

ANNUAL REPORT



OF THE DIRECTOR

1960

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

The Pan American Sanitary Bureau is the executive arm
of the Pan American Health Organization; it is also
the Regional Office of the World Health Organization.

INDEXED

ANNUAL REPORT OF THE DIRECTOR

of the

**PAN AMERICAN SANITARY BUREAU
REGIONAL OFFICE FOR THE AMERICAS**

of the

WORLD HEALTH ORGANIZATION

1960

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PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION
1501 New Hampshire Avenue, N.W.
Washington 6, D. C.

To the Member States of the Pan American
Health Organization

I have the honor to transmit herewith the Annual Report of the Pan American Sanitary Bureau, Regional Office for the Americas of the World Health Organization, for the year 1960. This Report covers the work of the Washington Office as well as a summary of the projects implemented in collaboration with the Governments of Member States and with other international organizations. The Financial Report for the year is submitted separately.

Respectfully yours,

A handwritten signature in cursive script, appearing to read 'A. Horwitz', with a long horizontal flourish extending to the right.

Abraham Horwitz
Director

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ABBREVIATIONS

AIA	American Institute of Architects
AIDIS	Inter-American Association of Sanitary Engineering
CCAQ	Consultative Committee on Administrative Questions
CNEP	National Malaria Eradication Commission (Mexico)
CREFAL	Latin American Regional Fundamental Education Training Center
ESAPAC	<i>Escuela Superior de Administración Pública de América Central</i>
FAO	Food and Agriculture Organization
IAEA	International Atomic Energy Agency
ICA	International Cooperation Administration
ILCE	Latin American Educational Film Institute
INCAP	Institute of Nutrition of Central America and Panama
INNE	National Institute of Nutrition of Ecuador
MEIC	Medical Education Information Center
NIH	National Institutes of Health
OAS	Organization of American States
OAS/PTC	OAS-Program of Technical Cooperation
OIE	International Office of Epizootics
OIRSA	Regional International Organization for Health in Agriculture and Livestock
PAHO	Pan American Health Organization
PAHO/SMF	PAHO—Special Malaria Fund
PASB	Pan American Sanitary Bureau
PAU	Pan American Union
PAZC	Pan American Zoonoses Center
SESP	Special Public Health Service Foundation (Brazil)
UN	United Nations
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund
USA	United States of America
USIA	U.S. Information Agency
USPHS	U.S. Public Health Service
W.I.F.	West Indies Federation
WHO	World Health Organization

ACTIVITIES IN 1960

Director's Introduction

EXCERPT FROM THE

Act of Bogotá



September 13, 1960

* * *

D. Measures for the improvement of public health

1. *The re-examination of programs and policies of public health, giving particular attention to:*

a. strengthening the expansion of national and local health services, especially those directed to the reduction of infant mortality;

b. the progressive development of health insurance systems, including those providing for maternity, accident and disability insurance, in urban and rural areas;

c. the provision of hospital and health service in areas located away from main centers of population;

d. the extension of public medical services to areas of exceptional need;

e. the strengthening of campaigns for the control or elimination of communicable diseases with special attention to the eradication of malaria;

f. the provision of water supply facilities for purposes of health and economic development;

g. the training of public health officials and technicians;

h. the strengthening of programs of nutrition for low-income groups.

* * *

DIRECTOR'S INTRODUCTION

In 1960, there occurred in the Americas a series of events that has lent significant support to the doctrine of health as a basic component of economic development. How to interpret that doctrine, which today guides the activities of the Pan American Health Organization, how to translate it into practice, and what are its implications at this point in the life of our Continent were the subject of extended debate. That debate, which was carried on not only within the Governing Bodies of the Organization, but also in international credit institutions and in scientific societies concerned with economics and with public health, has made it possible to define concepts more accurately, to demarcate responsibilities, to break down compartmentalism, and to give due emphasis to the interrelationship between economic growth and social progress.

Rational Bases of Economic Systems

It would seem pointless to continue to discuss whether well-being is to be a long-term consequence of over-all development accompanied by a high level of consumption, or whether it should be the concomitant of balanced economic and social growth. The first thesis disregards the rational bases of every economic system which, in principle and in practice, should aim at improving the living conditions of human beings. An economic system cannot concern itself merely with the so-called economic factors—natural resources, manpower, savings, investment, and the like; of equal importance are the physical and intellectual energy of men, their creative capacity, their spirit of cooperation and of enterprise, their sense of responsibility, and their power to produce and to consume. In our view, what must be done is to plan the production of goods and services in such a way as both to satisfy the basic needs of a growing population and to leave a sufficient surplus to be ploughed back to increase production. Seen from this viewpoint, economic development and social progress are integral parts of the same process, and they should go forward hand in hand and keep step with population growth.

Latin America Today

Unfortunately, the state of things in Latin America today is very different. The reports of the United Nations Economic Commission for Latin America show that in

the period 1955–1960 economic development as a whole has barely kept ahead of the population increase. The annual increase of per capita production has fallen from 3.6 per cent in 1955 to 0.3 per cent in 1959. Provisional data for 1960 do not betoken any significant increase over the year before: what they do show is a 2 per cent fall in agricultural production per capita. If to an annual 2.6 per cent population increase during the same period is added a fall in national income resulting from an adverse movement of export prices, it is not difficult to understand the nature of the economic and social problems that have confronted the Region in recent years.

At the same time—and it is a matter worthy of notice because of its profound implications—the causes of these problems and possible solutions to them have been thoroughly discussed. This has led to a better understanding of the part played by factors such as industrialization, essential fiscal and taxation reforms, better utilization of land, fluctuations in the amounts and the prices of the principal export commodities, the control of inflation, the training of technical personnel, the adoption of methods to increase productivity, savings, the ploughing back of profits, the common market, the complementary role of credits from external sources, and the advisory function of international organizations in the major aspects of social welfare and economic development. Throughout this discussion it was clearly recognized that radical changes in legislation, in government institutions, and in the orientation of the private sector would be necessary if improvements in the living conditions of individuals and of societies—the aim of economic development—were to be brought about.

Importance of Planning

The indispensable function of credits from external sources and the way in which such credits should be invested have also been discussed. In the face of problems so acute and resources so limited—a situation often aggravated by an investment policy that takes no account of priorities—the need for planning has become more and more evident; for planning enables the knowledge, experience, equipment, and capital of each country to be put to better use. The vast natural resources of Latin America and the abilities of its peoples could, it is generally agreed, be the bases for progressive economic growth and better

social welfare. The attainment of periodic goals is more feasible—so experience shows—if there is advance planning of programs to deal with priorities in each country, bearing in mind local conditions.

Act of Bogotá

During the past year the most notable expression of this debate on the destiny of Latin America was the Act of Bogotá. That document summarizes the deliberations of the Third Meeting of the Special Committee to Study the Formulation of New Measures for Economic Cooperation, known as the Committee of 21, of the Organization of American States, which took place last September. It relates social progress to “conditions of rural living and land use; housing and community facilities; educational systems and training facilities; public health; mobilization of domestic resources.” It creates a Special Fund for Social Development, whose purpose it is to “contribute capital resources and technical assistance on flexible terms and conditions, including repayment in local currency and the relending of repaid funds in accordance with appropriate and selective criteria, in the light of the resources available, to support the efforts of the Latin American countries that are prepared to initiate or expand effective institutional improvements and to adopt measures to employ efficiently their own resources with a view to achieving greater social progress and more balanced economic growth.” Chapter III of that document, which deals with measures for economic development, couples them with the need for additional funds from internal and external sources for financing each country’s plans for the progressive development of its economy.

The Act of Bogotá is the crystallization of a doctrine whose enunciation by senior representatives of the Governments of the Continent was as opportune as it was necessary. The recognition that “economic development programs, which should be urgently strengthened and expanded, may have a delayed effect on social welfare and that, accordingly, early measures are needed to cope with social needs” must be interpreted as a decision to give the problems affecting most of the peoples of the Hemisphere the priority they have not as yet enjoyed in the economic policy of each country and in the allocation of funds. For Governments, for public and private institutions, for persons genuinely interested in the welfare of the individual and of the community and in the progress of their countries and of the Continent as a whole, the Act of Bogotá is both a great opportunity and a great responsibility. The next stage must be to translate into practice the economic and social ideas that give form and substance to the Act and to embody its doctrine into a broad movement of social progress. Of greater value even than the resources that must be assigned is the determination of the Governments to overcome all obstacles that hamper their efforts to improve the living conditions of their peoples. This attitude must act as

a stimulus to the international organizations that serve them. It has fallen to the lot of the Pan American Health Organization to play an active part in the several meetings of the Committee of 21 and to assist with the drafting of the Chapter on Public Health in the Act of Bogotá. If that Chapter is examined, it will be seen that all the major health problems that affect the Continent are covered. Only time will tell how many of the hopes of today will be the achievements of tomorrow.

