

Objective: To stimulate, through community development techniques, the potential of rural communities and to induce them to cooperate in the construction, operation, and maintenance of locally built water supplies.

Probable duration: 1964-

Assistance provided: 2 specialists in community development, 1 specialist in administrative methods, and consultant services by the adviser assigned to project AMRO-2212.

Work done: The Organization participated in a Seminar on Environmental Sanitation held for health officials, from 2 to 7 August in Belize, British Honduras.

Advisory services were given to the National Water Supply and Sewerage Services (SNAA) of Costa Rica in establishing a Public Relations and Community Education Office. A training course in community development was given in November for the social workers of SNAA and for health officials of the Ministry of Public Health. Assistance was given with a training course for nutritionists of the Ministry of Public Health and a course on public health program administration which was held at the Central American School of Higher Education in Public Administration for personnel from the area and from Panamá.

In El Salvador the Organization assisted in teaching

VIII. PROJECT ACTIVITIES

the course for supervisors of health officials of Central America and Panamá which was given by the Ministry of Public Health and Social Welfare. The Organization also advised on the planning of an Office of Community Development in relation to the building of water supplies.

The Organization helped the School of Public Health Training of Guatemala in a course for health officials.

In Honduras, a section responsible for community development activities in connection with water supply was established. The Organization helped to prepare and conduct a training course for social workers and another course for health officials, both of which were given by the Ministry of Public Health, and continued advising on inservice training.

Advisory services on the establishment of an Office of Community Development relating to the construction of water supply were provided in Panamá.

**Community Development
Foundation, Inc.**

WHO/R

AMRO-2208 (-50), Water Fluoridation

Objective: To furnish advisory services on methods of water fluoridation for the prevention of dental caries.

Probable duration: 1961.

Assistance provided: 1 short-term consultant and advisory services by personnel of Headquarters, Zone Offices, and country projects.

Work done: A request for financial assistance to promote the fluoridation of drinking water was prepared and submitted to the W. K. Kellogg Foundation (see also Brazil-2200).

The Organization participated in a round-table discussion on water fluoridation, held by the Brazilian Section of the Inter-American Association of Sanitary Engineering in the city of Curitiba and attended by over 600 sanitary engineers of the country. Assistance was also given in teaching water fluoridation at a short course on water treatment held in Pôrto Alegre from 20 September to 2 October and attended by 22 engineers.

PAHO/R

AMRO-2210, Regional Conference on Water Supplies in the Americas

Objective: To conduct a meeting of experts in water supply and education programs, in order to gather data

and evaluate the progress achieved and exchange opinions on the present and future activities of the program.

Duration: Washington, D.C., U.S.A.; 18-20 October 1965.

Assistance provided: 12 temporary advisers and consultant services by the environmental sanitation personnel of Headquarters.

Work done: 63 delegates of 14 countries participated in the Regional Conference on Water Supplies in the Americas, as well as representatives from the Inter-American Development Bank, the International Bank for Reconstruction and Development, and the Public Health Service and Agency for International Development, both of the United States of America. The temporary advisers presented 9 working papers on the water supply programs in the Americas. A report on the Conference was prepared for publication and distribution to the agencies and persons connected with the program.

PAHO/SFHP

AMRO-2212 (-377), Rural Water Supplies

Objective: To assist the countries to meet the goal for the provision of rural water supplies set by the Charter of Punta del Este, by furnishing the countries with advice on: (a) the planning, financing, and carrying out of national plans for rural water supply programs, emphasizing community organization and participation and the establishment of national revolving funds; and (b) the development of the administrative structure needed for carrying out accelerated programs to meet the growing needs of people in the rural areas.

Probable duration: 1964-

Assistance provided: 1 specialist in community organization and participation, and advisory services by technical staff of Headquarters, Zone Offices, and country projects; and equipment and supplies.

Work done: The Organization gave technical assistance in the preparation of national or regional plans for rural water supplies to most of the countries of the Hemisphere, including Argentina, Colombia, Jamaica, México, and Perú; it also helped to prepare and submit loan requests to the Inter-American Development Bank. Up to the end of the year, IADB had approved loans for water supply programs in the rural areas of Argentina, Brazil, Costa Rica, Chile, El Salvador, Perú, and Venezuela in an amount of over \$30 million, with national contributions amounting to approximately the same figure.

The Organization furnished advisory services in the matter of community participation to Argentina, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, and Panamá.

PAHO/R, PAHO/CWSF, WHO/R

AMRO-2213 Studies and Investigation of Water Resources

Objective: To collaborate with the Economic Commission for Latin America (United Nations) in a study of Latin America's water resources, particularly with a view to the provision of adequate water supplies.

Probable duration: 1965-

Assistance provided: 1 specialist in water supply and waste-water disposal, stationed at ECLA headquarters in Santiago, Chile.

Work done: Reports on ground water in Argentina and on water supplies in Perú were reviewed.

Assistance was provided in the preparation of preliminary reports on preinvestment projects, to be submitted to the United Nations Special Fund, on the multiple use of water in the central region of Argentina; in Maipo, Chile; in Monterrey, México; and in Tuy, Venezuela.

In the Dominican Republic a mission collected the necessary information for a study of the present situation and an estimate of future needs in the matter of water supply and waste-water disposal.

Assistance was also given to the mission which studied the water resources of Uruguay, where field work was completed and draft reports on the quality of surface water, ground water, and water for industrial use as well as on waste-water disposal were prepared; the draft report on community water supplies was being prepared.

WHO/UN-TA

ECLA

AMRO-2300 (-98), *Aedes aegypti* Eradication

Objective: To advise Jamaica, Trinidad and Tobago, and the British, French, and Netherlands Territories in the Caribbean on *A. aegypti* eradication.

Probable duration: 1950-

Assistance provided: 1 medical adviser and 1 entomologist; and equipment and supplies.

Work done: An assessment was made of the campaigns in Barbados, Cuba, British Guiana, St. Lucia, Surinam, and Venezuela, and of the treatment employed

in the U.S. Virgin Islands, and Puerto Rico. Assistance was given to the Government of El Salvador in the reorganization of its campaign. The surveillance service of Guatemala was reviewed. In Jamaica the possibility of organizing an insect control program to include *A. aegypti* eradication was studied.

The Organization loaned the adviser to act as short-term consultant and study the problem of *A. aegypti* in Bangkok, Thailand, and advise WHO regarding the expansion of the pilot project of mosquito control which was underway in that city.

At the *A. aegypti* laboratory of Kingston, Jamaica, studies aimed at solving the problem of mosquito resistance to chlorinated insecticides included the following: determination of the susceptibility of *A. aegypti* strains—from the Caribbean, Northern South America, and El Salvador—to various insecticides; assessment of new compounds as possible substitutes for chlorinated insecticides in mosquito eradication work; a study of the capacity of *A. aegypti* strains resistant to chlorinated insecticides to develop resistance to new compounds now under study.

PAHO/R

AMRO-2301 (-8), *Aedes aegypti* Eradication (Caribbean Area)

Objective: To advise Jamaica, Trinidad and Tobago, and the British, French, and Netherlands Territories in the Caribbean on *A. aegypti* eradication.

Probable duration: 1950-

Assistance provided: 1 medical adviser and 3 sanitation inspectors; and equipment and supplies.

Work done: Technical guidance and supervision continued to be given to the *A. aegypti* eradication campaigns in the areas covered by the project.

PAHO/R, WHO/UN-TA

AMRO-2400 (-62), Public Health Aspects of Housing and Urbanization

Objective: To encourage health authorities to take part in housing and urbanization programs, particularly those which use self-help and mutual aid; and to advise the countries regarding the establishment of health standards for housing and urbanization and the adoption of measures to facilitate the prompt and proper execution of those programs.

Probable duration: 1962-

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Assistance provided: 1 adviser in housing and urbanization, 1 short-term consultant, and advisory services by personnel of Headquarters, Zone Offices, and country projects; and equipment and supplies.

Work done: The adviser, assigned to the Economic Commission for Latin America to cooperate in the programs carried out by that agency, was a member of the missions which ECLA sent to Argentina, Brazil, and Uruguay to study housing conditions. Together with ECLA staff, the adviser prepared a first draft of a pilot project, on an Experimental Neighborhood Unit, which will be carried out by the Government of Perú in cooperation with the UN, ECLA, IADB, and PASB. The short-term consultant and the sanitary engineers of Zone III made a study of the housing and urbanization situation in Central America and Panamá; their report was submitted to the ECLA Subcommittee on Housing and Urbanization which met in Guatemala in December.

Under the auspices of the OAS, a committee was established, in Washington, D.C., with representation of all international agencies interested in the housing and urbanization problem in Latin America. The Organization was also represented at a conference on "The Role of the City in Modernizing Latin America," which was held at Cornell University, Ithaca, New York, from 16 to 19 November.

Assistance was again given in the organization of a course on housing planning and of a seminar on the health aspects of housing, which are to be held in 1966 at ECLA headquarters in Santiago, Chile, and at the University of Buenos Aires in Argentina, respectively. A Seminar on Environmental Sanitation in Shanty Towns was held in Maracaibo, Venezuela, from 22 to 26 November, and was attended by 57 officials and other professional staff of the Ministries and agencies responsible for and interested in the matter.

PAHO/R

ECLA

AMRO-3100 (-281), Planning

Objective: To assist the Governments in the formulation of national health plans and the training of planners.

Probable duration: 1961.

Assistance provided: 1 short-term consultant, 6 temporary advisers, and travel and per diem for a lecturer for the course for health planners held at Johns Hopkins University; and equipment and supplies for training in planning.

Work done: A colloquium of economists with 5 participants was held in Washington, D.C., U.S.A., on 26 February, to provide guidance on the relationship between health and economic development and on fruitful areas for research.

A training course for health planners, with financial support from AID, was held at the Johns Hopkins University, Baltimore, Maryland, in April-June. In addition to 2 WHO staff members, 1 PAHO staff member, and 5 special students from 4 countries, PAHO, WHO, and AID fellows following the regular MPH curriculum also participated.

A training course for health planners was held in Santiago, Chile, in September-December, in collaboration with the Latin American Institute for Economic and Social Planning. Trainees included 26 senior health officials from 13 American countries and 6 staff members of the Organization.

**Inter-American Economic and
PAHO/R Social Planning Institute**

AMRO-3101, National Health Planning (Zone I)

Objective: To collaborate with the Governments of the countries and territories of Zone I in the formulation of national health plans and the training of planners.

Probable duration: 1965.

Assistance provided: 1 full-time adviser in health planning, stationed in Trinidad, 3 short-term consultants, and travel and per diem for 14 temporary advisers; equipment and supplies; and other costs of the meeting of the Study Group.

Work done: A Study Group on Health Planning, comprising senior health planners from 7 countries, 6 staff members of PAHO/WHO and 1 of the Latin American Institute for Economic and Social Planning (Santiago, Chile) as well as 1 observer from the Johns Hopkins University, met from 1 to 6 February in Puerto Azul, Venezuela. The Group reviewed recent experience in health planning in Latin America and in their report recommended measures to help fulfill the health objectives established in inter-American agreements.

A course in health planning was held in Port-of-Spain, Trinidad, in July-August, and was attended by 35 Trinidadian health officials at various levels and by 1 medical officer and 1 statistician from Jamaica.

PAHO/R, WHO/R Government of Venezuela

AMRO-3103 (-325), Planning (Zone III)

Objective: To collaborate with the Governments of the countries of Zone III in the formulation of national health plans and the training of planners.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and advisory services by the Country Representative in the respective countries.

Work done: The consultant assisted in the development of the Costa Rica national health plan.

PAHO/R**AMRO-3104 (-318), Planning (Zone IV)**

Objective: To collaborate with the Governments of the countries of Zone IV in the formulation of national health plans and the training of planners.

Probable duration: 1963-

Assistance provided: 1 adviser on health planning.

Work done: Work on the national health plan of Perú was completed; and teaching assistance in connection with the course for health planners held at the Latin American Institute for Economic and Social Planning in Santiago, Chile, was provided (AMRO-3100).

PAHO/R**AMRO-3106 (-322), Planning (Zone VI)**

Objective: To collaborate with the Governments of the countries of Zone VI in the formulation of national health plans and the training of planners.

Probable duration: 1963-1967.

Assistance provided: 1 adviser on health planning.

Work done: The national health plan of Chile was drawn up, and attention was concentrated on administrative aspects of plan implementation, including special training of accountants and administrators in the use of the program budget technique. Teaching assistance was provided in Chile in connection with the international course for health planners (AMRO-3100) held at the Inter-American Economic and Social Planning Institute and, simultaneously, in a national course in which some 70 Chilean health officials were trained.

PAHO/R**AMRO-3107 (-346), Public Health Administration (Caribbean Area)**

Objective: To assist the Governments of the Caribbean Area in the analysis of current health problems,

evaluation of resources, and preparation of plans of action to insure maximum results from the economic and social resources available; and to assist in the integration, implementation, and evaluation of public health programs within their development plans.

Probable duration: 1963-1967.

Assistance provided: 1 medical officer, 1 administrative methods officer, and consultant services by Headquarters staff; equipment and supplies; and costs of the seminar.

Work done: A study was made of problems of administration and operation of the health services of Antigua and St. Lucia. The infant death rate in Dominica, Montserrat, and St. Lucia fell from levels of 100 per 1,000 live births in recent years to less than 50 per 1,000; in St. Vincent there was a similar remarkable fall—to a rate of 56 per 1,000 for the first half of 1965. In Trinidad and Tobago an assessment was made of the organizational structure and administrative services of the Ministry of Health and Housing, resulting in a program of reorganization in accordance with the health plan. Preliminary plans were made to develop a Division of Administrative Services under a unified command, and orientation in planning and supervision was provided to supervisory staff at the central, regional, and unit levels. Committees on nutrition and child health were set up in nearly all the territories. Considerable activity was underway in planning for health services and in the improvement of administrative procedures.

The Second Seminar on Organization and Administration of Health Services for the Caribbean Area was held in Port-of-Spain, Trinidad, from 14 to 19 November. Twenty-six participants represented 14 countries and territories of the Americas. Others included officials of the Organization and observers from the Technical Assistance Board and the Food and Agriculture Organization of the United Nations.

PAHO/R, WHO/R**AMRO-3108 (-307), Field Office at El Paso, Texas**

Objective: To stimulate joint study and planning of health activities along the México-United States of America Border; and to facilitate the exchange of epidemiological information.