Financing of Economic Development

Another major event of direct import to the activities of the Organization was the opening of the doors of the Inter-American Development Bank in October 1960. That institution, besides being a bank in the usual acceptance of the word, is becoming an institution for financing essential phases of the economic and social development of the Americas; accordingly, its technical advisory functions are growing in importance. Its Fund for Special Operations is intended for the financing of social welfare programs, among which the Bank has included sanitation, in particular water supply and sewage disposal. Further support for this policy is available from the Fund for Social Development, established under the Act of Bogotá, which will be administered by the Bank. With the initial contribution of the Government of the United States of America, that Fund will, it is understood, amount to 394 million dollars. We said in this connection in the Annual Report for 1959: “The willingness of the Governments to undertake water-supply programs will certainly be a fundamental incentive for changing the policy of the international capital market toward granting loans in this field. The advisory function of international organizations may be of influence in the technical, administrative, legal, and financial aspects, as well as in the training and preparation of the national experts for planning and implementing the services.” This view, perhaps, played no small part in the decision of the Inter-American Development Bank.

Sanitation Problems

The same may be said of the efforts of the Pan American Health Organization and of the World Health Organization which, in recent years, have demonstrated the importance of sanitation in the solution of the basic health problems of the Continent and the significance of water for the development of agriculture, industry, tourism and, in general, for economic growth. Despite the magnitude of the problem, the interest other international credit institutions are also showing appears to hold the promise of a progressive improvement in sanitation in the years to come, along the lines of the policy approved by the Governing Bodies of the Pan American Health Organization. We should like to emphasize that the organization and administration of sanitation services presupposes institutional changes within Govern-

ments and, at the same time, a greater understanding on the part of communities, their cooperation, and their willingness to help finance such programs.

It is gratifying to note that the first project approved by the Inter-American Development Bank since it began its operations was the granting of a loan of \$4,000,000 to the Sanitation Corporation of Arequipa, Peru. Together with a similar investment by the Government and by the Municipality of Arequipa, that loan will make it possible to construct water supply and sewage disposal systems that will meet the needs of the population for the next 50 years. Our Organization provided advisory services at all stages preparatory to the formulation of the plan and continues to do so, at the request of the Government, in connection with the design of the installations. Several other Governments have expressed interest in similar projects and these will be submitted to the Bank for consideration in the course of the coming year. We thus see that there is a move towards the solution of a fundamental problem that today affects more than 100 million people in the Americas.

Decisions of the Directing Council

We stated earlier that the year 1960 has been characterized by various events that led to the strengthening of the present policy of the Organization—to make health a basic component of economic development. Mention has already been made of two events of fundamental importance. Of equal value, in our opinion, were the discussions and the resolutions at the XII Meeting of the Directing Council of the Pan American Health Organization, which was held in Havana, Cuba, in August 1960. That policy was amply confirmed during the discussions of the Annual Report for 1959, and four of the resolutions adopted referred specifically to it. Resolution XVI—Economic Aspects of Malaria Eradication—suggested to Governments that in their economic development plans recognition be given to the importance of the malaria eradication program. It also recommended that the Pan American Sanitary Bureau study the possibility of devising methods for evaluating the social and economic significance implicit in the speedy elimination of the disease. Resolution XX—Progress Report on Community Water-Supply Programs—described those programs, in its preamble, as an indispensable measure for the social and economic development of the populations concerned and emphasized the importance of international credits for financing them. By Resolution XXVII, the topic for the Technical Discussions to be held at the XIII Meeting of the Directing Council in October 1961 will be “Methods of Evaluation of the Contribution of Health Programs to Economic Development,” the very formulation of which reveals the thinking of the members of this Governing Body and the value they assign to it for the future of the Organization. Finally, Resolution XXIII—Economic Aspects of Health Activities—requested the Director of the Pan American Sanitary Bureau, pursuant to Article 23 of our Constitution, to discuss with the Organization of American

States and other institutions interested in or connected with public health how common interests in the economic field could be further developed.

These, then, are the general events in 1960 that lead us to believe that the Member Governments wish to give due importance to health activities, both national and international, because they are fundamental to the social progress that should accompany economic growth.

Expansion of PAHO Program

Side by side with these steps to strengthen its policy and to adjust its practice to the present situation in the Americas, the Organization in 1960 had extended its general program of work. In the body of the Report will be found an account of the major results of 288 projects designed to protect, promote, and restore health. In view of the eminently advisory nature of our functions, it will be understood that only the tangible results have been mentioned, whether as the outcome of specific purposes or as activities carried out as part of a particular project. It goes without saying that there is much in the daily give and take of international collaboration which has immediate or long-term consequences that do not lend themselves to measurement or even to expression in words. The daily discussion of a consultant with his national counterpart, in which they examine successes and failures and decide on the steps to be taken to attain the end in view, is one of the most solid grounds for the success of every program. This process reflects the desire to further the common good animating all the participants in these endeavors and is part of the unselfish exchange of ideas and experiences that is the essence of international cooperation. In 1960, 837 members of the Organization dedicated themselves to our cause—the health and welfare of the men and women of this Continent. They came from 44 countries of the world, yet 90 per cent of them were from the Americas. Apart from the specific functions of this staff, it is an interesting sociological experience to observe the subtle process of interpersonal relationships between persons with different cultural backgrounds who are motivated by higher purposes.

Prevalent Problems

The health problems that beset the inhabitants of the Continent were no different in their nature from those already known. The most prevalent arise from a failure of the human organism to resist or to adjust to the stimulus of its mediate or immediate environment. Man is a gregarious animal who reacts directly or indirectly to all the other elements—physical, biological, psychological and social—of his environment. In this continuous and silent process the most prevalent diseases originate from his capacity to react to all stimuli and from their concentration and pathogenic action.

As in previous years there were the familiar problems of defective sanitation, communicable, acute and chronic

diseases, malnutrition, the care of different types of patients, ignorance with respect to the origin and prevention of diseases, and insanitary housing. The priorities varied from country to country as well as from region to region within the same country. At the origin of these problems biological causes are intimately commingled with social causes, which explains why better results are obtained when they are tackled by means of programs that take all relevant factors into account. We should like to emphasize that diseases usually have multiple causes and that the integration of public health and social welfare activities is the policy that gives the most lasting results.

In dealing with each specific process the Governments applied proven methods, using organized services, trained personnel, investigation of more efficient procedures, and program planning. These tools are employed in all medical activities, whether directed toward the individual or the collectivity, and must be kept under continuous review so that they can be improved.

Advances Made

If the projects in which the Organization has collaborated during the year—a summary of which appears at the end of this Report—are taken as a whole, it will be seen that real advances have been made. Naturally, results have not always affected the size of the national problem and, consequently, morbidity and mortality rates. In a special category, of course, are projects for the demonstration of organization and methods and certain training projects. However, it must be kept in mind that the population is increasing at the rate of 2.6 per cent a year, without there being any proportional increase in the economic resources, personnel, and means with which to attend to these new needs.

Nevertheless, all the information on the Bureau's activities in 1960 breathes progress, reveals the experience acquired, and charts more clearly the course to be followed in order to promote health and, consequently, social welfare.

The sequence of the chapters in the body of the Report corresponds to the main lines of the general program of work of the Organization. As in all classifications this arrangement is an artificial one, intended to facilitate the discussion, on the one hand, of a complex problem such as that of health as a fundamental element in all societies and, on the other hand, of a diversified program which, although broad in scope, comprises only responses to the problems most often encountered in each community. In the successive chapters of the Report an account is given of the efforts of the Governments to improve basic health services at the national and local level; to control or eradicate the most prevalent communicable diseases; to promote education and training; and to foster scientific research. There is also a summary of the activities of the Organization and of its Governing Bodies and of the general administration of the Pan American Sanitary Bureau. Nevertheless it is not

difficult to see that the arrangement is an artificial one and that the activities described in each country are interrelated. All go to make up that higher purpose that is embodied in the policy of the Organization, as described above. We should be pleased if in the future the coordination of preventive and curative efforts with economic development were more clearly to be seen in the programs carried on by Governments, whether or not with international assistance. The idea of planning economic and social development is not yet sufficiently rooted in the countries of the Continent. Only a few of them have the necessary juridical structures and institutional forms for this purpose. Given the magnitude of the problems, the present tendency is for ministries to take care of immediate needs, which are not always those of the greatest social consequence. That is why coordination, even when attempted, is not always clearly reflected in the national or local plan.