Probable duration: 1952-

Assistance provided: 1 medical officer, 1 engineer, 1 veterinary, 1 short-term consultant, and secretarial

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personnel; equipment and supplies; and costs of the Meeting.

Work done: The El Paso Field Office continued to do liaison work between México and the United States of America in respect to health activities along the border area, especially as regards the campaign against communicable diseases such as tuberculosis, venereal diseases, and rabies. Efforts were also made to coordinate activities in environmental sanitation, nursing, and other health work.

Acting as the secretariat, the Field Office organized the XXIII Annual Meeting of the United States-México Border Public Health Association, held in Los Angeles, California, in June and attended by over 400 members. During that meeting resolutions on important health problems of particular interest to the border area were discussed and approved. Binational Health Councils and Binational Committees on specific subjects operated in 9 twin cities along the border. These Councils and Committees were especially interested in exchanging information between the 2 countries and in coordinating the activities along the entire border.

PAHO/R

AMRO-3110 (-283), Coordination of International Research

Objective: To stimulate the development and implementation of a biomedical and health research program related to the health goals of the Americas; to promote collaboration and communication among scientists; and to accelerate the training of research workers in the Western Hemisphere.

Probable duration: 1962.

Assistance provided: 2 medical advisers, 1 scientist, 8 short-term consultants, secretarial services, travel and per diem for the temporary advisers constituting the Advisory Committee on Medical Research and other costs of the ACMR meeting.

Work done: The PAHO Advisory Committee on Medical Research held its Fourth Meeting from 14 to 18 June and submitted a report containing recommendations for further developing the Organization's expanded program. As part of its work, the Committee reviewed the conclusions and recommendations of the 6-member study group constituted in 1964 to examine the substance, structure, and processes of national science policies in a representative sample of the countries of the Hemisphere (see *PAHO Scientific Publication* 119).

Other 1965 activities carried out under this project included a 1-day conference (Washington, D.C.; 7 January) to provide a forum for the exchange of information on activities by institutions interested in research and training with regard to population dynamics; and a meeting (Cuernavaca, México; 5-9 October) of 15 investigators from Brazil, Chile, Colombia, Ecuador, México, Perú, United States of America, and Venezuela to review progress and plan more studies on research in endemic goiter (see also AMRO-4213).

Technical advisory services were furnished to the Ministry of Social Welfare and Public Health of Argentina, on needs and opportunities for research in public health and to recommend a research program in the country; and to Argentina, Brazil, Chile, México, and Venezuela on the development of a research and training program in immunology in Latin America.

Discussions were held in Colombia, Guatemala, México, and Perú regarding potential collaborating investigators for the PAHO/WHO program in nutritional-anemia research; and in Argentina, Chile, and México regarding the development of survey studies for evidence of strains of epidemic typhus in domestic animals.

Argentina, Brazil, Chile, Colombia, Uruguay, and Venezuela were visited to consider the advisability and possibility of establishing a regional medical library center in South America; the visit resulted in recommendations and a specific proposal for its establishment.

PAHO/R

AMRO-3114, Study on Migration of Trained People from Latin America

Objective: To determine the relevant facts associated with the international migration of Latin American scientists; to analyze the forces at work; and to suggest practical and acceptable measures to moderate the rate of migration.

Duration: July 1965-June 1966.

Assistance provided: 2 short-term consultants.

Work done: The members for the study group were appointed. The group's report—after preliminary analysis, comment, and consensus—was scheduled for presentation to the Fifth Meeting of the PAHO Advisory Committee on Medical Research.

PAHO/R

AMRO-3116, International Transportation of Human Remains

Objective: To draft the bases for regulations for the transportation of human remains in the Americas, in accordance with Resolution XXXVI of the XVI Meeting of the Directing Council of PAHO.

Probable duration: 1965-1966.

Assistance provided: Costs of the Meeting.

Work done: An advisory group met in Washington, D.C., in August to analyze the information supplied by the Member Countries on the legislation in force in the Americas on the international transportation of human remains. The group's report was studied by an Expert Committee which met from 13 to 15 December. This Committee was composed of members of the public health or consular services of 7 American countries and representatives of the Technical Unit on Tourism of the Organization of American States and of the National Funeral Directors Association of the United States of America. The final report prepared by the Expert Committee, which included the bases for the regulations, as requested, was forwarded to the Member Governments for review and comment.

PAHO/R**AMRO-3201 (-289), Nursing (Zone I)**

Objective: To collaborate with the countries and territories of Zone I in the development of basic aspects of research, planning, organization of services, and education of professional and auxiliary nursing and midwifery personnel.

Probable duration: 1963.

Assistance provided: 1 nurse adviser and secretarial services.

Work done: Orientation and advice were provided to the countries and territories in the broad fields of nursing services and education through projects Jamaica-4300 and -6301, Trinidad and Tobago-3200, Venezuela-4300 and -6300, West Indies-3100, -3200 and -3201, and AMRO-3107.

In addition to the development of new projects and assistance to existing ones, the nurse adviser provided consultant services to British Guiana, French Guiana, Grenada, Martinique, St. Vincent and Surinam, on subjects not covered by specific projects.

PAHO/R**AMRO-3202 (-290), Nursing (Zone II)**

Objective: To collaborate with the Governments of the countries of Zone II in the development of basic aspects of research, planning, organization of services, and education of professional and auxiliary nursing and midwifery personnel.

Probable duration: 1963.

Assistance provided: 1 nurse adviser and secretarial services.

Work done: Projects Cuba-3100 and -6300, Dominican Republic-3100 and -6300, Haiti-3100, and México-3101 and -6300 were provided with consultant services.

PAHO/R**AMRO-3203 (-291), Nursing (Zone III)**

Objective: To collaborate with the Governments of the countries of Zone III in the development of basic aspects of research, planning, organization of services, and education of professional and auxiliary nursing and midwifery personnel.

Probable duration: 1963.

Assistance provided: 1 nurse adviser and secretarial services.

Work done: Projects British Honduras-6300, Costa Rica-3100, El Salvador-3100, Guatemala-3100 and -6300, Honduras-3100 and -6300, Nicaragua-3100, and Panamá-3100 were provided with consultant services.

PAHO/R**AMRO-3204 (-292), Nursing (Zone IV)**

Objective: To collaborate with the Governments of the countries of Zone IV in the development of basic aspects of research, planning, organization of services, and education of professional and auxiliary nursing and midwifery personnel.

Probable duration: 1952.

Assistance provided: 1 nurse adviser and secretarial services.

Work done: Projects Bolivia-3100 and -3101, Colombia-3100, Ecuador-3100 and -6300, and Perú-3100 and -6300 were provided with consultant services. In addition, efforts were initiated in Bolivia to establish programs of nursing at the university level, and in Colombia a 3-day seminar in the organization of inservice training programs was held for supervisors and chief nurses.

PAHO/R

AMRO-3206 (-294), Nursing (Zone VI)

Objective: To collaborate with the Governments of the countries of Zone VI in the development of basic aspects of research, planning, organization of services, and education of professional and auxiliary nursing and midwifery personnel.

Probable duration: 1963-

Assistance provided: 1 nurse adviser and secretarial services.

Work done: In Argentina, in 5 hospitals in the provinces of El Chaco, Mendoza, San Juan, and Tucumán, considerable emphasis was placed on the improvement of nursing services through the establishment of nursing departments. This was complemented with the strengthening or creation of nursing departments at the provincial level. The elaboration and application of the norms incorporated in organizational and procedure manuals, the reorganization of the records systems and of special services—such as the outpatient department and pediatric ward in one hospital in San Juan—were in various phases of development. The incorporation of public health nursing activities into present programs was progressing slowly.

Through inservice training the preparation of 86 nurses and 95 nursing auxiliaries was improved. A 10-week course in public health for midwives was held in Mendoza with 30 students.

In Paraguay assistance was given to the midwifery course for nurses, with 10 nurses enrolled. Short inservice training courses prepared 19 nursing auxiliaries in communicable diseases, and 20 midwives for broader functions in health services. Two seminars for nurses were held, one of them related to the 1-year obligatory service program in rural areas for students in nursing and midwifery after completion of their formal education, which was attended by 26 participants.

Norms for communicable disease programs were elaborated and goals were set for nursing activities in all the programs. A study in distribution of nursing time and activities in the countries of the Zone was completed; supervision of the services was being slowly increased.

Advisory services were also provided to Argentina-6300 and -6301, Chile-3200, Paraguay-6300, and Uruguay-6100.

PAHO/R**AMRO-3300 (-45), Laboratory Services**

Objective: To cooperate with Governments in the improvement of public health laboratory services and

in establishing new sections in existing laboratories, in the production and control of biological products, and in the expansion or establishment of animal colonies.

Probable duration: 1955-

Assistance provided: Advisory services by Headquarters and Zone Offices personnel; equipment; biological reagents and laboratory animals; and printed material.

Work done: Technical assistance was given to the Governments of Colombia, Ecuador, Nicaragua, and Venezuela, among others, in the planning of new laboratory services; to Panamá, in the evaluation of activities; and to Brazil, for the establishment of fluorescent antibody sections.

Cell lines for tissue cultures were furnished to Argentina, Brazil, and Colombia; and laboratory animals were supplied to Argentina, Chile, México, and the United States of America for the purpose of establishing new colonies. The laboratories of 23 countries and territories were provided with a total of 1,456 biological standards, microbial strains, and reference reagents (the last mentioned representing an increase of 186% over the previous year).

Literature on new laboratory techniques was also provided.

Argentina and Nicaragua joined the international program of syphilis serology evaluation being carried out by CDC.

PAHO/R, WHO/R**AMRO-3301 (-358), Laboratory Services (Caribbean Area)**

Objective: To develop, at the University of the West Indies, in Kingston, Jamaica, a program for training laboratory technicians for English-speaking countries and territories in the Caribbean Area, stressing the importance of laboratory practices in the curative and preventive aspects of medicine.

Probable duration: 1964-1966.

Assistance provided: 1 short-term consultant; and equipment and laboratory supplies.

Work done: A course at the University of the West Indies in April was attended by 7 fellows from Antigua, Bahamas, Barbados, British Honduras (2), Grenada, and St. Vincent.

The consultant visited Antigua, Barbados, Curaçao, Grenada, Montserrat, St. Kitts, St. Vincent, St. Lucia, and Trinidad to make a detailed study on the status of the laboratories. Appropriate recommendations were

made to standardize the work of the laboratories in the area and to establish a system of periodic evaluation and supervision.

PAHO/R

AMRO-3303, Laboratory Services (Zone III)

Objective: To expand the services of the public health laboratories in the countries of Zone III and to establish local laboratories according to the needs and means of the countries, in keeping with the national health plans.

Probable duration: 1965-

Assistance provided: Advisory services by Headquarters personnel; and travel and per diem for the participants in the Seminar on Laboratory Services of the Central American Isthmus.

Work done: The Seminar was held in Managua, Nicaragua, from 22 to 26 June. It was attended by 32 participants from Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panamá, a representative of the Middle America Research Unit (MARU) of the United States Public Health Service, and 3 officials of the Organization. A report was prepared and published, and the resolutions it contained were approved at the X Meeting of Ministers of Public Health of Central America and Panamá, held in Panamá City from 16 to 17 August.

PAHO/R

AMRO-3307 (-76), Vaccine Production and Testing

Objective: To provide vaccine-testing services to vaccine-producing laboratories in the Americas.

Probable duration: 1954-

Assistance provided: Reference laboratory services for the control of products prepared in official laboratories.

Work done: Advice was given to the National Health Institute of Colombia on new procedures for the production and control of whooping cough vaccine and diphtheria and tetanus toxoids.

During the year, the Organization received, for control tests, 19 products prepared in 5 countries of the Hemisphere.

WHO/R

AMRO-3401 (-365), Health Education (Caribbean Area)

Objective: To cooperate with the countries and territories of Zone I in the development of health education activities and the training of personnel, in order to improve and extend public health services.

Probable duration: 1963-

Assistance provided: 1 adviser in health education.

Work done: In order to get acquainted with the problems related to the development of health education activities the adviser visited several islands of the Eastern Caribbean, placing particular emphasis on those—such as Dominica, Grenada, Montserrat, St. Lucia, and St. Vincent—where integrated health programs were underway. In St. Lucia, assistance was given in planning for the teaching of health in primary school through secondary school and the training of teachers on these subjects at the Teachers' Training College.

WHO/UN-TA

AMRO-3407 (-112), Community Development Training Center

Objective: To cooperate with the Community Development Training Center for Latin America (CREFAL) in the health aspects of the training.

Probable duration: 1951-1953; 1961-1970.

Assistance provided: 1 medical adviser.

Work done: A 3-month course (initiated in 1964) for 20 students of CREFAL who had graduated between 1951-1960 and were holding posts in national programs of community development and adult education in the Americas was completed in January.

The thirteenth regular 7-month course, held from February to September, was attended by 60 students (selected from among 146 candidates) with fellowships from the OAS and UNESCO, from the following countries: Argentina, 3; Bolivia, 2; Brazil, 1; Chile, 6; Colombia, 4; Costa Rica, 3; Cuba, 1; Dominican Republic, 1; Ecuador, 3; El Salvador, 3; Guatemala, 3; Haiti, 4; Honduras, 2; México, 9; Nicaragua, 2; Panamá, 2; Paraguay, 3; Perú, 5; and Venezuela, 3. Of these, 34 (56.7%) were engaged in the field of education, 10 (16.7%) in public health, 9 (15%) in agriculture, 2 (3.3%) in social sciences, and 5 (8.3%) in other fields.

A special 6-week course on community development and social and economic development was attended

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by 24 Mexican officials holding senior posts in planning community development programs.

WHO/R **FAO, ILO, OAS, UN, UNESCO**

AMRO-3501 (-157), Health Statistics (Zone I)

Objective: To collaborate with the countries and territories of Zone I for the purpose of improving their vital statistics systems; and to provide technical advisory services on the use of statistical data for health planning and on the statistical aspects of projects.

Probable duration: 1964-

Assistance provided: 1 statistical adviser and 1 short-term statistical consultant; and teaching materials for the training course in health statistics.

Work done: A health statistics course for the Caribbean Area was conducted at the University of the West Indies, at Mona, St. Andrews, Jamaica. The course, developed to provide training in health statistics for persons responsible for the collection of health data and the preparation of reports, was sponsored by the Organization and held in collaboration with the University. Of the 28 students trained, 23 attended with UNICEF fellowships and were from: Antigua, Barbados (2), Dominica, Grenada, Jamaica (10), Montserrat, St. Lucia (2), St. Vincent, St. Kitts, and Trinidad and Tobago (3); the others were from British Guiana, Surinam, and Jamaica (3).

In Jamaica a National Committee on Vital and Health Statistics was formed; and the Health and Manpower Resources Committee of the Ministry of Health collected data relating to hospitals, medical services, public health, vital statistics, and personnel. The St. Thomas pilot project of the Ministry of Health of Jamaica began a study of the feasibility of integrating the curative and preventive insular health services, and, although the studies on health care facilities and the administration of health care were still in the preliminary stages, the portion of investigation dealing with immunization programs was nearing completion. St. Elizabeth parish was selected as a demonstration area for the improvement of civil registration. The Department of Preventive Medicine of the University of the West Indies added the teaching of medical statistics to its curriculum.

A hospital records and statistics service was established in the general hospital in St. Lucia, and an office of health statistics was set up in the office of the medical officer of health. In St. Vincent plans were initiated to establish a National Committee on Vital

and Health Statistics. Surinam sought and received recommendations to improve the organization of its vital and health statistics system. Trinidad and Tobago initiated plans to reorganize the Health Statistics Service.

PAHO/R

UNICEF

AMRO-3502 (-144), Health Statistics (Zone II)

Objective: To collaborate with the Governments of the countries of Zone II for the purpose of improving their vital and health statistics systems; and to furnish technical advisory services on the use of statistical data in national health planning and on the statistical aspects of projects.

Probable duration: 1958-

Assistance provided: 1 statistical adviser.

Work done: Certificates of deaths occurring throughout the Dominican Republic during the 12 months of 1964 were coded, tabulated and analyzed in the Division of Statistics of the State Ministry of Health and Social Welfare in order to provide data for the publication of mortality statistics by age, sex and selected causes and in order to provide some experience and training for the personnel of the Division in the techniques of and procedures used in preparing vital statistics records. The Ministry published a guide to the correct medical certification of death and a manual on the collection of vital statistics. Forms for the reporting of vital events were printed and put in use in the registration area already established in the province of San Cristóbal, which includes 2 municipios and 3 municipal districts containing 72.5% of the population of the province. The decision was taken to teach statistics in the first year of training in the medical school.

The reorganization of the Department of Statistics of the Ministry of Health and Welfare in México was initiated, as were efforts to establish an adequate national system of registration of vital events. In the state of Querétaro the activities of a demonstration project in tuberculosis control were evaluated and the project was reorganized.

WHO/R

AMRO-3503 (-86), Health Statistics (Zone III)

Objective: To collaborate with the Governments of the countries of Zone III for the purpose of improving their vital and health statistics systems; and to furnish

technical advisory services on the use of statistical data in national health planning and on the statistical aspects of projects.

Probable duration: 1955-

Assistance provided: 1 statistical adviser and 1 short-term consultant.

Work done: In Costa Rica plans were underway to establish a training center for personnel engaged in the keeping of hospital medical records. With orientation provided by the short-term consultant, a study was made to improve the medical records of hospitals and health centers in El Salvador, and Guatemala modernized its Department of Biostatistics, obtaining International Business Machines equipment to process vital and health statistics. In April Honduras installed in its Division of Biostatistics IBM equipment to obtain timely tabulation and publication of statistics. In Nicaragua a project for medical certification of death was submitted to the National Congress. The National Directorate of Statistics and Census of Panamá adopted the use of mark-sensing IBM cards.

Three courses were conducted for statistical personnel: in Costa Rica, from 7 to 19 June, for 34 students; in Guatemala, from 2 to 28 August, for 43; and in Honduras, from 5 to 31 July, for 48.

PAHO/R, WHO/R

AMRO-3504 (-143), Health Statistics (Zone IV)

Objective: To collaborate with the Governments of the countries of Zone IV for the purpose of improving their vital and health statistics systems; and to furnish advisory services on the use of statistical data in national health planning and on the statistical aspects of projects.

Probable duration: 1956-

Assistance provided: 1 statistical adviser.

Work done: The Division of Statistics of the Ministry of Social Welfare and Labor of Ecuador developed plans to establish an experimental area in health statistics in the province of Manabí where an integrated health program was being carried out. Reorganization of the statistical services, made possible by an increase of funds, was underway.

In Perú, data on health needs and resources were collected throughout the country for use in developing a National Health Plan. A committee was set up to determine which statistical data should be collected, to make recommendations relating to the organization

and functions of the Statistical Department of the Ministry of Health and Social Welfare, and to coordinate the activities of the various agencies working in the fields of vital and health statistics. A center devoted to the study of population and development was established at the request of the Ministry, and a statistical consultant provided by the Organization assisted in the initial phases. The first national seminar of population and development was held from 5 to 11 December, in Paracas.

Training of statistical personnel was carried out in Colombia, Ecuador, and Perú through inservice training and courses. In Colombia an intermediate-level course in vital and health statistics in which 25 students were trained was held at the School of Public Health in Medellín. In the department of Valle de Cauca a 10-week course for auxiliaries of health centers was planned. Two 3-week courses were being planned by the Cundinamarca departmental Directorate of Health for hospital and health-center statistical auxiliaries. A training manual dealing in detail with the work of auxiliaries was prepared for use in these courses. Standards and forms prepared by the Auxiliary Technical Services of the Ministry of Public Health will also be used as teaching materials as well as more generally in reorganizing statistical departments in general hospitals and in collecting and reporting data.

In Ecuador plans were initiated for training the personnel who will be responsible for carrying out the work of civil registration when the civil registry offices authorized under the newly approved National Civil Registration law are established.

In Perú the health area of Arequipa, in collaboration with the School of Public Health and the Regional Planning Office of the Ministry of Health and Social Welfare, conducted the first course for auxiliaries—using as instructors personnel who had been previously trained at the intermediate level—and trained 27 students from hospitals and health centers. An intermediate-level course was also conducted at the School of Public Health in Lima.

WHO/R

AMRO-3506 (-159), Health Statistics (Zone VI)

Objective: To collaborate with the Governments of the countries of Zone VI for the purpose of improving their vital and health statistics systems; and to furnish technical advisory services on the use of statistical data in national health planning and on the statistical aspects of projects.

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Probable duration: 1959-

Assistance provided: 1 statistical adviser; and equipment and supplies.

Work done: In Argentina, vital statistics systems were instituted in the provinces of Catamarca, La Rioja, and Neuquén; and in the provinces of Buenos Aires, Córdoba, El Chaco, La Pampa, Mendoza, Misiones, and San Juan the system continued meeting the national standards.

The closer coordination between national and provincial health services and between statistical and planning activities of the country resulted in the drafting of a comprehensive national health statistics program. Other important developments were that the needs for statistical personnel at all levels were ascertained and plans were drawn to train 200 intermediate-level statisticians and 2,000 statistical auxiliaries, in regular courses, as well as to provide inservice training to 5,000 auxiliaries.

A wider utilization was being made of the international certificate of death and of the International Classification of Diseases. The National Directorate of Health Statistics was considerably strengthened and a national program of data collection and processing was initiated. A better system of reporting of notifiable diseases was launched in several provinces and the preliminary results show a conspicuous increase in the number of cases reported.

A uniform national reporting system for discharges from governmental hospitals was tried out in the Federal Capital and 10 provinces. Plans call for the system to be extended to the rest of the country, including private hospitals, as soon as programs for training personnel get underway.

More than 100 persons received training at the auxiliary level in 5 courses. Three courses for physicians with a total attendance of 60 were given at the School of Medicine of Buenos Aires.

In Chile the statistical forms of the health services were revised to meet the needs of the National Health Plan, and 160 auxiliaries were trained in short courses organized by 18 instructors previously trained at the intermediate level.

In Paraguay a new system of vital statistics was initiated—new birth and death certificate forms were introduced and procedures of registration were changed in order to overcome the existing under-registration of vital events.

The Government of Uruguay and the Organization signed an agreement to start a national program to improve the registration of health statistics. A course

on statistical analysis was given for research workers at the School of Medicine in Montevideo.

PAHO/R

AMRO-3507 (-266), Regional Development of Epidemiological Studies

Objective: To obtain, through special investigations, accurate and comparable data on causes of death of adults in selected cities of the Americas.

Probable duration: 1961-1966.

Assistance provided: 1 epidemiologist, 1 statistician, and clerical assistance and funds for field investigators to defray local expenses in 11 of the cooperating cities.

Work done: Questionnaires relating to the cause of death of some 42,000 adults in 12 cities were in process of being analyzed. Preliminary results indicate striking differences with respect to such causes of death as tuberculosis, cancer of several body sites (stomach, lung, cervix of the uterus, urinary bladder), bronchitis and other chronic respiratory diseases, cirrhosis of the liver, maternal causes, and external causes (motor vehicle accidents, particularly among males).

This research program provides clinical, laboratory, autopsy and other data for the standard assignment of the underlying causes of death. The results of this program will be valuable for future disease-control programs and further epidemiological studies.

The Review Conference of Principal Collaborators was held in February, at which time plans were made for the completion of the studies.

PAHO/R, PAHO/G: USPHS-NIH

AMRO-3600 (-198), Administrative Methods and Practices in Public Health

Objective: To cooperate with Governments in improving the administrative practices of national health services at all levels.

Probable duration: 1959-

Assistance provided: 1 short-term consultant, and administrative costs of two seminars.

Work done: This project continued to serve as a coordinating element for the technical activities of: the consultants in administrative methods and practices assigned to Zones I, IV, and VI; the consultant serving the State Ministry of Health in the Dominican Republic; the specialists in administration assisting the malaria eradication programs of Brazil, the Dominican Republic,

lic, and the countries of Central America; and the administrative methods officer assigned to water supply projects (AMRO-2200).

A Seminar on Organization and Administration of Health Services was held in Port-of-Spain, Trinidad, from 14 to 19 November under the auspices of the Organization and the UN Division of Public Administration, with the collaboration of the Government of Trinidad and Tobago. It was attended by 26 administrators from Antigua, Barbados, Bermuda, British Guiana, British Honduras, Dominica, Grenada, Jamaica, Montserrat, St. Kitts, St. Lucia, St. Vincent, Surinam, and Trinidad and Tobago; by observers from FAO and the UN Technical Assistance Board and by technical observers and officials of the Organization. The subjects presented were: problems of organization and operation of health services in Eastern Caribbean; organizational basis for health planning; structural organization and administrative services of the health departments of Antigua, St. Lucia, and Trinidad and Tobago; and organization for health planning in Trinidad and Tobago.

A similar seminar was held in Buenos Aires, Argentina, from 13 to 18 December. It was attended by 23 administrators from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Perú, Uruguay, and Venezuela and by observers from governmental organizations and specialized institutes of Argentina; and by technical advisers and officials of the Organization. The subjects discussed were: administrative services in national health plans, personnel administration in the health plans, and supply planning in public health programs.

The Organization cooperated with the Administration Institute of the University of Chile and the National Health Service of Chile in organizing a course, held from 17 May to 21 August, for administrative health personnel. The main subjects were: public health principles, general administration, organization and methods, personnel administration, accounting and budgeting, and social psychology. This course was attended by 26 students, as follows: Chile, 20; Costa Rica, 3; Guatemala, 1; Honduras, 1; and Uruguay, 1.

A course for 24 administrative officials from the Ministries of Public Health of Central America and Panamá was held at the Central American School of Higher Education in Public Administration, in San José, Costa Rica, from 22 September to 17 December. The subjects were: principles of administration, theory of the State and public administration, administration for development, introduction to development, adminis-

tration of health programs, organization and methods, personnel administration, fiscal administration, supply administration, records and management, and transport administration.

PAHO/R

AMRO-3603 (-253), Administrative Methods and Practices in Public Health (Zone III)

Objective: To assist the countries in Zone III to improve the administrative methods and practices of the health services.

Probable duration: 1963-

Assistance provided: 1 short-term consultant.

Work done: The short-term consultant reviewed the record-management practices in the Ministry of Public Health of Costa Rica and furnished to the pertinent authorities suggestions to improve the systems.

Assistance was also rendered through a course for administrators of public health services of the Central American countries and Panamá (*see* AMRO-3600).

PAHO/R

AMRO-3604, Administrative Methods and Practices in Public Health (Zone IV)

Objective: To assist the countries in Zone IV to improve the administrative methods and practices of health services.

Probable duration: 1965-

Assistance provided: 1 administrative methods adviser.

Work done: The adviser cooperated in the reorganization of services at the Ministry of Public Health and Social Welfare of Perú, both at the central level and in the health areas of Lima and Loreto. The functions of each service and of the officer in charge were also established.

A Budget Division was established at the Ministry, together with the standards for a functional budget for each service. The adviser also cooperated in organizing the Personnel Division and a central files and documents section, which were already in operation at the end of the year. Plans were made for giving intensive training to the administrative personnel of the health services.

In Colombia the adviser gave advisory services to the Institute of Municipal Development.

PAHO/R

AMRO-3606 (-319), Administrative Methods and Practices in Public Health (Zone VI)

Objective: To assist the countries in Zone VI to improve the administrative methods and practices of the health services.

Probable duration: 1963-

Assistance provided: 1 consultant in administrative methods.

Work done: In Argentina plans were developed in the School of Public Health of the University of Buenos Aires for a course for staff at the intermediate level. The consultant collaborated in establishing and organizing the National Service for Potable Water Supplies for Rural Communities; developing a manual for determining hospital costs; establishing methodology for determining costs in the leprosy program in Argentina; and preparing a post classification plan for the Ministry of Health. The consultant also organized and coordinated the activities of the Seminar on Organization and Administration of Public Health Services, held in Buenos Aires from 13 to 18 December.

In Chile the consultant collaborated and participated in the course for administrative personnel of health establishments held at the Administration Institute of the University of Chile from May to August; the planning for health process was emphasized.

In Paraguay advisory services were focussed on the implementation of a system of program budgeting and to achieve a close relationship between the budgeting and planning processes.

PAHO/R

AMRO-4100 (-338), Maternal and Child Health Program Planning and Service Norms

Objective: To prepare guidelines for establishing priorities and service standards in connection with maternal and child health program planning, including the carrying out of practical surveys, holding of seminars, and related activities.

Probable duration: 1964-1967.

Assistance provided: 2 temporary advisers and consultant services by Headquarters personnel; and printing costs in Panamá.