Integration of Efforts

In Latin America the integration of all efforts for the protection, promotion, and restoration of health must become a reality. To that end the Organization has devoted increasing efforts in recent years, either by means of its programs of education or the direct action of its consultants. It is clear that this concept and its implications are being discussed more thoroughly in schools of public health. To our mind there is no doubt that in the prevention and protection of health emphasis has been placed on the family as a unit. Medical care has not always been given the degree of importance and urgency consonant with the extent of the problem and the sums at present being invested. Aside from this, there is no justification from the point of view of the natural history of disease in separating curative from preventive functions in the organization and administration of health services. The more efficient these services are, the easier it will be for them to be taken into account and to be associated with measures for economic development, whether intended to promote industry, agriculture, education, or housing, to cite but the most important. In this way, it will be possible to implement the present policy of the Organization, to which we have referred above.

In spite of these limitations, we are convinced that the health technicians trained in the last 10 years as the result of the collaboration given by the international organizations working in the Hemisphere have helped to disseminate the thesis of integration. For in talking about how to understand and tackle public health problems a new way of speaking is being used today in the Americas. The direct advisory services of consultants in local programs or national institutions have had a similar effect. In this connection, the Pan American Sanitary Bureau collaborated in 1960 with 17 Governments of the Continent. The details of this cooperation are to be found in the chapter on Public Health Administration. In some countries a good local

experience has led to cooperation being extended to institutions in other states or provinces; in others the Government has been more concerned with the national level, with a few demonstration projects in particular communities. In all the countries progress has been made and is clearly reflected in the better quality of the care provided. The experience of organizations, whatever the nature of their activities, shows that social gains are made in proportion as improvements are introduced into organizational structures, administrative procedures for translating ideas into practice, techniques and work methods, and in the preparation and training of personnel. In the course of the past year 740 officials, both professional and auxiliary workers, attended courses conducted in conjunction with integrated health services projects. The details of this training are given in Table 2 of the chapter on Public Health Administration.

We should like to draw attention to the interest shown by some Governments in bringing their health legislation up to date and the assistance given by the Organization in this connection. The laws in force in many of the countries need to be revised in order to take into account the knowledge at present available as a result of scientific research in biology, medicine, and public health, and the growing interest of communities in the solution of the social problems that affect them.

Establishment of Career Services

Another fact worthy of mention is the increasing attention that has been given to the creation of more full-time posts and the establishment of career services that will attract and retain qualified personnel. While this idea has been making progress in the Continent in the last 10 years, the worsening of the general economic situation has substantially reduced the purchasing power of salaries. This has led to repeated resolutions by the Governing Bodies of the Organization, urging the Member Governments to give particular attention to the problem. In promoting and achieving progress there is no substitute for men. In public health activities, machines and material resources in general are of less value than in other endeavors; the great educational content of public health activities necessitates personal contact and close human relations. Because of this, the personnel of such services are a vital element for which there is no substitute.

In the field of public health administration the Organization has increased both the number and type of services in response to the requests of the Governments. To the now classical activities of general administration, nursing, environmental sanitation, and vital statistics, recent years have seen the addition of medical care, nutrition, mental health, health education, and radiation protection. It is evident that it has not been possible to give all problems the same attention, not only because they differ in extent and

because the techniques for solving them vary in their effectiveness, but also because the funds at the disposal of the Governments and of the Organization are limited.

Water Supply Programs

When it is recalled that there are in the Americas today 110 million persons who for all practical purposes are without a safe supply of drinking water, the social and economic significance of such a situation is immediately obvious. Of these persons, 30 millions live in communities of more than 2,000 inhabitants and the remainder in rural areas. Repeated resolutions of the Governing Bodies of the Pan American Health Organization and of the World Health Organization have specified the technical, administrative, legal, and financial aspects of this problem; have recognized the need for international collaboration by establishing a Special Fund financed by voluntary contributions; have clearly defined the role of Governments and of communities, motivated by a common interest; and have emphasized the necessity for long-term, low-interest loans from international sources for the purpose of carrying out water programs.

We have already referred to the extremely important part being played in this effort by the Inter-American Development Bank, and we are confident that in the near future this action will be extended and other credit institutions will adopt a similar policy.

Of the Organization's activities in this field in 1960, details of which appear in the corresponding chapter of the Report, mention should be made of the two training courses on the Administration, Management, and Financing of Water Supplies, one of which was held at the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio, and the other at the School of Engineering of the University of Mexico. These courses were attended by 95 engineers in all. In addition, a Seminar on Water Rates held in Montevideo was attended by 60 engineers. The Organization also sent three specialist-consultants to the Seminar on Pollution of Sources of Water Supplies held in Rio de Janeiro. Several countries began to prepare plans designed to provide the whole population with water for the next 10 years to 20 years. In other programs, details of which are included in the same chapter, the Organization provided advisory services for the preparation of water projects for certain urban areas, for which loans from domestic and external sources might be available, as well as for certain rural areas.

Nutrition

With respect to nutrition, it is stated in the Report that "in the final analysis, the problem of nutrition is the inevitable result of the sum of a country's economic, social, cultural, agricultural, and health conditions. The policy of the Organization is to collaborate with Member Governments in seeking formulas for establishing a well-oriented course

of action and to assist them in coordinating all national efforts to improve the nutritional status of their peoples.” In order to further this policy, three new posts of consultants in nutrition were established in 1960, one at the regional level and the other two in the Zones. Expanded nutrition programs were begun in three countries, which brings to six the number of countries in which this type of project is being carried out with the collaboration of UNICEF, FAO, and the Organization. In a further six countries preliminary studies were made for similar projects that are to be developed next year. We hope that in the future this type of program will be extended in each country of the Continent in areas where malnutrition is widespread, especially in rural areas. To sum up, efforts are being made to improve the nutritional status of the population by intensifying the local production of foodstuffs and through the education in nutrition of individuals and families.

The research that resulted in the preparation of INCAPARINA by the Institute of Nutrition of Central America and Panama has served as a stimulus to the investigation of other mixtures rich in vegetable proteins. This research is being carried on in several countries of the Continent. Resolution VII of the XII Meeting of the Directing Council recognized the value of INCAPARINA and similar mixtures in campaigns against malnutrition and instructed the Pan American Sanitary Bureau to collaborate with the Governments to this end. It must again be emphasized that INCAPARINA or any similar preparation is not a medicament, but a food, and that it is not intended as a substitute for animal protein. Nevertheless, until Governments can count on a sufficient supply of these proteins, mixtures such as INCAPARINA—which has been found to have the nutritive value of milk and to cost much less—are admirable weapons in the struggle against malnutrition and its consequences.

In spite of the fact that a simple method of producing iodized salt is available, there are more than 30 million persons suffering from endemic goiter in the Americas. Whether because of inadequate legislation or for other reasons, the fact is that salt iodization plants are not being installed, or, where they have been installed, do not cater for the whole of the area affected by goiter. INCAP has given much assistance in the countries of Central America and Panama, as have other consultants of the Organization. We sincerely hope that the Governments of the Organization will give this problem the attention it deserves because of its social consequences.

A full account of the work in nutrition carried out in 1960 is to be found in the respective chapter of this Report.

Statistics

In the field of statistics, the year 1960 saw the publication of two reports, *Health in the Americas and the Pan American Health Organization* and *Reported Cases of Notifiable Diseases*

in the Americas, 1949-1958, which represent a further effort to ascertain the extent of major problems and to give direction to the policy and efforts for their solution. Much remains to be done to improve the quality of vital and health statistics in the Hemisphere. In addition to being incomplete, they are far from accurate. These defects constitute one of the major obstacles to planning, evaluating results, improving services, and, in short, to serving communities more effectively. All efforts to overcome them have great implications. In 1960 substantial progress was made both in extending knowledge of the problems and in preparing more qualified personnel for statistical services. This will be clear from a glance at the chapter in the Report dealing with the collection, analysis, and distribution of statistical information; education and training in statistics at universities in the Hemisphere; the activities of the Latin American Center for Classification of Diseases, in Caracas; and the direct advisory services provided by the zone consultants, the fourth of whom took up his post during the year.

Malaria Eradication

During 1960, different phases of the malaria eradication program were undertaken in all those countries of the Continent where the disease exists. In some, spraying was interrupted in large areas, which were then shifted into the consolidation phase. This happened in Mexico, where spraying was discontinued in 80 per cent of the houses in the malarious area; in Jamaica, in 8 out of a total of 12 districts; and also in 4,692 km.² of the coastal region of Surinam. In Venezuela, of an originally malarious area of 600,000 km.², the area in which malaria is eradicated increased to 407,945 km.². This fact was verified in 1960 by a group of experts of the Organization who, at the request of the Government of Venezuela, made a field survey. The figure mentioned takes on its full significance when it is recalled that, of the 618 municipalities in the country (505 of which are in the originally malarious area), malaria has been eradicated from 388. This is the first time it has been possible to make a confirmatory survey of this kind.