Work done: Advisory services were provided to Brazil, Chile, Colombia, Cuba, and Venezuela. The basic manual suggesting guidelines for maternal and child health care programs was revised. A new chapter, discussing integration of maternal and child hygiene norms and medical care norms, was presented as a background

paper at the UNICEF regional conference on children and youth in national development and added to the manual. The first draft of a manual on growth and development-study methodology was reviewed and revised. A course in growth and development was held at INCAP, Guatemala, with the participation of the Organization, for 30 students from 13 Latin American countries. The pilot area in Penonomé, Panamá, developed satisfactorily; population coverage doubled without increase in resources.

International Children's Center,
PAHO/R Inter-American Children's Institute

AMRO-4108 (-268), Social and Clinical Pediatrics

Objective: To organize and sponsor yearly courses in social pediatrics for professors in pediatrics in medical schools and pediatricians in charge of child health and hospital services in Latin America.

Probable duration: 1961-

Assistance provided: Advisory services and participation by Headquarters personnel; and supplies to sponsoring medical schools.

Work done: A 3-month course was held from 3 May to 31 July in Santiago, Chile, and was attended by 16 students, 4 of them from Chile and 12 who received fellowships awarded by the Organization and are reported in the respective country projects of Argentina (3 fellows), Bolivia, Brazil, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Panamá, and Perú.

Another course was held in Medellín, Colombia, from 23 August to 23 November and was attended by 15 students, 11 of which had received fellowship awards from UNICEF—Bolivia, Brazil, Panamá, Paraguay, Perú (2), Uruguay (3), and Venezuela (2)—as well as by 4 Colombian nationals.

PAHO/R, WHO/R

UNICEF

AMRO-4109 (-183), Nursing Midwifery

Objective: To provide interested countries with advisory services for improving their maternity care services and the services of institutions for the training of midwives.

Probable duration: 1962-1967.

Assistance provided: 1 nurse-midwife.

Work done: Advisory services were provided to Argentina and Uruguay. Short courses in nursing and

public health were organized and held in the provinces of Mendoza and Tucumán, Argentina, for midwives. A 10-day seminar for midwives and nurses was held in Brazil. Advisory services in education and service planning were also provided to countries in Zones IV, V, and VI.

PAHO/SFHP

AMRO-4110 (-334), Coordinated Research on the Etiology of Congenital Malformations

Objective: To obtain expert advice for the implementation of Resolution XIV of the XVI Pan American Sanitary Conference (Minneapolis, Minnesota, U.S.A.; 1962) through a research program on the etiology of congenital malformations.

Duration: 1962-1965.

Assistance provided: Temporary advisers.

Work done: Several meetings have been held in 1963, 1964, and 1965 to study the development and implementation of a collaborative program related to potentially teratogenic agents.

A research proposal was worked out and a working group on the Manual on Congenital Anomalies was held, from 18 to 19 January, to review the document prepared by a consultant. The completion of the Manual has been delayed in order to conform with the 1965 Revision of the International Classification of Diseases. The grant of the National Institute of Child Health and Human Development of the NIH was terminated on 31 May.

PAHO/G: USPHS-NIH

AMRO-4200 (-165), Nutrition Advisory Services

Objective: To provide advisory services on nutrition, in order to meet specific needs.

Probable duration: 1958-

Assistance provided: 2 short-term consultants and advisory services by Headquarters personnel.

Work done: The nutrition program placed special emphasis on the planning and evaluation of nutrition in health programs.

A seminar was held at INCAP, Guatemala, from 15 to 27 March, for PAHO Country Representatives and nutrition advisers stationed in Argentina, Brazil, Colombia, Ecuador, Honduras, Panamá, Paraguay, and Uruguay. Similar to the first of its kind (1964), this seminar was designed to provide information on recent

concepts in nutrition and to discuss nutrition in the planning of national health programs. Headquarters, field, and INCAP personnel were responsible for the teaching.

A Seminar for Nutrition Advisers on Program Planning was held in Washington, D.C., U.S.A., from 17 to 28 May. The participants were special and Zone nutrition advisers and Headquarters staff. The meeting was designed to apply the principles of public health program planning to the field of nutrition and to prepare a manual for use by the Organization's nutrition advisers and Country Representatives. At year's end the manual on nutrition planning was in the final stages of preparation.

A Seminar on Salt Iodization for the Prevention of Endemic Goiter was held in Salta, Argentina (*see* AMRO-4209).

A Seminar on Nutrition and Medical Education was held in October in Pôrto Alegre, Brazil, under the auspices of the Zone Office (*see* Brazil-4200).

A special conference on the evaluation of applied nutrition programs was convened at Headquarters, Washington, D.C., in collaboration with FAO (*see* AMRO-4210).

An evaluation was made of current teaching programs in 17 schools of dietetics and nutrition in 8 countries of Latin America (*see* AMRO-4210).

A short-term consultant visited selected areas in the Caribbean to define the structure and work program for the proposed Caribbean Food and Nutrition Center (*see* AMRO-4207).

PAHO/SFHP

AMRO-4201, Nutrition Advisory Services (Zone I)

Objective: To collaborate with the countries and territories of Zone I in the study and evaluation of their nutrition problems and current needs; in planning, in close cooperation with national and international agencies, nutrition education programs and programs to foster the production of protein-rich foods; and in integrating nutrition programs into health services at all levels.

Probable duration: 1961-

Assistance provided: 1 nutrition adviser and 1 public health nutritionist; and equipment and supplies.

Work done: *See* projects Trinidad and Tobago-4200 and -4201, Venezuela-4200, West Indies-4200, and AMRO-4207.

PAHO/R, WHO/R

AMRO-4203 (-54), Institute of Nutrition of Central America and Panamá

Objective: To cooperate in the increasing development of the Institute of Nutrition of Central America and Panamá in order to improve the nutrition services and programs of the countries of the area; to train professional and auxiliary personnel from those and other countries of the Hemisphere; and to carry out nutrition research in search of the most practical measures for solving the urgent problems created by the inadequate nutrition status, particularly with regard to quality of food intake, of a large segment of the population of the Americas.

Probable duration: 1949.

Assistance provided: 1 medical director, 1 consultant director, 4 nutrition advisers, 1 scientist, 1 statistician, 1 administrative officer, and 1 editor; and equipment and supplies.

Work done: INCAP staff participated in the planning, organization, and development of national nutrition surveys carried out in collaboration with the U.S. Interdepartmental Committee on Nutrition for National Development in El Salvador and Guatemala. The Institute also provided advisory services and resource personnel to member countries for the development of national nutrition programs (see Costa Rica-4200, El Salvador-4200, Guatemala-4200, Honduras-4200, Nicaragua-4200, and Panamá-4200).

Work continued in the development of new protein resources and in the improvement of existing sources. Investigation of new methods of determining nutrition status and on the effect of nutrition status on work output in the adult were continued, as was the investigation of the relationship between viral infections and nutrition.

New markets for Incaparina were being tested in Panamá and Venezuela, and in Brazil acceptability trials were completed.

INCAP's Nutrition Education Service distributed 126,963 copies of publications.

The 2-month course on public health nutrition was carried out in English and in Spanish from July to September and was attended by 31 physicians from Argentina, Barbados, Bolivia, Colombia, Guatemala, Haiti, Honduras, Panamá, Paraguay, United States of America, and Uruguay.

The regular 11-month course on public health nutrition for dietitians was successfully conducted for 9 participants, 8 of which—from Argentina, 3; Bolivia, 1; Brazil, 2; Venezuela, 2—received fellowship awards from UNICEF. The other student was from Guatemala.

Other professional personnel from Argentina, Brazil, Colombia, El Salvador, Guatemala, Honduras, Nicaragua, and United States of America received specialized training at INCAP under an individual tutorial system.

**PAHO/R, Governments of Central America and Panamá, UNICEF
PAHO/INCAP/G⁵**

AMRO-4204 (-262), Nutrition Advisory Services (Zone IV)

Objective: To provide advice to the countries of Zone IV on the development of nutrition programs (especially at the local health service level), on applied research related to nutrition programs, and on the training of personnel.

Probable duration: 1956.

Assistance provided: 1 nutrition adviser.

Work done: See projects Bolivia-4201 and -4202, Colombia-4200 and -4201, Ecuador-4201, Perú-4200, and AMRO-4215.

WHO/R**AMRO-4207 (-359), Nutrition (Caribbean Area)**

Objective: To establish a Caribbean Food and Nutrition Center to serve the countries and territories of the area through advisory services, research, and personnel training.

Probable duration: 1963.

Assistance provided: 1 short-term consultant.

Work done: A preliminary Plan of Operations for establishing the Caribbean Food and Nutrition Center in cooperation with FAO was drawn up and, submitted to the health authorities of the participating countries, received general approval. The short-term consultant visited the area for 2 weeks in order to establish in

⁵ Grants received in 1965:

Conservation Foundation
General Mills
English American School (Guatemala)
Esso Research and Engineering Co.
Interdepartmental Committee on Nutrition for National Development (U.S.A.)
Massachusetts Institute of Technology (U.S.A.)
National Institutes of Health (U.S.A.)
Pan American Health Organization
The Nutrition Foundation, Inc. (U.S.A.)
United States Army Medical Research and Development Command
W. K. Kellogg Foundation
Williams Waterman Fund

more detail the structure and program plan for the center. FAO sent a special consultant to the area to ascertain the agricultural problems and needs and develop these aspects in the Plan of Operations. Recruitment of personnel for the Center was already underway.

WHO/R

FAO

AMRO-4209, Endemic Goiter Prevention

Objective: To study problems of endemic goiter prevention and to assist Governments in establishing effective programs of salt iodization.

Place and duration: Salta, Argentina; 21-26 June 1965.

Assistance provided: 1 short-term consultant and travel and per diem for participants in the seminar.

Work done: A Seminar on Salt Iodization for the Prevention of Endemic Goiter was held in collaboration with the national Ministry of Social Welfare and Public Health and the sponsorship of UNICEF and PAHO/WHO. The seminar was designed to study the problems related to salt iodization programs in the Hemisphere, including technical, administrative, legal, and financial aspects. The 29 participants—from Argentina, Brazil, Chile, Colombia, Costa Rica, Guatemala, Honduras, Nicaragua, Panamá, Paraguay, Perú, Uruguay, and Venezuela—represented both public health interests and those of the salt-producing industry; 1 representative from INCAP, 2 from UNICEF, and 5 from PAHO/WHO also participated. An effective interchange of ideas between the health and industrial sector was achieved and a series of detailed conclusions and recommendations were drawn up and published in the final report.

Ecuador and Venezuela were provided with advisory services on methods of salt iodization and administrative aspects of goiter prevention programs.

PAHO/R

UNICEF

AMRO-4210 (-288), Evaluation of Applied Nutrition Programs

Objective: To evaluate, jointly with FAO and UNICEF, the applied nutrition programs operating in 16 countries of the Americas.

Probable duration: 1964-1966.

Assistance provided: 1 nutrition adviser (on loan from the U.S. Public Health Service, reimbursed by means of a grant) and 1 short-term consultant.

Work done: The adviser attended an FAO/WHO Expert Committee meeting in Rome to discuss the evaluation of applied nutrition programs. The report from this meeting will serve both Organizations as a general guide for the development of evaluation procedures on a Regional basis.

The Organization proposed and organized in collaboration with FAO a small working conference to consider methods of evaluating programs in the Hemisphere. In preparation for this conference, PASB developed a tentative guide for appraisal of the health component of applied nutrition programs, designed to obtain base-line information on nutrition programs and to test possible indices for assessing their progress. This tentative guide was tested in Colombia, Costa Rica, Panamá, Paraguay, and Trinidad and pertinent modifications were then made to it, according to experience gained and in response to local suggestions.

The final revision of the above-mentioned guide served as a working document for the joint PASB-FAO Working Group which met in Washington, D.C., from 6 to 10 December. In addition to PASB and FAO headquarters personnel, this working conference was attended by representatives of UNICEF, UNESCO, and ILO and by selected consultants from Colombia, Costa Rica, Ecuador, Panamá, Paraguay, Perú, and Trinidad and Tobago. The group prepared a comprehensive evaluation document in the fields of health, agriculture and education, which will be tested at the local level under supervision of national authorities prior to the Regional Seminar on Evaluation of Applied Nutrition Programs, rescheduled from 1965 to 1966 for Bogotá, Colombia.

From experience gained, it had become apparent that the success of applied nutrition programs is dependent on adequate staffing by suitably trained professional nutrition workers, specifically the public health nutritionists. In view of this, a questionnaire was sent to all existing schools of dietetics and nutrition in Latin America. The results of this survey indicated that the orientation and teaching methods of the majority of these schools did not qualify graduates for assignment to applied nutrition programs. In order to verify in detail the problems and needs of the schools, the Organization assigned a consultant to visit 17 schools in the Hemisphere. A full report on the status and needs in nutrition training, including specific recommendations for the improvement of the situation, was in preparation.

PAHO/R, PAHO/SFHP FAO, UNICEF, USPHS

AMRO-4212, Research in Nutrition Anemias

Objective: To establish and assist a reference laboratory and training center for investigators and public health personnel working in the field of nutritional anemias.

Probable duration: 1965-1967.

Assistance provided: A grant to the Center for Applied Research in Nutritional Anemias, in Caracas, Venezuela; and a 1-month fellowship for a fellow from México to study nutrition, in Venezuela.

Work done: Methods were established and techniques perfected for the determination of total iron, folic acid, and vitamin B₁₂ in duplicate samples of serum sent by collaborating laboratories. Standardized protocols to be used in the joint PAHO/WHO study of nutritional anemias in the Americas were prepared and circulated to participating investigators, in Colombia, Guatemala, México, Perú, and Trinidad.

The center undertook the training of personnel from 2 collaborating laboratories (Trinidad and México).

PAHO/G: Williams Waterman Fund**AMRO-4213, Iodine Determinations in Endemic Goiter**

Objective: To establish and assist an iodine reference laboratory and training center for investigators and public health laboratory personnel working in endemic goiter prevention.

Probable duration: 1965-1967.

Assistance provided: A grant to the Center for Iodine Determinations in Endemic Goiter, in Santiago, Chile; and one 2½-month fellowship for a fellow from Chile to study organization of medical education (laboratory services), in the United States of America.

Work done: Purchase and shipment of equipment and supplies by PASB for the laboratory was completed.

The PAHO Scientific Group on Research in Endemic Goiter held its second meeting from 5 to 9 October, in Cuernavaca, México, to review progress made during the last 2 years in research on endemic goiter and its prevention. Outstanding among the recommendations arising from this meeting was the one concerning the use of intramuscularly injected iodized oil for the prevention of goiter in isolated areas and in countries where salt iodization has not been implemented. A study plan was drawn up to test the use of iodized oil on a pilot basis in Ecuador.