With certain exceptions, the operations were carried out according to plan. Active and passive case-findings were improved; services were better administered; and the performance of the personnel gave proof of increasing expertise. The exceptions were due to biological phenomena, the most important of which was the resistance of the vector to DDT and dieldrin. Anopheline resistance presented difficulties in some areas of four countries in Central America, in particular in El Salvador. There were also problems of administration and of finance. It has been suggested that, where necessary, recourse might be had to international credit institutions for loans to safeguard the gains made and to enable countries to harvest the benefits of eradication. This sugges-

tion springs from the significance of the elimination of malaria both for the health and for the economy of a country, a fact of which those who have participated in the campaign since its initiation are always mindful and which explains the interest the governments of the world have in bringing the malaria eradication program to a successful conclusion. There have been few occasions in the history of human endeavor when the inventiveness and efforts of so many have been combined to solve a problem which affects millions of human beings and has such profound implications for the common good. In the Americas alone, 88 million people live in malarious areas that extend over 12 million km.², much of which is fertile land. For this reason we believe that this endeavor in which so much progress has already been made must be carried to its planned end. Biological problems will be solved by research. This outstanding effort, so pregnant with social consequences, must not be allowed to fail for lack of money. Where appropriate, Governments should have the possibility of obtaining long-term, low-interest loans to ensure the completion of their programs.

Full information about various aspects of malaria eradication and the most important occurrences during the past year will be found in the Report.

Smallpox

The number of cases of smallpox notified to PASB in 1960 was almost the same as in 1959—4,754 in 1960 as compared with 4,702 in the previous year. They all occurred in the countries in South America, and in great proportion in two of them. The program carried out in Colombia, which led to a dramatic reduction in the number of cases notified, deserves special mention. The Organization continued to assist Governments in carrying out eradication programs, in preparing glycerinated and dried smallpox vaccines with high immunizing power, and in training various types of personnel.

Once again we should like to insist on the fact that smallpox is a disease which can and must be eliminated from the Continent. On more than one occasion the World Health Assembly and the Governing Bodies of the Pan American Health Organization have expressed themselves in similar terms. For 162 years an efficacious biological procedure has been available for securing a level of immunity that prevents epidemics. Vaccine is relatively simple to prepare and cheap to produce. Smallpox is typically a disease which does not stop at frontiers and which in the world of today spreads with alarming rapidity.

Yellow Fever

Eighty per cent of the area where *Aedes aegypti*, the urban vector of yellow fever, is normally found is now free from this mosquito, thanks to the eradication programs carried

out by the Governments concerned, with technical advice from the Organization. *Aedes aegypti* has been eradicated in 11 countries and three political units. In 1960, El Salvador was officially declared free from the vector, and final verifications have been made in Colombia and Costa Rica. In the United States of America, recent surveys show that there are no more *Aedes aegypti* in the States of Arizona, New Mexico, North Carolina, Oklahoma, and the western half of Texas. In September a conference was held in Pensacola, Florida, at which tactics for eradication in the continental U.S.A. were discussed. In other countries, a steady advance was made in the eradication programs, although some foci of resistance to DDT were found. In conformity with the resolution of the Directing Council in 1947, the Pan American Health Organization has continued to promote and coordinate efforts to bring about the disappearance of *Aedes aegypti* from the Americas.

Leprosy

The leprosy control program was given fresh impetus in 1960. The Organization sent consultants to eight countries of the Continent in order to give advice in control programs based on a more accurate knowledge of the prevalence of the disease. In addition, surveys were resumed in Bolivia, Ecuador, and Peru. In other countries, program activities were extended, and special emphasis on ambulatory treatment resulted in a marked reduction in the use of leprosaria.

Poliomyelitis

The Second International Conference on Live Poliovirus Vaccines was held in Washington from 6–10 June 1960, under the auspices of PAHO and the WHO and with financial assistance from the Sister Elizabeth Kenny Foundation. Forty-five papers were presented and discussed by 85 scientists from 20 countries. Reports were given on large-scale field trials involving more than 80 million persons in 13 countries. Within two months after the closure of the meeting the proceedings of the Conference were published and have since been widely distributed to scientific centers throughout the world.

The Bureau collaborated with the Government of Colombia in a vaccination program in Bogotá involving 225,771 children under five years of age. During the year the nation-wide vaccination program in Costa Rica was completed. By 31 October, 305,959 children under 11 years of age had been fed the vaccine.

We are of the opinion that the Organization has made a worthy contribution to the control of poliomyelitis, not only by giving advisory services to some countries in the Hemisphere in connection with live attenuated poliovirus vaccination programs but also by affording outstanding research workers an opportunity to exchange opinions on a complex biological problem at the two conferences held in 1959 and in 1960.

Yaws

In Haiti, the surveillance phase of the yaws eradication program, which was initiated in 1959, continued to develop satisfactorily in 1960. By December, it covered an area with 2,350,420 inhabitants, or approximately 67 per cent of the total population. A total of 695 persons with infectious forms of yaws were discovered and treated. If this number is compared with the population examined, it will be seen that the incidence of the disease, in this group, fell from 10 per 10,000 in 1959 to 3 per 10,000 in 1960.

Subsequent investigations showed, however, that only 1.5 per cent of the ulcers were actually infectious forms of yaws; the remainder were due to diseases of different etiology. Similar studies have been begun to determine whether the "early cutaneous lesions," presumed to be infectious, are in fact manifestations of the disease. This investigation, which will be continued in 1961, will allow a more exact evaluation to be made of the yaws problem in Haiti.

It should be pointed out that this type of investigation is only possible when the incidence of the disease has reached as low a level as it has in Haiti and that it is to be considered a step preliminary to declaring the country free from this disease.

Other advisory services provided in 1960 are described in the chapter entitled "Yaws Eradication."

Chagas' Disease

In March 1960 a Study Group met under the auspices of the Organization to review the present state of knowledge of Chagas' disease, to establish guidelines for its control, and to determine the most suitable investigations to be carried out. It also drew attention to the coordinating role that could be played by international organizations. The report of the Study Group has been widely distributed, and we are confident that it will stimulate the interest of the Governments in Chagas' disease, which is as much a problem of housing and social welfare as it is of public health.

Tuberculosis

Despite the progress made in the countries of the Continent in the control of tuberculosis, as is shown by mortality rates, available information discloses that the disease is still a problem of great social importance in the countries of Latin America.

In the past most of the Organization's collaboration in this field took the form of assistance to Governments in their mass BCG vaccination campaigns. The emphasis is now shifting to chemotherapy, especially the administration of isoniazid, which makes it possible to give more and more ambulatory treatment and reduces the need for the isolation of patients in hospital beds. When sufficient resources are available, the Organization will be able to

embark on a continent-wide program to reduce morbidity and mortality rates to an even lower level. However, it must be borne in mind that the so-called social factors play a major role in tuberculosis.

We have touched on only a few of the prevalent communicable diseases. Other diseases with respect to which the Governments received assistance from the Pan American Sanitary Bureau in the past year are dealt with in the relevant chapter.

Education and Training

The social and economic development of Latin America will depend in large part on the number and quality of its technical and professional personnel. Together with capital, they are the main factor. This view holds good for public health, where the trained technician is irreplaceable. In Latin America there is a serious lack of trained manpower in each of the professions concerned with individual and collective medicine. The report *Health in the Americas and the Pan American Health Organization*, which was published in 1960, contained a detailed analysis of the present needs for physicians, sanitary engineers, dentists, veterinarians, nurses, midwives, and other professional health workers, together with auxiliary personnel. We acknowledge the efforts to improve this state of affairs that have been made by the Governments and by international organizations, both public and private. It has been possible to define more accurately the type of professional health worker that is required to meet the growing needs of the countries. Likewise, the essential role of auxiliary workers has been established, as has the urgent need to prepare more of them and to give further training to those already at their post. Training programs have been and are being revised so as to adapt them to the present exigencies. In short, there is a clearer understanding of the problem and of its scope and of how to deal with it in the various fields of training. What is required is more money to ascertain the real needs of each country, to prepare more teaching personnel and afford faculty members opportunities for further training, to improve the organization and administration of teaching, to establish more schools or new departments in schools, and to provide existing institutions with equipment and other supplies. It is also indispensable to make provision for a more extensive exchange of opinions between experts in general education and those dedicated to particular branches of learning.