PAHO/G: Williams Waterman Fund**AMRO-4215 (-340), Training Center on Applied Nutrition (La Molina Agrarian University)**

Objective: To train directive and executive-level personnel responsible for determining food production policy and for the agricultural sector of applied nutrition programs in Latin America.

Probable duration: 1963-1967.

Assistance provided: Consultant services by the adviser of project AMRO-4204.

Work done: The Organization continued to advise on the public health aspects of the international course on applied nutrition for agronomists scheduled to be held at the La Molina Agrarian University, in Lima, Perú, in April 1966. The course will stress the nutrition aspects of agricultural programs and the participation of agricultural personnel in applied nutrition programs.

FAO, UNICEF

AMRO-4218, Latin American Nutrition Society

Objective: To establish a professional society of scientists working in the field of nutrition in Latin America and to assist it in developing a journal for publication of scientific articles in this field.

Probable duration: 1965-

Assistance provided: A grant for the Society.

Work done: The inaugural meeting of the Latin American Nutrition Society was held in November, in Chicago, Illinois, U.S.A., during the Western Hemisphere Nutrition Congress of the American Medical Association. The proposed charter of the Society was approved by the founding members inscribed at the meeting.

PAHO/G: Williams Waterman Fund**AMRO-4300 (-273 and -355), Mental Health**

Objective: To carry out a conference on epidemiology of mental disorders in order to analyze the present status of this subject.

Probable duration: 1963-1964; 1965-

Assistance provided: 1 short-term consultant and 12 temporary advisers.

Work done: The temporary advisers—from Argentina, Chile, Colombia, Guatemala, México, Perú, and the United States of America—met in Washington, D.C., from 29 March to 3 April. After discussing the 10 items of the agenda, the group prepared a final report making recommendations on the appropriateness of epidemiological studies in Latin America; the possibility of using

uniform nomenclature, definitions, and standardized techniques; the value of transcultural studies in one country and in several countries; criteria for establishing priorities in epidemiological research, bearing in mind Resolution III (on epilepsy) of the XV Meeting of the PAHO Directing Council; and on the type of investigators needed and the training to be provided.

PAHO/R

AMRO-4307, Seminar on Mental Health (Zone I)

Objective: To conduct a seminar in order to discuss mental health problems related to the population of the Caribbean Area.

Place and duration: Kingston, Jamaica; 6-11 September 1965.

Assistance provided: 1 short-term consultant, 5 temporary advisers, and travel and per diem for 22 participants.

Work done: The Seminar was held in collaboration with the Government of Jamaica and the University of the West Indies. The participants totaled 32 professionals from Aruba, Bahamas, Barbados, Bermuda, British Guiana, Curaçao, Dominica, Grenada, Guadeloupe, Jamaica, Martinique, Puerto Rico, St. Lucia, St. Vincent, Surinam, and Trinidad and Tobago.

After discussing the 5 items of the agenda the report included specific recommendations on the care of the mentally ill, recruitment and training of personnel, child psychiatry, legislation, and Regional and international cooperation. Some general recommendations on budgeting, construction of psychiatric facilities, mental health education of the public, and ancillary mental health personnel were also included.

PAHO/R

AMRO-4308 (-302), Mental Health Information Center on Latin America

Objective: To prepare in collaboration with the National Clearinghouse for Mental Health Information of the National Institute of Mental Health (United States of America) a Directory of Psychiatrists, a Directory of Mental Health Facilities and Institutions, and a Mailing List of Key Mental Health Personnel; to make a survey of mental health legislation and a survey of existing training programs in psychiatry and other related mental health fields; and to establish an agency to receive and distribute information on mental health activities, facilitate communication between mental health workers, and

stimulate scientific research in this field (all relating to Latin America).

Probable duration: 1963-1966.

Assistance provided: 1 analyst, clerical personnel, and supervision and orientation of project development by the Regional Adviser in mental health.

Work done: 2,600 questionnaires were distributed among Latin American psychiatrists for the preparation of a preliminary Directory of Psychiatrists; 1,001 completed questionnaires were received, the necessary information was extracted and translated into English, and 250 pages of the Directory were stenciled. As preliminary work for the preparation of the Directory of Mental Health Facilities and Institutions, 800 questionnaires were sent out; 147 completed questionnaires were received. A card file of 180 names and addresses was developed for a mailing list of key mental health personnel. A preliminary survey on mental health legislation in the countries of Latin America was begun, using the Washington, D.C., area libraries, and was completed for Argentina, Bolivia, Brazil, and Chile.

A draft plan for compiling information on existing training programs in psychiatry and other related mental health fields was prepared.

The MHICLA also complied with more than 100 requests for information on different mental health subjects.

PAHO/G: USPHS-NIH

AMRO-4400 (-72), Dental Health

Objective: To cooperate with the Governments in accomplishing the inclusion of dental health aspects into activities of health protection, promotion, and recuperation in the communities; and to cooperate also in strengthening both dental health services and research with a view to increasing the efficiency and performance of dental activities.

Probable duration: 1954-

Assistance provided: 4 short term consultants, and advisory services by Headquarters personnel; and equipment and supplies.

Work done: Advisory services were provided to Colombia in connection with a study on available dental manpower. Two of the consultants participated in selecting the indices for the epidemiological study and in establishing the size of sample to be used in domiciliary investigations.

Advisory services were also provided in Venezuela, in a reorganization of the Dental Division at the Ministry of Public Health and Social Welfare and the preparation

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of a plan whereby the College of Dentistry, with assistance from the Ministry, will establish public dental clinics throughout the country to provide dental care to a larger number of the population.

PAHO/SFHP

AMRO-4407 (-389), Dental Epidemiology

Objective: To conduct epidemiological studies and research in dentistry in the Americas; to operate effectively an international center for distribution of printed material on dental epidemiology and research and for consultation and guidance on methodology in these specialties; and to train dentists in epidemiology and research.

Probable duration: 1964-1966.

Assistance provided: Consultant services by the Regional Adviser; a grant to the School of Hygiene and Public Health, of the University of São Paulo (Brazil), for an International Center of Dental Epidemiology and Research; and equipment and supplies.

Work done: The School of Hygiene and Public Health of the University of São Paulo established the International Center of Dental Epidemiology and Research (CIEPO). Plans were prepared for the first 2 years (1966 and 1967) of Center activity and, specifically, for the first international course on epidemiology and research, which will be conducted for 15 public health dentists. Teaching material for methods of investigating dental caries and oral hygiene in the communities was prepared and tested. Also prepared was a manual on dental caries indices, which at year's end was in press and will be distributed throughout the Americas. A revision was made of the course in epidemiology for dentists studying at the School of Hygiene and Public Health.

**PAHO/R, PAHO/G: USPHS, University of
W. K. Kellogg Foundation São Paulo (Brazil)**

AMRO-4408 (-274), Salt Fluoridation

Objective: To study the possibility of using salt as a new vehicle for fluoride in the prevention of dental caries and to establish the appropriate dose.

Probable duration: 1963-1967.

Assistance provided: Advice by Headquarters personnel.

Work done: The equipping of the laboratories for this study was completed (1964 funds), and the optimum doses for testing were established. A study was made on

the manner of preventing the population under study from using unfluoridated salt, and the provision of fluoride to the communities was begun.

AMRO-4500 (-142), Health Aspects of Radiation

Objective: To stimulate national health services to adopt international standards and procedures for radiation protection connected with the use of X rays and radioisotopes and to develop regulations for the disposal of radioactive wastes; to promote the teaching of basic health physics, radiobiology, and radiation protection in medical, dental, veterinary public health, and other professional schools; to foster the use of radioisotopes for medical diagnosis, therapy, and research; and to collaborate with interested countries in establishing sampling stations for determining radioactive contamination of air, food, and water.

Probable duration: 1958-

Assistance provided: 6 short-term consultants.

Work done: The draft of the *Manual del Curso Básico de Protección contra las Radiaciones Ionizantes*, translated (1964) from the U.S. Public Health Service training course manual *Basic Radiological Health*, was updated in order to include in it the most recent pertinent information before its publication.

The surveillance of air and milk in connection with radioactive fallout continued in 6 Latin American stations, and 2 of them indicated willingness to enter into the milk surveillance aspect. Jamaica was provided with technical advisory services to set up a more extensive type of surveillance procedure for detection of radioactive fallout in milk.

The foundations were prepared to establish in several countries in Latin America a research program to compare the relative effectiveness of film-badge dosimetry with pocket dosimeters under conditions of continuous high humidity and heat, i.e., in tropical areas. The U.S. Office of Civil Defense offered to provide dosimeters and chargers for the purpose.

A short-term consultant was sent to Chile to cooperate in the preparation of a research protocol to be submitted to NIH in request of a grant for a study on the Biodynamics of Vitamin D in Osteomalacia.

The PASB cooperated with WHO Headquarters (Geneva) in conducting a Meeting on Epidemiological Studies in Human Radiobiology, held from 13 to 17 December at PAHO Headquarters, Washington, D.C. One of the subjects of discussion was the high background radiation areas in Brazil.

A new issue was printed of *Las Radiaciones Ionizantes*

y sus Efectos en la Población (PAHO Scientific Publication 43) and approximately 1,000 copies were sent to Uruguay upon request.

In order to better assist the field staff in developing radiation programs of various types, a set of detailed guidelines was prepared for distribution to the field staff.

A considerable number, running into the thousands, of the American College of Radiology's *A Practical Manual on the Medical and Dental Use of X Rays with Control of Radiation Hazards*, translated by the College into Spanish as *Manual Práctico sobre el Uso de los Rayos X en Medicina y Odontología y el Control de los Peligros de la Radiación* [Ionizante] was distributed by PASB to a number of countries in Latin America. This activity was carried out in accordance with an agreement with the College, by which the PASB both prints and distributes the Spanish version of the *Manual*. Copies in English were also distributed to Jamaica and Trinidad.

"What Nurses should Know about Radiation Hazards" (*International Nursing Review*, II:4) was translated under the title "Lo que una enfermera debe saber sobre los riesgos de las radiaciones [ionizantes]," and more than 2,000 copies of the article were distributed (20 to each of the nursing schools in Latin America).

PAHO/R, WHO/R

USPHS

AMRO-4507 (-339), Radiation Health Protection

Objective: To assist interested Governments to establish protection against radiation hazards.

Probable duration: 1964-

Assistance provided: 1 radiation physicist; and supplies and equipment.

Work done: Advice on the establishment of radiation protection programs was furnished to health authorities of Argentina, Brazil, Chile, Colombia, Jamaica, Trinidad, Uruguay and Venezuela as well as Perú, where the adviser was stationed. For the training of personnel for radiation health inspection services both advice and educational material in Spanish were provided.

PAHO/R

AMRO-4600 (-256), Industrial Hygiene

Objective: To cooperate with the Governments interested in organizing or improving the operation of national industrial hygiene services by providing technical advisory services and facilities for personnel training.

Probable duration: 1961-

Assistance provided: Travel expenses for the consultant of project Chile-4601; and some supplies.

Work done: The consultant participated in the II Biennial Meeting of the Economic Commission for Latin America (UN agency), held in México City from 6 to 17 May. Participants at the meeting prepared a project for establishing a network to investigate air pollution in the 10 main cities of the Americas. The consultant also participated in the First National Congress on Sanitation in Argentina, held in Buenos Aires in October, at which he presented a paper on draft programs of industrial hygiene in that country. Assistance was furnished in various negotiations aimed at conducting a survey on conditions of hygiene and safety in the industrial area of the Federal Capital, as well as in a short course on industrial hygiene conducted in December at the Buenos Aires University.

The Governments of Bolivia and Jamaica received advisory services in the matter of industrial hygiene programs and air pollution.

PAHO/R

AMRO-4608 and -4609 (-356), Manganese Poisoning and Metabolic Disorders

Objective: To coordinate research on the dynamics of the mental and neurological syndromes produced by chronic inhalation of dust containing manganese.

Probable duration: 1964-1970.

Assistance provided: 2 short-term consultants and contractual services; and equipment and supplies.

Work done: Control studies were carried out by the short-term consultants on a number of Chilean miners who had exhibited signs of manganese toxicity and they were compared with another group of miners, apparently healthy, as well as with nonexposed individuals in Chile.

Further evaluation of the individuals' neurologic and psychologic conditions were made, and specimens of body fluids, hair, skin, etc., were sent to the Brookhaven National Laboratories at Upton, Long Island, N.Y., for neutron activation analysis to determine manganese content. While additional studies were also carried out in Chile to help to elucidate the uptake mechanisms involved in manganese metabolism, parallel investigations of the homeostatic mechanisms which control this metal were performed also in experimental animals.

PAHO/G: USPHS-NIH

AMRO-4700 (-150), Food and Drug Services

Objective: To provide technical advice to the national services responsible for the control of foods, drugs, and biological products, whether of local origin or imported; and to cooperate with the countries in the improvement of those control services.

Probable duration: 1959.

Assistance provided: 2 short-term consultants and secretarial and translating services; and technical publications and teaching material.

Work done: Bearing in mind Recommendation VII.C.2 of the Final Report of the Meeting of the Task Force on Health at the Ministerial Level (Washington, D.C.; 15-20 April 1963) and Resolution WHA18.36 of the Eighteenth World Health Assembly (Geneva, Switzerland; 4-21 May 1965) concerning the need for establishing an appropriate control of the quality and cost of essential drugs dispensed to the public, a consultant was recruited to study the possibilities of establishing an International Laboratory for the Analysis of Pharmaceutical Products which may serve as reference laboratory for the Member Countries. The report of the consultant was submitted to and approved by the XVI Meeting of the Directing Council of the Pan American Health Organization (Washington, D.C., U.S.A.; 27 September-8 October 1965) and immediately thereafter a study was begun as to site and financing of a laboratory of this kind.

In compliance with similar decisions of the above-mentioned Governing Bodies, work was continued on the collection of existing laws and regulations on drug quality control in the Americas, as was the collection of current price control and marketing systems for pharmaceutical products. All countries of the Hemisphere received information on precautions in selling and using such products as are or may be dangerous to health.

In Argentina advice was provided in the reorganization of the Drugs and Pharmaceutical Products Control Service (which recently received a significant financial contribution from the Government), and new laboratories were being installed in the National Institutes of Health at Ramos Mejía, Buenos Aires province.