The Organization has had the benefit of the advice of the Advisory Committee on Education in preparing a 10-year plan of assistance to Governments in the above-mentioned fields. The Directing Council at its XII Meeting emphasized the importance of the Organization's work in education and training and urged the Director to intensify his efforts to find extra-budgetary funds for the purpose of progressively expanding the educational program.

Meanwhile, important programs were carried out in 1960 under the regular budget. A detailed account is to be found in the chapter entitled "Education and Training." With respect to professional schools, the progress made shows both how much remains to be done and how great is the need for more investments by Governments and by international organizations.

Fellowships

It is pointed out in the report that "516 fellowships were awarded in the Americas, a 2 per cent increase over the 505 fellowships awarded in 1959." During the same period, 107 fellows referred by other Regional Offices of the World Health Organization came to study in the Region of the Americas. The highest priority was given to fellowships in public health, which amounted to 41 per cent of the total. The remainder were awarded for non-academic courses or short-term special courses and for visits to institutions and programs in various countries. A detailed analysis of this basic activity appears in the Report and is well worth reading. It also reveals the trend as to priorities in the field of medical and public health education.

Since 1959, the Organization has been carrying out a survey of schools of nursing in Latin America. In accordance with pre-established criteria, 110 out of 270 schools of nursing officially recognized by the Governments of the countries in which they are situated were selected for inclusion in the survey. The results of the survey, based on replies received from 105 of those schools, show the positive and negative aspects of the training provided for a profession that is one of the pillars on which the promotion, protection, and restoration of health in the Hemisphere must be based.

Research

"Research is emerging as a specific activity of the Organization, and the expansion which began in 1960 will probably result in a major increase in understanding of the epidemiology of disease in the Americas." These words end the chapter of the Report that deals with the research activities carried out in 1960. The major development was the agreement between the Organization and the U. S. Public Health Service (National Institutes of Health) for the purpose of promoting studies on diseases prevalent in the Americas.

The results of pure research in biology are not always universally relevant because of the dependence of living organisms on their environment, the variation of both of these, and the permanent process of adaptation. These are some of the basic tenets of ecology as a distinct branch of learning, one of whose purposes is to determine the geographical distribution of diseases.

In the last 10 years, the Pan American Sanitary Bureau

has undertaken a series of important public health research programs whose results have made a contribution of practical value. Of these we should like to mention those connected with the diagnosis and treatment of venereal diseases; the mechanism of the transmission of onchocerciasis; trials of new insecticides and antimalaria drugs; the biological process of anopheline resistance to DDT and dieldrin; the biological function of vegetable proteins in malnutrition and the preparation of INCAPARINA; methods for salt iodization and the control of endemic goiter; the assay of live attenuated poliovirus vaccines; the epidemiology of malnutrition in children and the influence of sanitation, infection, and feeding; the production of a live attenuated virus vaccine for foot-and-mouth disease; nutritional factors in the pathogeny of atherosclerosis; more specific methods for the diagnosis of hydatidosis; animal reservoirs of the salmonella and their influence in the causation of infant diarrheas; and the development of more potent rabies vaccines. In the Report that follows, details are given of the research carried out during the past year. Even though it may appear a paradox, the enormous scientific advances made in this decade have pointed up the need for further research aimed at more accurate knowledge and more exact definition of the characteristics of each process in its environment, always with the promotion of well-being as the final end in view. It is for this reason that the Organization wishes to expand its research activities, which will be supported by the funds available as a result of the agreement mentioned above, among others. The Pan American Sanitary Bureau will thus also be able to complement the research programs of the World Health Organization in the Hemisphere.

We hope that as a result of this initiative new opportunities will be afforded Governments, universities, and in particular research workers. Experience shows that sound schemes, those which are directed toward the common good, receive the financial support necessary to enable them to be brought to fruition and put into practice. Besides stimulating research, the Pan American Sanitary Bureau can also give form to truly international studies that call for the collaboration of various countries. We are confident that in this decade the medical and public health research sponsored by the Organization will continue to expand and to bring forth solutions to the most pressing problems.

Improvement of Administrative Practices

Every medical act, whether it be directed toward the individual or the collectivity, is embodied in a technical norm and applied through an administrative procedure. This explains the importance of the organization and administration of institutions in the prevention and treatment of disease. In Resolution XXXV of the X Meeting of the Directing Council in 1957, the Member Governments recognized the need for the improvement of administrative

practices related to public health programs and requested the Pan American Sanitary Bureau to expand its assistance in this field, which up to then had been mainly in malaria eradication programs. From the start of that continent-wide campaign it was clear that, in each project, administrative services had swiftly to be brought to a level of efficiency and flexibility in keeping with the accuracy and exactitude dictated by the biological and ecological characteristics of the disease. With this end in view, the Organization's consultants have been assisting the Governments with various phases of the eradication program. Outstanding work in this connection has been done by the U. S. International Cooperation Administration.

It is evident that the general organization of national and local health services needs to be improved and that technicians and auxiliaries must be prepared and trained. In proportion as administrative practices become more efficient, so efforts designed to protect, promote, and restore health become more effective, and more persons can be taken care of at a smaller cost. In the course of the past year a consultant of the Organization made a survey in 10 countries of Latin America of the methods of work and structures of the Ministries of Health and main departments. He informed the authorities of the purpose of the assistance to be furnished by the Pan American Sanitary Bureau in this field. All the Governments expressed great interest in having the advice of experts and in holding seminars at which administrative problems could be thoroughly examined; these were some of the methods suggested. In November 1960, the first of a series of meetings was held in San José, Costa Rica, and was attended by the directors general of health and the directors of administration of the public health services of Central America and Panama. Specialists from the Organization and from the *Escuela Superior de Administración Pública de América Central* helped organize the meeting. Discussions were held on the various administrative units that form part of health services, their functions, practices, and organizational structure. The final report of the Seminar contains valuable recommendations which we hope the Governments will adopt.

This type of activity has been carried out in close collaboration with the Office for Public Administration of the United Nations, and we intend to expand it progressively, to the extent that our resources allow, in accordance with established priorities.

Administrative Developments in 1960

The Report also deals with the main administrative developments during the year. Of these, we wish to signal out those related to the funds available for implementing the general program approved by the Governments, in particular those coming from the Pan American Health Organization's regular budget. The amount of contributions

paid by the Governments amounted to only 76.3 per cent of the assessed budget, as compared with 81.4 per cent in 1959. Receipts of arrears, which in some cases have been outstanding for several years, were smaller than in 1959. As a consequence, the Bureau received only 70.5 per cent of the funds for financing the programs approved by the Pan American Health Organization. The interest of the Governments in such programs is obvious, for they requested further projects amounting to more than \$1,475,000 which could not be included in the regular budget for the reasons stated above. This problem has been thoroughly discussed by the Governing Bodies of the Organization and their resolutions show the clear interest of the Governments in regularizing the financial situation with respect both to arrears and to current quotas.

Collaboration with Other Organizations

A communion of purposes guides the efforts of the international organizations that serve the Governments of the Hemisphere. Even though their methods of work may differ, their activities are intended in the final instance to promote health and welfare. As happens in all groups of human beings motivated by the same purpose, time and experience brings about a better understanding and an identification of outlook, which in turn facilitates joint action. In the Americas, the Organization has continued to work with UNICEF in a series of programs dealing with problems of major concern to the Governments. The most important of these are the eradication of malaria; the improvement of basic health services, especially those for maternal and child health, rural sanitation, the control of communicable diseases; nutrition, especially in schools; the training of auxiliary health workers. Again we wish to emphasize the significance of the activities of UNICEF for the welfare of increasing numbers of human beings. In the same way, we wish to call attention to the work of the International Cooperation Administration of the United States, in particular in malaria eradication. The Rockefeller Foundation and the Kellogg Foundation have continued their tradition in the field of medical education, nutrition, and other branches of public health. In particular programs, the Pan American Sanitary Bureau has also collaborated with the Food and Agriculture Organization, the Technical Cooperation Program of the Organization of American States, UNESCO, and many other organizations and agencies.

We have touched on only a few of the salient facts about the 288 projects in which the Pan American Health Organization and the World Health Organization are assisting the Governments of the Americas. This is only a part of the work, for much more is being done by the countries for the good of their inhabitants. One might ask one's self where all

this is leading. We have ventured to state that health is not an end in itself, that we do not live merely to be healthy. If what we are striving to attain is to give life a meaning and an aim, then this thought of Julian Huxley might stand as a suitable expression of purpose:

“The most vital task of the present age is to formulate a social basis for civilization, to dethrone economic ideals and replace them by human ones. . . . To the biologist who is not afraid of being a humanist, the essence of human life is seen in social relationships.”