With the assistance of a consultant, studies were made in Chile on the possibility of establishing a printed form for nationwide use and obtaining better drug control through the reorganization of the pertinent laboratories and through the instituting of inspection procedures.

See also project AMRO-4703.

PAHO/R**AMRO-4703 (-376 and -381), Food and Drug Control (Zone III)**

Objective: To assist the countries of Zone III to establish national food and drug control programs; to provide technical advisory services and facilitate personnel training; and to coordinate these activities in the regional reference laboratories of INCAP, for foodstuffs, and of the University of Panamá, for drugs.

Probable duration: 1964.

Assistance provided: 2 short-term consultants and advisory services by the adviser of project AMRO-0703; a grant to the Adolfo Lutz Institute, in São Paulo, Brazil; and technical publications.

Work done: One of the consultants studied the food and drug control services, personnel availability, laboratory facilities, and health legislation in force in the countries of the Zone. The adviser of project AMRO-0703 prepared a report on Minimum Structures for Food and Drug Registry Departments in the Ministries of Health, which was presented to and approved by the X Meeting of Ministers of Public Health of Central America and Panamá (Panamá City; 15-17 August 1965). In cooperation with authorities of the Adolfo Lutz Institute, São Paulo, Brazil, 320 food health standards were prepared and submitted to the X Meeting of Ministers, which discussed and approved them.

The First Seminar on Food and Drug Control for Central America and Panamá was organized and held, in Guatemala City from 6 to 11 September, under the auspices of the Organization; 16 officials from the food and drug control services of the Health Ministries in the area participated, as did officials from the Central American Institute of Industrial Investment and Technology, INCAP, and PAHO/WHO. The principal objective was to review and discuss the 320 standards (and the 80 prepared in 1964 for the same countries), as well as the report on Minimum Structures for Food and Drug Registry Departments. At the end of the year, the legal departments of the Governments were studying the manner of including these standards into each country's health legislation, and Costa Rica and El Salvador had prepared special regulations for including the standards into their health codes.

As a health-sector contribution to the development of the Central American Common Market a consultant made a special study, at INCAP, regarding the establishment of a Division of Food Control and Analysis to serve as reference laboratory for the entire Central American Isthmus.

Assistance continued to be provided to the program of control of pharmacies, food, and drugs, by training

personnel for the Inspection Section and laboratory technicians for the Specialized Laboratories of the University of Panamá which are responsible for conducting drug acceptability tests for the countries of the Isthmus. The same laboratories were also provided with technical publications, international standards, and testing materials for the control and analyses of drugs and other chemical products.

WHO/R

AMRO-4707 (-235), Food Sanitation

Objective: To review the municipal food control practices; and to prepare a guide on this subject for the Latin American countries.

Duration: 1961-1965.

Assistance provided: 1 short-term consultant in 1961, 1962, 1963 and 1964; advice by Headquarters and Zone Office and country-project personnel, as required; and a limited amount of supplies in 1965.

Work done: The short-term consultant visited Colombia, Chile, El Salvador, Guatemala, Panamá, and Perú and prepared a draft guide for the control of food distribution, copies of which were circulated for comments to Organization personnel and officials of the countries. Upon receipt of their comments, a final version of the guide was drawn up which will be published by the Organization.

A course in food sanitation was conducted from 15 to 17 November for 22 health inspectors. The course was held at the School of Natural Sciences and Pharmacy of Panamá, with the assistance of project personnel stationed in that country.

PAHO/R

AMRO-4800 (-185), Medical Care Services (inter-Zone)

Objective: To assist the Governments in studies associated with aspects of planning, organization, training, and applied research in medical care services.

Probable duration: 1961-

Assistance provided: 2 short-term consultants; and equipment and supplies.

Work done: The consultants worked in the preparation and conduct of the meetings reported in projects AMRO-4811 and -4812.

PAHO/R

AMRO-4803 (-303), Medical Care Services (Zone III)

Objective: To collaborate with the Governments of the countries of Zone III in the integration of medical care services with the general health services and in the formulation of suitable standards for health care.

Probable duration: 1962-

Assistance provided: 1 medical care adviser.

Work done: A plan of operations, which includes a general policy on medical care, was prepared in Costa Rica to regionalize the programs of the provinces of Guanacaste and Puntarenas; the plan provides for the gradual integration of the provincial program with the general health services. The legislative and executive bodies continued to study the proposed reorganization of the Ministry of Public Health and of medical care services.

In the first 9 months of 1965, hospital discharges increased 2.2% and consultations 9.7% in comparison with the same period of the previous year; 91.2% of the established target of providing hospital care for 60% of births was met.

In El Salvador, standards were established for a medical care program in accordance with the National Health Plan. The National Emergency Committee prepared a plan which succeeded in solving many of the problems arising from the earthquake which occurred in the Capital on 4 May.

Outpatient consultations in Guatemala numbered 152,079, and hospital discharges, 83,059; the average bed occupancy rate was 24.9 days. There are 31 hospitals in the country under the Ministry of Public Health and Social Welfare, with a total bed capacity of 9,886, not including the beds in military, police, and private hospitals.

Medical care targets for 1965 were established as part of the Ten-Year Health Plan of Nicaragua. The authorities cooperated in coordinating the resources of the various health services of the public and private sub-sectors, which resulted in coordinated activities between the Social Welfare Board and the School of Medical Sciences in León for using the local hospital in León as a university hospital. It was further established that the Nicaraguan Institute of Social Security would use Public Health Ministry hospital services located outside Managua for the insured who live in the eastern provinces. During the year, a reorganization of hospital records was begun at the General Hospital of Managua.

Studies were begun in Panamá to establish hospital regulations and to prepare a form for the evaluation of existing health institutions. The remodeling of a build-

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ing to house the outpatient department of the National Psychiatric Hospital was completed, as was more than 80% of the remodeling and expansion of the integrated medical centers of Ocú and Cañazas.

See also Honduras-4800.

PAHO/R

AMRO-4804 (-317), Medical Care Services (Zone IV)

Objective: To collaborate with the Governments of the countries of Zone IV in the integration of medical care services with the general health services and in the formulation of suitable standards for health care.

Probable duration: 1963-

Assistance provided: 1 medical care adviser.

Work done: Assistance was provided to Bolivia in the drafting of a bill which proposes the merger of public and private insurance funds in 3 social security institutions. Assistance was also furnished in drawing up a questionnaire for a hospital survey to be carried out as part of the collection of data for the national health plan, as well as in teaching a course on health planning with reference to hospital administration and medical care.

Advisory services continued to be provided to the Public Health School in Medellín, Colombia, and to the Medical Care Division of the Ministry of Public Health in the collection of data for the national health plan. Assistance was also given in preparing a bill on compulsory medical service in the interior of the country.

Advisory services were furnished in Ecuador in the drafting of a plan for reorganizing the National Health Services, as well as in connection with the integrated health plan of Manabí, a plan for building and equipping hospitals, health centers and dispensaries, submitted by the Board of Economic Planning and Coordination. Similar services were rendered to the National Welfare Institute in connection with the equipping of 4 new hospitals.

In Perú, advisory services continued to be given to the Directorate of Hospital Standards and Supervision, and to the committee in charge of reorganizing the Workers Insurance Hospital in Lima. The adviser participated in programs of hospital administration and medical care at the School of Public Health in Lima, and in meetings of the committee in charge of studying the program for building the future university hospital of the School of Medicine of the University of San Marcos. The adviser also lectured Lima's School of

Public Health on medical care and hospital administration and assisted in teaching the course on basic hospital sanitation and maintenance.

PAHO/R

AMRO-4806 (-304), Medical Care Services (Zone VI)

Objective: To collaborate with the Governments of the countries of Zone VI in the development of medical care programs, especially with regard to hospital planning and administration.

Probable duration: 1961-

Assistance provided: 1 adviser specialized in medical care and hospital administration; and equipment and supplies.

Work done: In Argentina, a bill was prepared to establish the Service of Community Medical Care; the first national census of health services and resources was completed for 20 provinces and was published; a cost-estimate manual for hospitals of the Ministry of Social Welfare and Public Health was prepared and approved; steps were taken and interviews held with a view to establishing a Center of Medical Administration under the auspices of the Public Health Ministry through the Medical School of Buenos Aires, together with Columbia University of New York, the W. K. Kellogg Foundation, and the Organization. Advisory services were provided on the building, expansion or remodeling of 3 university hospitals, 2 health units, and several other hospitals in either the Federal Capital or the provinces and, upon request of the pertinent authorities, on the technical and administrative organization of hospitals. Teaching programs were prepared for courses in hospital administration, nursing, and for health technicians; the adviser did some teaching in these subjects.

Chile prepared a National Health Plan as part of the National Development Plan. Assistance was provided in a plan of hospital construction, a national census of medical care resources, and an evaluation of health institutions and performance, as well as in a readjustment of the resources of a Plan for the Regionalization of Services.

Paraguay carried out a survey of the health resources available in the country, and the adviser assisted in formulating the medical care program for the National Two-Year Plan. In view of the difficulties in isolating patients during the smallpox outbreak in Asunción and environs (August-November), a study was made of organizing an isolation service for infectious and contagious diseases.

In Uruguay, plans were prepared to adapt a tuberculosis hospital located in the northern part of Montevideo into a hospital for acute infectious diseases, and in accordance with a program prepared in cooperation with the adviser a 3-month course on hospital administration was held (Uruguay-3100).

PAHO/R

AMRO-4807 (-3), Rehabilitation

Objective: To provide the countries with advisory services in the field of rehabilitation related to medical problems.

Probable duration: 1962-

Assistance provided: 1 Regional Adviser in rehabilitation.

Work done: Interest in physical disabilities has been increasing in several countries of the Americas and thought has been given to the need for physical therapy and other means of rehabilitation. Consultant services were therefore provided to the pertinent authorities in Argentina, Bolivia, Colombia, Ecuador, Paraguay, and Perú.

Plans for an International School of Prosthesisists were consolidated in Argentina, and in Perú the National Council of Rehabilitation was officially recognized.

See also Brazil-4801 and-4802, Chile-4801, and Venezuela-4801.

PAHO/R

AMRO-4811, Seminar on Hospital Planning

Objective: To convene an advisory group in order to study hospital planning as part of national health planning and advise the PAHO Directing Council on how the PASB can best collaborate with the countries regarding this matter.

Probable duration: 1965-1966.

Assistance provided: 1 short-term consultant and travel expenses of 6 temporary advisers.

Work done: The consultant visited 8 countries and, using the latest information available, prepared a document which served as the basis for the discussions of the Advisory Committee on Planning of Hospitals and other Health Facilities. The Committee met at PAHO Headquarters from 26 to 30 July in conformity with Resolution XXV of the XV Meeting of the Directing Council of PAHO (Washington, D.C., U.S.A.; 1964). The recommendations and suggestions contained in the

Final Report of the Advisory Committee were subsequently discussed at the XVI Meeting of the Directing Council, which adopted Resolution XXXVII in that regard.

In compliance with Resolution XXXVII a document was prepared for discussion with the representatives of international credit institutions.

PAHO/R

AMRO-4812, Study Group on Coordination of Medical Care in Latin America

Objective: To convene a Study Group for establishing the best means of coordinating the medical care programs of Ministries of Health or other official health agencies with those of Social Security agencies.

Place and duration: Washington, D.C., U.S.A.; 12-16 July 1965.

Assistance provided: 1 short-term consultant and travel expenses of 10 temporary advisers.

Work done: The Study Group on Coordination of Medical Care in Latin America, convened in conformity with Resolution XL of the XV Meeting of the Directing Council of PAHO, examined the working document prepared by PASB and made a detailed study of the obstacles that have impeded proper coordination between the State medical services and those of Social Security institutions in the countries of the Americas. The Group agreed that most Latin American countries are not yet ready for the integration of services, but that it would be advisable for steps to be taken gradually to achieve a closer coordination, in the understanding that coordination means the orderly planning of the use of all manpower and material resources available in the various public and private health care institutions.

The Group recognized that there was great shortage of manpower and material resources and that the available resources are not always utilized to maximum advantage; it also acknowledged the fact that costs are extremely high in certain institutions, which makes those institutions out-of-reach for many persons.

In view of the insufficiency of the data available for an objective analysis of the problem the Group recommended that the Latin American countries obtain international assistance, through such agencies as OAS and PASB, for conducting a survey to establish, on a reliable basis, the human and material resources that are available, the degree of coordination between agencies, the cost of services, and their utilization.

The Final Report of the Study Group was discussed

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at the XVI Meeting of the Directing Council of PAHO, which approved it in Resolution XIX.

PAHO/R

OAS

AMRO-6100 (-16), Schools of Public Health

Objective: To cooperate with schools of public health in the Hemisphere, especially the newer ones, in order to strengthen and improve their organization, administration, and teaching.

Probable duration: 1953-

Assistance provided: 2 short-term consultants; and teaching equipment for several schools of public health not covered by specific projects.

Work done: A study of the content and methodology of medical care courses designed for candidates for the public health degree was carried out in the schools of Argentina, Perú, and Venezuela. Advisory services were furnished to the pertinent health authorities in Havana regarding the School of Public Health.

A Traveling Seminar on the Organization and Administration of Schools of Public Health was conducted from 6 to 23 March for the deans of 14 public health schools of Canada and United States of America. The group visited the Institute of Public Health in Alexandria, Egypt; the School of Public Health of the American University in Beirut, Lebanon; and the School of Public Health in Ankara, Turkey. The principal topics discussed were public health curriculum and field training and work; teaching of epidemiology and statistics; occupational health; and methods and techniques of teaching. The objective of the seminar was to acquaint the authorities of schools which receive a large number of foreign students with the situation in other countries.

WHO/R

AMRO-6107 (-152), Seminars on Schools of Public Health

Objective: To convene a conference of deans of Schools of Public Health of Latin America in order to discuss common problems and review specialized fields of teaching.

Probable duration: 1957-

Assistance provided: 5 temporary advisers and other costs of the meeting.

Work done: The IV Conference of Deans of Schools of Public Health in Latin America was held in San Juan, Puerto Rico, from 14 to 19 November. The main topic

of discussion was the teaching of epidemiology. Deans of schools and chiefs of their departments of epidemiology, from Argentina, Brazil, Chile, Colombia, México, Perú, Puerto Rico and Venezuela, as well as staff members of the Organization, participated.

PAHO/R

AMRO-6111, Training of Auxiliary Personnel

Objective: To conduct a study which will serve as the basis for discussion at a meeting of national authorities and international experts who will formulate a policy for the training of auxiliary workers based on the needs of the countries of the Americas.

Probable duration: 1965-

Assistance provided: 1 short-term consultant.

Work done: A questionnaire was sent to the official agencies of various countries, requesting data on auxiliary personnel engaged in public health. The consultant visited 5 countries (Brazil, El Salvador, México, Perú, and Venezuela) to gather information on the matter. Subsequently, a report was submitted on the basic concepts of training of auxiliary health workers in Latin America, as well as on the use being made of auxiliary personnel. The document will be submitted to the 54th Meeting of the Executive Committee of the Organization.

PAHO/R

AMRO-6200 (-18), Medical Education (inter-Zone)

Objective: To cooperate with the Member Governments in their efforts to improve the teaching programs in medical education in their countries, with special reference to preventive and social medicine, basic sciences, and medical pedagogy.

Probable duration: 1953-

Assistance provided: 9 short-term consultants, 6 temporary advisers, advisory services by Headquarters personnel, and clerical services; costs of the meeting and teaching equipment and supplies.

Work done: An expert group on pediatric education met from 1 to 2 September in Washington, D.C., and formulated several suggestions for the pertinent PAHO program.

A pathologist acting as consultant for the Organization visited 40 medical centers and institutions in 8 Latin American countries to explore the possibility of establishing pathology training centers.

The director of the Regional Training Center at the Institute of Microbiology of the University of Brazil visited medical schools in Bogotá (Colombia), Guayaquil (Ecuador), and Lima (Perú) to discuss with faculty members the possibility of their participating in the PAHO training program in Rio de Janeiro, Brazil.

Two consultants discussed with 32 school officials in 11 countries in Latin America the need for developing a regional project to provide textbooks to the medical students in Latin America and the possibilities of the project becoming a self-supporting one by means of a revolving fund.

Four temporary advisers collaborated in 2 seminars on medical pedagogy, held in San Salvador, El Salvador and Caracas, Venezuela.

A consultant collaborated in the preparation of the Study for the Assessment of the Teaching of Preventive and Social Medicine in Latin America.

A PAHO team examined and discussed with officials of 30 medical centers and institutions in 5 countries of Europe the general aspects of planning schemes of regionalization and integration of health resources and its utilization in medical education.

The XVII Meeting of the Medical Education Information Center was held at the National Institutes of Health, Bethesda, Maryland, on 7 May. Thirty-one experts in the field of international medical education, representing 17 private and public agencies, participated.

PAHO/SFHP, PAHO/G: Milbank Memorial Fund

AMRO-6203 (-237), Medical Education (Zone III)

Objective: To strengthen the teaching programs in medical education in the countries in Zone III by incorporating concepts of preventive and social medicine in the curricula, and by improving the training of medical school teachers and researchers in basic sciences and the pedagogical approach to the teaching of medicine.

Probable duration: 1960-

Assistance provided: 2 short-term consultants; and publications.

Work done: In preparation for the First Seminar on the Teaching of Anatomy in Central America the respective teaching programs in the schools of medicine of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panamá were examined. The seminar was held in San Salvador, El Salvador, from 10 to 13 October.

Delegates of 5 Central American republics, all of them members of the Central American Association of Ana-

tomy, participated in the Seminar. Several teachers of schools of medicine of Central America and 1 professor from the National Autonomous University of México attended as observers. Both consultants collaborated in the organization of this seminar and also took part in the discussions.

PAHO/R

AMRO-6207 (-101), Training of Medical Librarians

Objective: To prepare librarians to serve libraries in medical and public health schools and other biomedical institutions.

Probable duration: 1962-

Assistance provided: Fellowship awards, reported under country projects or Fellowships for Health Services projects.

Work done: The fourth 6-month medical librarian course was conducted at the Inter-American School of Library Science of the University of Antioquia in Medellín, Colombia. One fellow each from Brazil, Honduras, Paraguay, and Perú finished the course in 1965.

AMRO-6208 (-247), Teaching of Statistics in Medical Schools

Objective: To collaborate with interested Governments in the development of medical statistics courses in schools of medicine.

Probable duration: 1961-

Assistance provided: 2 short-term consultants.

Work done: Lectures and consultant services were given at the Institute of Preventive Medicine and at other medical institutions in Fortaleza, State of Ceará, Brazil, and at the School of Medicine of Ribeirão Preto of the University of São Paulo.

Advisory services were provided in the development of courses for the training of auxiliary statistical personnel in the Northeast (Brazil-3103).

PAHO/R

AMRO-6210 (-374), Teaching Methods and Administrative Organization of Medical Schools

Objective: To strengthen medical education through a better pedagogical approach to the teaching of medicine.

Probable duration: 1964-

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Assistance provided: 1 specialist in medical pedagogy.

Work done: A course entitled Laboratory in Human Relations and Medical Teaching was held at the Central University of Venezuela (which has 2 medical schools), in Caracas, from 1 to 13 February, for 28 professors and instructors (2 were from Uruguay). A similar course was held at the School of Medicine of the University of El Salvador, San Salvador, from 11 to 23 October; the 29 participants included 3 from México, 2 from Costa Rica, and 1 each from Honduras and Nicaragua.

Plans were made to hold similar courses at the University of Brazil, in Rio de Janeiro; San José, Costa Rica, for all 6 schools in the Central American countries; Guadalajara, México, for 6 Mexican schools; Lima, for all 6 schools in Perú, and in Montevideo, Uruguay.

Advisory services on medical teaching were given to the University of Chile; the University of El Salvador of San Salvador; the University of San Carlos of Guatemala; the University of Nuevo León, Monterrey, the University of Guadalajara and the Autonomous University of Guadalajara, México; the National University of Asunción, Paraguay; the University of the Republic of Uruguay; and to the 2 schools of medicine of the Central University of Venezuela.

WHO/R

AMRO-6213 Research Training Institutions in Health Sciences

Objective: To establish in Latin America institutions for the training of health-sciences research workers.

Probable duration: 1964-

Assistance provided: 2 short-term consultants, advisory services by Headquarters personnel, and travel and per diem for the 10 members of the expert group; and costs of the meeting.

Work done: An expert group convened by PAHO/WHO met from 18 to 19 March at the Faculty of Hygiene and Public Health of the University of São Paulo, Brasil, to make recommendations for the development of medical research training programs in the field of demography. The group prepared plans to develop courses on medical demography, to be conducted at the University of Chile, in Santiago, and at the University of São Paulo.

PAHO/G: AID

AMRO-6214 Faculty Training for Medical Schools

Objective: To plan faculty-training centers for Latin American medical schools.

Probable duration: 1964-

Assistance provided: 1 short-term consultant and advisory services by Headquarters personnel.

Work done: In collaboration with the pertinent authorities of the University of Antioquia, in Medellín, Colombia, a study was made of the possibilities of developing a regional faculty-training center at the University's School of Medicine.

PAHO/G: KF

AMRO-6215, Pan American Federation of Associations of Medical Schools

Objective: To strengthen medical education in the Western Hemisphere by supporting the work of and cooperating with the Pan American Federation of Associations of Medical Schools.

Probable duration: 1965-

Assistance provided: Office space for the Association and joint planning of medical education projects, including a journal of medical education in Spanish.

Work done: On 7 October the Federation was officially recognized by the PAHO Directing Council as a non-governmental organization representing the schools of medicine in the Americas. A meeting of the Federation's Administrative Committee was held in Washington, D.C., on 2 November.

The Federation established its Headquarters at the Zone V Office and first steps were taken by the Federation and the Organization to develop cooperative activities of mutual interest aimed at strengthening medical education programs in the Americas.

Plans were made to publish a journal of medical education in Spanish.

AMRO-6216, Preventive Medicine Education

Objective: To carry out an assessment of the preventive medicine and community health teaching programs in the medical schools in Latin America.

Probable duration: 1965-1967.

Assistance provided: 1 short-term consultant and advisory services by Headquarters personnel.

Work done: The faculty of the Department of Preventive Medicine of the Medical School of the University of Chile worked out a draft questionnaire to be used in a survey to assess the above-mentioned teaching programs. This questionnaire was being reviewed by experts before pretesting it under field conditions.

PAHO/R

AMRO-6300 (-63), Schools of Nursing

Objective: To provide advisory services in specialized areas of nursing education; to improve the teaching of nursing by providing opportunities for selected members of nursing faculties to make observation visits; and to furnish nursing texts in Spanish to schools of nursing in Latin America.

Probable duration: 1958-

Assistance provided: Nursing literature in Spanish.

Work done: Copies of the Spanish translation of *The Practical Nurse*⁶ were sent to the majority of the schools listed in the Directory of Schools of Nursing in Latin America. Furthermore, 20,000 reprints of the Spanish translation of *Principles of Programed Instruction*⁷ as it appeared in the report on the Melgar, Colombia, 1964 seminar (Informes sobre Enfermería, No. 4) were also distributed to 19 countries in Latin America.

WHO/R**AMRO-6301 (WEST INDIES-12), Nursing Education (Zone I)**

Objective: To assess the nursing resources in countries and territories of the Caribbean; and to carry out a long-term plan for the improvement of nursing education.

Probable duration: 1963-1967.

Assistance provided: 1 nurse educator, 1 short-term consultant, and costs of a seminar.

Work done: A survey of 23 schools of nursing in the English-speaking areas of the Caribbean (see Nursing, Chapter III, *Report of the Director*, 1964) was completed. Thirteen schools were visited in the January-July period. The Board of Review established to evaluate the data gathered met in August in Antigua, and immediately following this a group of 13 senior nursing personnel and 2 representatives of other disciplines (public health and hospital administration, education, finance, and public administration) met in a seminar to discuss the future of nursing education in order to meet the nursing needs of the Area. A final report covering the findings of the survey and the recommendations of the seminar in Antigua was in preparation at year's end.

In the meantime, a progress report pointed out the necessity for providing adequate training to the two categories of nursing personnel that already exist in

the area, as well as of establishing a third category to take over many of the non-nursing duties being carried out by the nursing personnel. The report also contains a recommendation to the effect that a seminar of top staff be held to work out curricula suitable for the adequate preparation of the two categories of nursing personnel; and that a regional nursing body be established to set up standards for schools of nursing and to insure maintenance of these standards. The necessity for additional preparation for tutors (instructors in schools of nursing) for the improved nursing schools was also discussed and note was taken of the first steps already carried out to establish an advanced nursing education program in the University of the West Indies.

PAHO/R**AMRO-6310, Programed Instruction for Nursing Auxiliaries**

Objective: To develop programed instruction courses for nursing auxiliaries in order to train the exceedingly large numbers of untrained personnel currently working in health services in Latin America.

Probable duration: 1965-1969.

Assistance provided: 1 nurse educator (appointed in July and stationed in Lima, Perú); and seminar costs.

Work done: A 6-week workshop to prepare nurses as programers was conducted under the auspices of Teachers College, Columbia University, New York, U.S.A., from July to August. Fifteen participants, including 10 nurses from 8 Latin American countries and 5 PAHO/WHO nursing advisers, wrote the first draft of a programed text on introduction to immunization, which with very little editing could be used for the teaching of basic nursing to English-speaking students. The text was being translated into Spanish and adapted to the level of auxiliary nursing personnel.

A followup visit to all participants of the seminar was begun in México, Central America, and the Pacific coast of South America and will be terminated in early 1966. In general, through series of lectures, the seminar participants were imparting information on programed instruction to other nurses in their countries and were planning to write small units in programed instruction in their various fields of work.

A plan of operations for the training of nurses in the use of programed instruction was drawn up and forwarded to the W. K. Kellogg Foundation with a request for additional funds for the writing and printing of other units.

⁶ Rapiet, Dorothy Kelley *et al.* The C.V. Mosby Company, St. Louis, Mo., U.S.A. 1962.

⁷ Evans, James L., Ph.D. Copyright, 1961, by Teaching Machines, Inc. Translated by G. E. Smith.

VIII. PROJECT ACTIVITIES

The adviser spent 3 months visiting centers where programed materials are prepared, to acquaint herself with new materials which might be adapted to Spanish for use in the training of health workers and especially nursing auxiliaries.

PAHO/SFHP

AMRO-6400 (-1), Sanitary Engineering Training

Objective: To cooperate with the Governments in expanding teaching institutions, revising the pertinent curricula, and promoting training and research activities in sanitary engineering.

Probable duration: 1952-1958; 1964-

Assistance provided: 1 short-term consultant and advisory services by Headquarters, Zone Offices, and country-projects personnel; and supplies and equipment.

Work done: This project coordinated the sanitary engineering educational activities accomplished at the country level.

The UNSF-assisted projects in Brazil and Venezuela started operations during the year. Personnel was being recruited and orders for equipment were placed in accordance with the respective Plan of Operation (see Brazil-6400 and Venezuela-6400).

The program of short courses in sanitary engineering was very much expanded both in number of courses and diversification of subjects. Some 40 courses were held during the year (see Table 27). The average duration of each course was of 2 weeks, and the participants numbered about 1,000. Most of the courses were concerned with water supply subjects such as feasibility studies, management of utilities, design, quality, control, operation and maintenance, hydrology, and ground water development. Subjects dealt with less frequently were environmental sanitation problems in urban developments, food sanitation, operation and maintenance of hospital equipment, urban garbage disposal, use of computers in sanitary engineering, stabilization ponds, and industrial hygiene.

For each type of course a technical manual was prepared, reproduced in mimeographed form, and distributed to the students of the course and other interested persons and institutions. One manual was printed in book format.

Preliminary discussions were held with selected institutions regarding the initiation of research activities in 1966 on a grant basis.

PAHO/SFHP

AMRO-6403 (-360), Sanitary Engineering Education (Zone III)

Objective: To expand and improve the teaching of sanitary engineering at engineering schools and universities in the countries of Zone III.

Probable duration: 1965-

Assistance provided: 7 short-term consultants and teaching services by Headquarters and Zone III personnel.

Work done: 5 short courses were held, 1 each in Costa Rica, El Salvador, Honduras, Nicaragua, and Panamá, at which 103 engineers were trained in basic financial criteria for planning water supply systems. Assistance was provided to the School of Engineering at San Carlos University, in Guatemala, in the preparation of a 40-hour Postgraduate Course in Sanitary Engineering and in fostering interest in Central America in the 1966 course.

PAHO/R

AMRO-6407 (-361), Training of Sanitary Inspectors

Objective: To hold a 3-month course to train sanitation supervisors for the countries of Central America and Panamá.