PUBLIC HEALTH ADMINISTRATION

Introduction

During 1960 the Governments of the Americas increased their efforts to improve and extend their public health services and the Organization received and responded to a growing number of diversified requests for assistance.

The trend toward long-range planning of public health measures is particularly important. In some countries special groups were designated to study present resources and future needs in the field of health, and one country's study resulted in the formulation and official enactment of a national health plan. In others, study groups have made valuable contributions to the national health agencies, through specific recommendations for the organization and administration of health services.

An important development has been the increasing interest shown by ministries of health in the administrative aspects of public health, including budgeting, management, and accounting. Governments have requested assistance from the Organization on budget preparation and management; on personnel administration, including recruitment, assignment, and promotion; and on the organization of systems for the acquisition, distribution, maintenance, and control of supplies and equipment. The Organization furnished the requested assistance through consultant services, training courses, and seminars. In response to a common interest in such problems, the Organization collaborated in arranging a Seminar on the Management and Organization of Public Health Services in Central America and Panama, the details of which are covered elsewhere in this report.

Public health legislation has also become a matter of much interest as national health authorities recognize the importance of sound basic laws to support modern health practices. In Central America and Panama the Organization worked closely with national authorities to further a review of existing legislation; short-term consultants for this purpose were provided for Costa Rica and El Salvador. Another consultant undertook a similar review in Trinidad, where the work has been completed, with the exception of

laws and regulations dealing with quarantine measures. Additional consultant services in this field are planned for 1961, and it is anticipated that the Organization will then be able to present recommendations for uniform health legislation applicable throughout the West Indies Federation.

Another important development has been the increasing attention given to the creation of additional full-time public health posts and the establishment of career services which will attract and retain qualified health personnel at all levels. In Colombia, for example, reorganization plans for the Ministry of Health provide for both full-time employment of technical staff and training opportunities for staff members who may require additional studies. Similar requirements have been established in Guatemala, and in Uruguay the public health career service has developed appropriate salary scales for public health personnel of all types and at all levels.

There has been growing appreciation of the need for frequent and systematic evaluations of various aspects of the public health services in order to ensure effective long-range planning. Evaluation studies have been made in subjects as varied as the results of latrine construction and the systematic review of all the health services provided in a country during the past 10 years.

In the field of public health administration the Organization has increased the extent and variety of the services it provides in order to meet the requests made by Member Governments. Thus, where a few years ago major activities were in the basic fields of general public health administration, nursing services, environmental sanitation, and vital statistics, the Organization's technical advisory services now include these and others such as dental health, mental health, nutrition, and health education. Specific sections are devoted to these activities later in this report, but the resulting effects of these activities are indicated in the following section on integrated health services.

Integrated Health Services

The concept of integrated health services forms the basis for a dynamic and modern approach to public health planning. The objectives are:

(1) to bring under a unified administration all the services of the official health agencies that are concerned with individual, family, and community health; and

(2) to coordinate these services, whenever possible, with those of other institutions, agencies, or individuals directly or indirectly involved in the promotion, maintenance, or restoration of health.

Planning is initiated with a systematic study of the health problems of an entire country or of a representative area, of the socioeconomic and cultural factors contributing to the existence of the problems, and of the human and material

resources actually or potentially available for the practical and effective solution of these problems.

The next step is to develop a long-range plan directed toward solving or, at least, minimizing the major health problems. The plan must be geared to the possibilities and limitations of the country or area. In these plans the construction of new facilities, such as health centers, sanitary units, clinics, and hospitals, or the renovation of existing facilities, is physical evidence of program growth. Even more important are other developments which, while not immediately apparent, are of vital importance. These include the training of health personnel of all categories, the study and amendment of health legislation to allow health authorities greater flexibility in the exercise of their func-



Constructing shower, latrine, and clothes-washing facilities for the people of a crowded suburban section of Tegucigalpa, Honduras. Work was done under the technical guidance of a PASB/WHO consultant engineer.

tions, long-term budget planning, the development of career public health services, and the periodic evaluation of such services.

The Organization is working with the Governments in many different ways to promote this concept. Sometimes it provides a specific consultant to one particular department of the health agency; in other cases it is a team of international consultants who, with their national counterparts, develop a basic plan for integrated health services. At times such teams may work at the national level and give direct advisory services to the ministry of health or the national public health service. Often a plan is developed as a result of experiences acquired in a demonstration area or in a pilot project.

Figure 1 indicates where integrated health services projects are in operation and the international personnel serving in them. Table 1 shows the number and type of

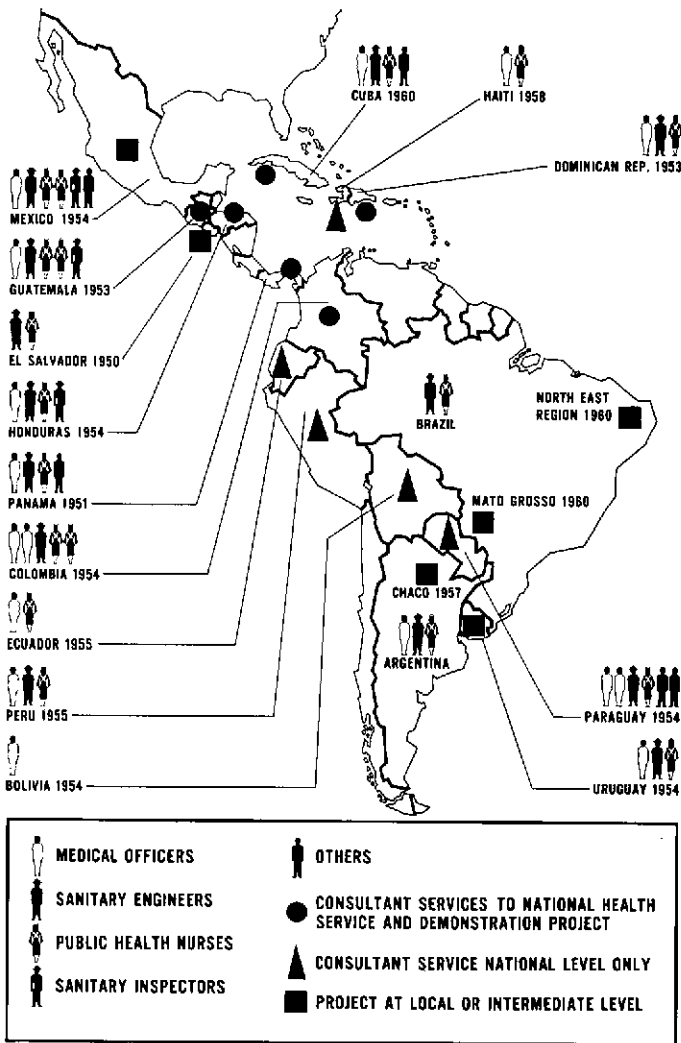


Fig. 1. Location of Projects for Integrated Health Services with Year Established and Number and Type of International Consultants Assigned, 1960.

international consultants in integrated health projects. Some of the major activities developed as part of integrated health services planning are described below.

Health Planning and Organization

It will be recalled that in 1959 the President of Colombia appointed a National Planning Committee to study the country's entire public administration system and to draft proposals for a more efficient organization. The Committee decided to examine the administrative system of the Ministry of Public Health and, in the light of that study, to draw up recommendations which might be applied to other national agencies. The study was completed in 1960 and the resulting recommendations are now being implemented. The reorganization calls for the Ministry of Public Health to establish technical and administrative policies and directives; these will be administered by the health agencies of the departments of the country and executed by the municipal health units. The technical staff of the Ministry has been redistributed to provide greater flexibility in administration and supervision, and persons appointed to technical staff positions are now required to devote themselves full time to their tasks. An important decision was to extend to other departments the pilot plan for integrated health services in which the Organization collaborates with advisory staff. Thirty health centers are now operating in 11 departments.

In the Dominican Republic the possibility is being studied of extending the demonstration project beyond the five-year period originally planned.

The integrated health services program inaugurated in the State of Guanajuato, Mexico, has been successfully concluded and, in effect, incorporated into a larger activity designed to include the States of Sonora, Chihuahua, Tlaxcala, Michoacán, Oaxaca, Veracruz, Yucatán, Tabasco, and Guanajuato. A preliminary survey of the health services of these states is being made with the assistance of short-term consultants (personnel of the integrated health services project) and the staff of the Zone II Office in Mexico City.

During 1960 the plan of operations for an integrated health service in Cuba was put into effect. Emphasis is being directed to the regional and local levels in the Province of Pinar del Río, but the consultant team is also working at the national level in a broad program for the reorganization of health services. Present plans call for the establishment in each province of a regional health service which will supervise the zone services operating from the major municipalities; but owing to special needs and the density of the population, two regional health services have been established in the Province of Pinar del Río.