Probable duration: 1965-

Assistance provided: 1 short-term consultant and teaching services by personnel of Zone III Office; travel and per diem for 10 fellows; and a grant for teaching materials.

Work done: A course for sanitation supervisors was held from 16 August to 12 November at the School of Sanitation Training of the Ministry of Public Health and Social Welfare, in El Salvador, for 16 students from most countries of the Zone.

PAHO/R

AMRO-6600 (-284), Dental Education

Objective: To assist university authorities of interested countries in improving teaching in the schools of dentistry.

Probable duration: 1963-

Assistance provided: Advisory services by the Regional Adviser; and a limited amount of equipment and supplies.

Work done: The Organization assisted the University of Concepción, in Chile, in preparing a plan for teaching preventive and social aspects of dentistry at its School of Dentistry. Assistance was provided to the University of

El Salvador in reorganizing its Department of Preventive and Social Dentistry and, at the end of the year, a draft agreement was prepared to allow the Department to extend its activities into 1966.

The National University of Colombia established, in its Department of Medicine and Preventive and Social Dentistry, a Dental Section for the purpose of teaching preventive and social aspects throughout the entire period of training for the career of dentist.

The Organization assisted in reorganizing the course of studies of the School of Dentistry of Ica, in Perú, and prepared a plan of activities for the visit of the dean to Colombia, El Salvador, Guatemala, and Venezuela.

Assistance was provided to the Central University of Venezuela in reorganizing the Department of Preventive and Social Dentistry and its curriculum, as well as in the preparations for selecting certain communities for the practice of dental students and in establishing an integrated clinic for students in the last year of studies. Assistance was given also in the preparations for a round-table meeting for dentists of the Ministry of Public Health and Social Welfare and professors of the School of Dentistry of the Central University and for a national seminar on the teaching of dentistry.

The Organization participated in organizing and developing a Hemisphere-wide conference on dental health in the Americas, which was held in Puerto Rico in October and was attended by delegates from all countries of the Americas and by the directors of the schools of public health of Argentina, Brazil, Colombia, México, and Puerto Rico.

A mechanism for communication among the 86 dental schools in Latin America was established by issuing a directory which lists all such schools. Educational material was distributed to the 86 schools.

WHO/R

AMRO-6607 (-257), Seminar on Dental Education

Objective: To examine the current state of dental teaching, discuss existing problems, and formulate recommendations for their solution.

Probable duration: 1962-

Assistance provided: Advisory services by the Regional Adviser; and translation and publication services.

Work done: *Scientific Publication* 121, on the Second Seminar (México City, 1964), including final report and working documents, was prepared, and the distribution of 2,500 copies to all dental schools in the Americas was begun.

In preparation for the Third Seminar, to be held in Brazilia, Brazil, in November 1966, a questionnaire was prepared to serve as the basis for a study of the state of dentistry in Argentina, Brazil, Paraguay, and Uruguay.

PAHO/R, PAHO/G: KF

AMRO-6608 (-390), Training of Auxiliary Dental Personnel

Objective: To promote the training and utilization of various kinds of auxiliary personnel so that the application of dental preventive and restorative measures may be extended to an increasing number of the population, and so as to increase the productivity of the dentist and thus reduce dental costs.

Probable duration: 1965-

Assistance provided: 2 short-term consultants and advisory services by the Regional Adviser.

Work done: Material was prepared at Headquarters and distributed to Latin America to arouse the interest of dental schools and services in the proper utilization of auxiliary personnel. One of the consultants studied the utilization of auxiliary personnel in the United States and England, with a view to its possible application in Latin America.

Technical advisory services were provided in Argentina in a reorganization of the course of study for dental hygienists, a course which was recently established by the health services of the Argentine Armed Forces.

Assistance was given to the University of Antioquia, Colombia, in the preparation of a request for financial assistance, which was approved by the W. K. Kellogg Foundation, as well as in the preparation of a plan to establish regular courses for dental assistants and dental hygienists and in the adoption of methods for selecting future students.

In Venezuela assistance was furnished to the National Dental Association, which is in charge of training dental assistants in the country, in planning and carrying out a round-table meeting on study plans in which directors of all schools for training dental assistants in the country participated.

WHO/R

AMRO-6609, Latin American Association of Dental Schools

Objective: To establish a central office for the permanent secretariat of the Latin American Association of

VIII. PROJECT ACTIVITIES

Dental Schools (ALAF0); and to promote dental training and research in order to improve dental health.

Probable duration: 1965-1968.

Assistance provided: Advisory services by the Regional Adviser; and a grant to the Association.

Work done: A plan requesting financial assistance was prepared for presentation by ALAF0 to the American Dental Association and the W. K. Kellogg Foundation. A plan of activities for the ALAF0 secretariat was also prepared. Assistance was given to ALAF0 in equipping the secretariat, which was established in San Salvador, El Salvador.

PAHO/G: ADA

AMRO-6700 (-10), Biostatistics Education and Population Dynamics

Objective: To improve vital and health statistics in the countries of the Hemisphere by training technical and professional personnel in specialized centers.

Probable duration: 1952-

Assistance provided: A grant to the School of Public Health in Chile; and the following fellowships:

Awards	Country of origin	Field of study	Country of study	Months
1	Argentina	Vital statistics	Chile	9½
1	Brazil	Health statistics	Ditto	9½
1	Colombia	Vital statistics	Ditto	9½
1	Costa Rica	Health statistics	Colombia	6
1	Ecuador	Organization of medical education (biostatistics)	Chile	16
1	Ecuador	Vital statistics	Colombia	6½
1	Ecuador	Ditto	Ditto	6
1	El Salvador	Ditto	Chile	9½
1	Uruguay	Vital and health statistics	Argentina	9
1	Uruguay	Vital statistics	Ditto	8½
1	Venezuela	Public health administration (vital statistics)	Chile	16

Work done: The School of Public Health of the University of Chile was providing a 15-month course with specialization in biostatistics. Enrolled in the part for specialization in biostatistics were 3 students from Brazil, 4 from Chile, and 1 each from Argentina, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, and Venezuela; 11 of these students attended with fellowships awarded by the Organization (*see above*).

The School's program for biostatistics education was redesigned to include instruction on health aspects and population dynamics; a new 4-month course was planned

for 1966, and an announcement on the new program was released.

WHO/UN-TA

AMRO-6707 (-85), Latin American Center for the Classification of Diseases

Objective: To study problems related to medical certification of causes of death; to give instruction on classification of causes of death, in accordance with the International Classification of Diseases; and to collaborate in the preparation of the decennial revisions of the Classification.

Probable duration: 1955-

Assistance provided: 1 temporary adviser; and a grant to the Center.

Work done: The Latin American Center for the Classification of Diseases, situated in Caracas, Venezuela, conducted 1 course in Buenos Aires, Argentina, for 47 students; 1 in Belo Horizonte, Brazil, for 30 students of several states of the Northeast; 1 in Quito, Ecuador, for 52 students; and 1 in Kingston, Jamaica, for 28 students taking the 4-month course for statisticians, held in that country.

The Center collaborated in the preparation of teaching material in Portuguese (*see Brazil-6700*).

The Center published Pautas de Nosología for 1962, 1963, and 1964.

PAHO/R, WHO/R

AMRO-6708 (-156), Training Program in Hospital Statistics

Objective: To provide training to personnel working on medical records and hospital statistics, in order to develop essential data for planning for health and medical services.

Probable duration: 1961-

Assistance provided: 2 advisers in medical records and 1 short-term consultant.

Work done: In Argentina, 40 students were trained in a 14-day course on hospital statistics held in Tucumán, and in La Plata 30 were trained in the use of the International Classification of Diseases, adapted for the indexing of hospital records. Advice and teaching assistance were provided for the course for statistical technicians conducted at the School of Public Health of the University of Buenos Aires. Demonstration Centers were being developed at the Gregorio Aráoz Alfaro Polyclinic, at Lanús, and in the Health Center of Ciudadela, both in the Province of Buenos Aires.

The National Health Service in Chile initiated a training program for medical-record auxiliary personnel and planned twenty 2-week courses for 8 students each. To prepare instructors to carry out this program a 2-week course was held for 11 statisticians in Santiago in July.

A 3-week course for instructors in medical records was sponsored by the Ministry of Health and Social Welfare of Venezuela with assistance from the Organization. The objective of this course was to prepare personnel with prior training and experience to teach courses in medical records at the intermediate level. Five students from Venezuela and 1 each from Argentina, Chile, Colombia, and Costa Rica attended the course.

Assistance was given in planning the medical-record portion of the courses for auxiliary personnel in Costa Rica, Guatemala, and Honduras and for training intermediate-level personnel in Argentina, Colombia, Jamaica, and Perú. Instruction on hospital statistics was given in the course in hospital administration in São Paulo, Brazil. Consultant services on the organization of medical records were furnished to El Salvador and to Trinidad and Tobago.

PAHO/SFHP

INTER-REGIONAL-3, FAO/WHO Training Course on Veterinary Public Health (Meat Hygiene)

Awards	Country of origin	Country of study	Weeks
1	Chile	Denmark	5
1	Venezuela	Ditto	5

WHO/UN-TA

INTER-REGIONAL-18, Exchange of Scientific Workers (Malaria Eradication)

Awards	Country of origin	Country of study	Months
1	México	Italy, England	1½
1	United States of America	Belgium, Germany, Israel, United Kingdom	2

WHO/MESA

INTER-REGIONAL-107, Training Course on Enteric Infections

Awards	Country of origin	Country of study	Months
1	Brazil	Hungary	1
1	México	Ditto	1
1	Perú	Ditto	1
1	Venezuela	Ditto	1

WHO/UN-TA

INTER-REGIONAL-113, Training Course on Epidemiology and Control of Tuberculosis

Awards	Country of origin	Country of study	Months
1	Argentina	Italy, Tunisia	3
1	Ditto	Czechoslovakia, Denmark	4½
1	Brazil	Italy, Tunisia	3
1	British Honduras	Czechoslovakia, Denmark	4½
1	Ecuador	Italy, Tunisia	3
1	México	Ditto	3

WHO/UN-TA

INTER-REGIONAL-117, Medical Rehabilitation Courses

Awards	Country of origin	Country of study	Months
1	Argentina	Copenhagen, Norway, Sweden, United Kingdom	9
2	Brazil	Ditto	9

WHO/R

INTER-REGIONAL-120, Anesthesiology Training Course

Awards	Country of origin	Country of study	Months
1	Brazil	Denmark	14
1	Dominican Republic	Ditto	14
1	El Salvador	Ditto	14
1	México	Ditto	14
1	Panamá	Ditto	14

WHO/UN-TA

INTER-REGIONAL-222, Traveling Seminar on Public Health Aspects of Housing

Awards	Country of origin	Country of study	Months
1	Brazil	Soviet Union	4
1	México	Ditto	4

WHO/UN-TA

INTER-REGIONAL-238, Seminar on the Epidemiology and Control of Road Traffic Accidents

Awards	Country of origin	Country of study	Days
1	Brazil	United Arab Republic	8
2	United States of America	Ditto	8

WHO/R

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INTER-REGIONAL-240, Seminar on Occupational Health in Agriculture

<i>Awards</i>	<i>Country of origin</i>	<i>Country of study</i>	<i>Weeks</i>
1	Argentina	Soviet Union	2
1	Brazil	Ditto	2
1	Colombia	Ditto	2
1	Cuba	Ditto	2
1	México	Ditto	2
1	Venezuela	Ditto	2

WHO/R

INTER-REGIONAL-252, Training Course on Immunofluorescent Techniques

<i>Awards</i>	<i>Country of origin</i>	<i>Country of study</i>	<i>Days</i>
1	Argentina	Denmark	10
1	Colombia	Ditto	10
1	Perú	Ditto	10

WHO/UN-TA

INTER-REGIONAL-292, Traveling Seminar on Organization of Mental Health Services

<i>Awards</i>	<i>Country of origin</i>	<i>Country of study</i>	<i>Weeks</i>
1	Chile	Soviet Union	3

<i>Awards</i>	<i>Country of origin</i>	<i>Country of study</i>	<i>Weeks</i>
1	Perú	Ditto	3
1	Venezuela	Ditto	3

WHO/UN-TA

INTER-REGIONAL-293, Traveling Seminar on Plague Control

<i>Awards</i>	<i>Country of origin</i>	<i>Country of study</i>	<i>Months</i>
1	Brazil	Soviet Union	1
1	Ecuador	Ditto	1
1	Perú	Ditto	1
1	Venezuela	Ditto	1

WHO/UN-TA

INTER-REGIONAL-295, Seminar on Entomological Methods in Vector Control

<i>Awards</i>	<i>Country of origin</i>	<i>Country of study</i>	<i>Months</i>
1	Bolivia	Soviet Union	1
1	Brazil	Ditto	1
1	Cuba	Ditto	1
1	Venezuela	Ditto	1

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ICAITI, see Central American Institute of Investments and Industrial Technology

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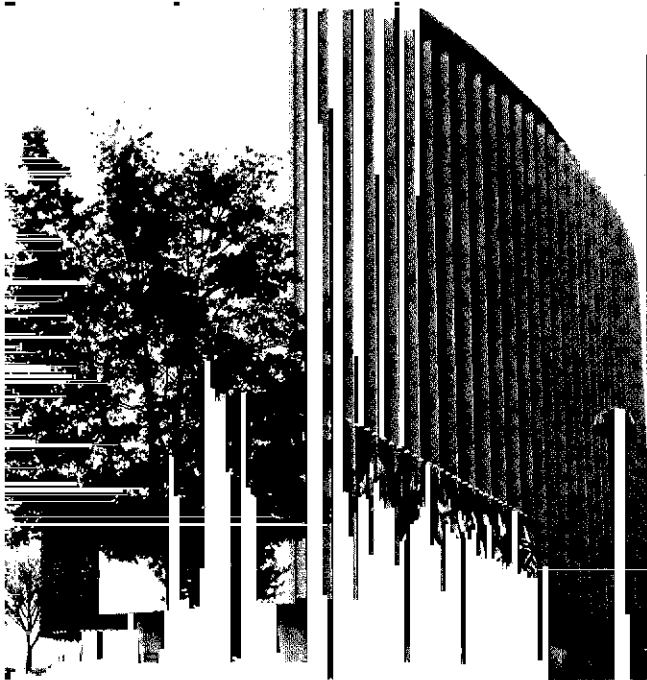
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Flags rippling in the breeze on Inauguration Day of the new PAHO Headquarters building proclaim Membership in efforts to obtain better health for the Peoples of the Americas.