An agreement was concluded between the Government of Haiti, the Organization, and UNICEF to establish a

TABLE I. NUMBER AND TYPE OF INTERNATIONAL CONSULTANTS IN INTEGRATED HEALTH PROJECTS, 1960

Project	Operational level	Medical officers	Sanitary engineers	Public health nurses	Sanitary inspectors	Others
Total		17	13	17	3	5
Argentina—7	Provincial and local	1	1	1	—	—
Bolivia—10	National	1	—	—	—	—
Brazil—39	Provincial	—	(1)	1	—	—
Colombia—4	National and local	1 (1)	1	2	—	—
Cuba—3	National and local	1	1	(1)	—	1 ^a
Dominican Republic—4	National and local	1	1	1	—	—
Ecuador—4	National	1	—	(1)	—	—
El Salvador—5	Local	—	(1)	1	—	—
Guatemala—8	National and local	1	1	2	(1)	—
Haiti—16	National	1	—	(1)	—	—
Honduras—4	National and local	1	1	1	1	—
Mexico—22	Local	(2)	1	1	1	1 ^a
Panama—1	National and local	1	1	1	—	(1) ^b
Paraguay—10	National	2	1	1	—	2 ^c
Peru—22	National	(1)	1	(1)	—	—
Uruguay—5	Local	1	1	1	—	—

() Unfilled positions.

^b Veterinarian.

— None.

^c One bacteriologist and one administrative methods officer.^a Health educator.

demonstration area for integrated health services in the Cul-de-Sac area, near the capital. Haiti has taken an interesting step toward the integration of its health services by appointing its chiefs of district hospitals to serve also as chiefs of the health districts in which the hospitals are located. They have been instructed to give priority to the problems of preventive medicine facing the rural populations.

In Guatemala the National Department of Health was reorganized, and the Ministry of Public Health and Welfare has nearly completed plans for a health program covering the period of 1961-1966. The reorganization divides the National Department into five main divisions: Local Health Services, General Technical Services, Environmental Sanitation, Epidemiology, and Administration. Of these, the Division of Local Health Services will be executive and teams composed of various public health specialists who will have supervisory responsibilities for the entire country have already been formed. The other four divisions will issue directives, and work has already been completed in such fields as care of pregnant women and nursing mothers, care of the well child, nursing techniques, and the planning and execution of environmental sanitation activities. These directives have been incorporated in a *Manual of Procedures* which will serve as a guide in improving and extending the work of the health centers. The reorganization also provides for the establishment of health centers to furnish both curative and preventive health services, rather than only curative services as was formerly done.

The Government of Panama appointed a special group to study current public health procedures and evaluate their results, and to recommend adaptations or modifications which might be made in future public health planning. Health services have been organized on a regional basis, and a pilot plan for the Western Health Region has been prepared.

The Health Demonstration Area of El Salvador, initiated in 1951, was the first field experience in the Americas in the planning and development of an integrated health program. It has served as a training ground for national personnel and for personnel from other countries and, as an area where research and practice in various aspects of public health are carried out, has merited the attention of health authorities from many parts of the world. The experience acquired and the results obtained have been of great value to both national authorities and the Organization. This Demonstration Area is now being integrated into the national health system.

Program planning and organization in Peru have until now been carried on at the national level, but consideration is being given, at the Government's request, to extending it to the local level and to establishing a pilot project in the Department of Junín to serve as a demonstration of decentralized health services.

A plan of operations for an integrated health services project in British Guiana was approved. The project will be put into operation in 1961, when the Organization will provide the services of a public health physician-adminis-

trator who will be stationed in Georgetown and attached to the Department of Medical Services. The health authorities will begin this program with an analytical review of the present practices in medical and nursing services, sanitation, water supplies, and preventive health services throughout the country, the results of which will serve as a basis for developing a national health policy.

Reorganization of the Ministry of Public Health and the National Health Service of Bolivia was completed and has resulted in the incorporation into the National Health Service of departments formerly under the Ministry of Health as well as of some previously attached to other ministries. Accordingly, the National Health Service is now the agency responsible for the coordination and guidance of all public health activities in the country. Here, too, the growing interest in the strictly administrative aspects of a health service, that is, financing and accounting, personnel management, logistics, etc., was evidenced by a request for a short-term consultant.

The integrated health services concept has also won great support in Brazil. Programs are under way in Northeast Brazil and in Mato Grosso, and the Government and the Organization are at present discussing a plan of operations for the initiation of a third such program in 1961 in the State of Bahia.

In the Mato Grosso program, initiated in 1960, considerable progress has already been made in the development of nursing services based on the center at Dourados. Maternal and child health and communicable disease control are currently emphasized, and programming for environmental sanitation will be introduced early in 1961. Home-visiting has been instituted in the towns of Itapora and Serraria and medical outpatient consultations and related health education activities are being provided in Missão Kaiwa, Villa Brasil, Villa Gloria, Carapó, and Itajaí.

Technical staff of the Special Public Health Service Foundation (SESP), aided by the Organization, now supervise the integrated health program in Northeast Brazil. The program operates in 22 municipalities and offers health services through 23 health units, two district hospitals, and nine maternity units. As in Mato Grosso, this program has to date emphasized maternal and child health and communicable disease control activities, but it is planned to include environmental sanitation, particularly the development of potable water supplies, in 1961.

An important change in organization took place in El Chaco Province, Argentina, when all services formerly provided by the National Ministry of Health were transferred to the Provincial Ministry, which in turn transferred certain responsibilities to the health districts of the Province. Each health district covers about one third of the Province and has approximately 200,000 inhabitants. A striking aspect of the program is the complete coordination of preventive and curative health services at the district level. Steps have been taken toward the approval of a uni-

form health code. The results obtained in the El Chaco program have aroused interest in other parts of the country, and a draft plan has been prepared for a similar program in San Juan Province, where the Provincial Government has made the necessary budgetary provisions. In addition a Health Code has been approved for the entire Province, and a Provincial Health Service created. By-laws designed to support and facilitate the work of the provincial health agency are also being prepared.

In Paraguay the training of additional qualified personnel made possible the consolidation of health districts and the expansion of supervisory services. A most important precedent was established when a budget committee was designated with the responsibility of establishing an adequate system for the development and maintenance of a sound public health budget on a long-term basis. The planning of the 1961 budget was a joint effort of the executive, regulatory, and administrative staff of the Ministry of Public Health and Welfare and international consultants. With the exception of the malaria eradication program, all communicable disease services will be incorporated into the regular public health program, decentralized, and administered by health units at local levels.

Honduras was the only country which, by the end of 1960, had formulated and put into effect a national long-range health plan. The plan provides for a reorganization of services at the national level as well as the expansion of local services and their improvement and extension through the construction of new facilities and training of more staff. The addition to the National Health Service of a Department of Veterinary Public Health is worthy of note.

In Uruguay a study was made with a view to reorganizing the Division of Hygiene in the Ministry of Public Health. It will now include the Department of Health Centers, and Departments of Epidemiology and Environmental Health will be created. Studies by national and international health staff on the preparation of guides on maternal and child health services, environmental sanitation, and communicable disease control were continued during this year. Plans for the development of maternity centers in some rural and urban areas of the country were prepared with the social security agencies. A budget of the requirements of the integrated health services project for the next four-year period was prepared; it will help to establish a firm foundation for planning, since it represents a tenfold increase over the previous budget.

Training

The training of professional and auxiliary staff is a most important part of the integrated health services program. Such training is carried out in a number of ways. These include fellowships for formal training in schools of public health or other specialized institutions abroad, as well as regular training programs within a given country. The

training programs consist of courses that range from two to three months up to a full year, depending upon program requirements and the type of personnel being trained. Sometimes, for reasons of economy or ease of administration, courses are offered as part of the teaching program of institutions such as schools of medicine, nursing, or public health. Courses may also be developed as part of an integrated health services project in order to give students an opportunity to acquire theoretical concepts and to test them under actual field conditions.

Table 2 shows the nature and length of training programs conducted in conjunction with integrated health services during 1960 and the number and type of personnel trained. It may be of interest to comment on some of these activities.

In Colombia, for example, the decision to extend the pilot plan to all departments of the country immediately created a need for additional trained personnel, which in turn necessitated an increase in the training activities. As a result, courses for auxiliary nurses were begun in the Departments of El Valle and Caldas; a review was made of the training programs for nurses at the Bogotá School of Public Health; and efforts to recruit qualified public health nursing personnel were intensified. Plans are being made for joint action by the School of Public Health and the pilot project to promote in-service training programs for nursing staff.

The programs of integrated health services in Mexico pointed up the need for greater emphasis on the training of hospital and public health nursing personnel, further training in public health for graduate nurses, and an expanded training program for auxiliaries in basic nursing and in sanitation. An interesting extension of training to lay workers is envisaged in the plan to identify, register, and give some basic public health instruction to untrained birth attendants.

Training was given high priority during the first year of the health services program in Cuba, and fellowships were granted to a number of candidates for intensive short-term study abroad in health education, public health administration, and nursing. A School of Nursing was established to provide trained staff for the various health units proposed under the program, and the Carlos Finlay Institute planned and conducted short courses which supplied over 400 new health workers of all categories, ranging from auxiliary health workers to chiefs of local health centers.

The training center operating in Amatitlán, Guatemala, as part of the original Demonstration Area was transferred to Guatemala City and formally designated as a Public Health Training School. It is interesting to note that the Government has named the Director of Health Education of the National Health Service as Director *ad honorem* of this school. A suburban health center was established as a joint responsibility of Guatemala City and the San Carlos University Medical School in a plan whereby the staff of the center also serve as members of the faculty of the School. In the selection of personnel, preference is now being given

TABLE 2. NUMBER AND TYPE OF PERSONNEL COMPLETING COURSES CONDUCTED IN CONJUNCTION WITH INTEGRATED HEALTH PROJECTS, 1960

Type of personnel and project	Number trained	Duration in months	Hours	
			Theory	Practice
Total	740			
Physicians	19			
Guatemala—8	19	...	...	...
Nurse midwives	19			
Colombia—4	19	12	797	1,329
Midwives	22			
Paraguay—10				
(1st course)	14	3	170	326
(2nd course)	8	2½	105	319
Nurses	68			
Argentina—7	42	8	160	...
El Salvador—5	14	9	791	500
Guatemala—8	12	7	616	346
Nursing auxiliaries	214			
Argentina—7	36	6	209	534
Brazil—39	14	7	...	...
Colombia—4 (1st course)	32	3	...	264
(2nd course)	40	3	324	212
Dominican Republic—4	7	6	139	664
Guatemala—8	22	4	312	349
Honduras—4	25	6	329	656
Paraguay—10	38	8	475	825
Sanitary inspectors	185			
Argentina—7	10	10	1,096	350
Brazil—39	13	7	...	...
Colombia—4 ^a				
(1st course)	35	5	480	120
(2nd course)	33	5	480	120
El Salvador—5	15	10	963	275
Guatemala—8	16	7	...	...
Honduras—4	13	6	330	662
Mexico—22	26	2	...	...
Panama—1	9	6	...	...
Uruguay—5	15	10	686	540
Laboratory auxiliaries	31			
Guatemala—8	8	12	...	...
Paraguay—10				
(1st course)	12	2½	132	202
(2nd course)	11	2½	78	246
Others	182			
Argentina—7 ^b	20	6	66	70
Argentina—7 ^c	20	2	52	26
Mexico—22 ^d	10	2	...	...
Panama—1 ^e	80	2	...	...
Paraguay—10 ^f	20	2½	30	30
Uruguay—5 ^g	32	9	456	683

... Data not available.

^a Hours estimated. Ratio of theory to practice given as 4:1.

^b Dental auxiliaries.

^c Administrative personnel.

^d Well-drilling mechanics.

^e Teachers in training.

^f Dentists.

^g Health visitors.

to persons with experience in public health rather than to persons outside the field. Under this policy, 19 physicians, 12 nurses, 16 sanitarians, 22 nursing auxiliaries, and 8 laboratory technicians were trained in 1960.



Members of mothers' club receive weekly instruction in child health at the Health Center in Rincón de Tamayo, Guanajuato, Mexico.

In Panama the following ratios of trained public health personnel existed when the integrated health services program began in 1953:

Public health physicians	—1 per 136,000 inhabitants
Sanitary engineers	—1 " 91,000 "
Public health nurses	—1 " 164,000 "
Trained nursing auxiliaries	—0

By 1960 the above ratios had changed as indicated by the figures that follow:

Public health physicians	—1 per 91,000 inhabitants
Sanitary engineers	—1 " 67,000 "
Public health nurses	—1 " 91,000 "
Trained nursing auxiliaries	—1 " 16,000 "

During the period 1953-1960, 107 fellowships for training abroad, including 52 granted by the PAHO/WHO, were awarded to career and technical personnel.

In El Salvador the training center of the Health Demonstration Area and its technical staff were transferred to San Salvador. The program will continue utilizing staff from the National Health Service and related agencies.

The integrated health services program in Mato Grosso, Brazil, was initiated by a course for training public health auxiliaries and sanitarian trainees. A six-month course for untrained birth attendants was begun in the Dourados hospital in July, and in November the national and international nursing staff began a series of courses in nursing supervisory practices. Trainees who complete the Dourados courses will be assigned to health centers.

The program in El Chaco Province, Argentina, also emphasized training in 1960. Fellowship grants for academic courses in public health were provided for two physicians, four nurses, a dentist, a sanitary inspector, a health education specialist, and a biochemist. Within the country, a training course for laboratory technicians was begun, and three courses were planned and conducted for 10 sanitary inspectors, 36 nursing auxiliaries, and 20 dental auxiliaries.

Paraguay, too, gave precedence to training programs, and 103 public health workers, such as nursing auxiliaries, sanitary inspectors, professional midwives, and laboratory technicians, have benefited. As a part of the nutrition education program, 115 schoolteachers and school supervisors were given training in concentrated short courses. A course in public health dentistry was offered to 20 dentists assigned to the Ministry of Public Health and Welfare and to a number of students from the School of Dentistry of Paraguay. A review of public health training needs, with a view to developing a system that would assure the best use of the available opportunities for training abroad, was also undertaken.

A unique approach to in-service training in Honduras was the First National Seminar in Public Health, which was sponsored by the President of the Republic, the Ministry of Public Health and Welfare, and the National Children's Foundation. During one week, 114 public health workers of all categories from all parts of the country met to study the proposed national health plan. The Seminar gave them an opportunity to discuss the plan and to reach agreement on the interpretation and mode of application of its provisions. Clear definitions of the roles of the various agencies and of the different types of health workers were

reached. Recommendations coming from the Seminar included proposals for expanded and intensified training programs within the country and abroad, the creation of a nursing department in the national health service, and increased emphasis on environmental sanitation.

In Uruguay, training was given to the nursing auxiliaries and sanitary inspectors who will carry on the program in the new health centers that have been opened. A training program for the improvement of potable water supplies was initiated, when 10 officials of the Ministry of Public Works attended a course in the operation of waterworks.

Professional Standards and Public Health Career Services

The experience acquired in the integrated health services programs clearly demonstrates the need for more public health personnel, the advantages of the full-time employment of personnel, and the benefits derived from well planned and consistent programs of formal and informal training. Reports indicate a growing appreciation of these facts as Governments move to set high professional standards for their public health personnel and to establish career services.

Reference has already been made to the legislation in Colombia requiring the technical staff of the National Public Health Service to serve full time. The Government has also decided that senior personnel who have not had training in public health must acquire this training either within the country, where the necessary courses will be initiated, or abroad. At the national level there were five trained, full-time public health physicians in supervisory posts at the end of 1960, as compared with only one part-time physician at the beginning of the year.

In Guatemala a significant step was taken toward the establishment of a career public health service when an official decree was promulgated, specifying that candidates for posts in the service would receive special consideration for training within the country or abroad. All of the present administrative and supervisory staff of the national public health service have received such training.

In the El Chaco Provincial Health Service in Argentina a personnel classification system was established and a salary merit system put into force for staff working full time. All health centers in which the system is applied now have full-time obstetricians, pediatricians, dentists, sanitarians, nurse midwives, and auxiliary nurses. Most of the centers also have full-time nurse-supervisors.

In Paraguay the Department of Epidemiology at the national level has been completely staffed with trained public health personnel.

Construction or Renovation of Health Facilities

A growing number of health establishments are being opened in the Americas, and planning for the construction or renovation of facilities is more closely geared to the availability of trained staff to provide the necessary services. For example, in Colombia, nine new health centers were created in seven departments of the country and, when opened, each center was placed in the charge of a physician with public health training; four of the centers have trained public health nurses and six have trained nursing auxiliaries. All the centers will have a trained public health nurse by March 1961.

In the State of Guanajuato, Mexico, the newly completed health center for the state capital will also serve as headquarters for the Health District staff. Similarly, in Argentina, six health centers directed by full-time personnel were opened in Health District No. 1 of El Chaco Province and their activities coordinated with those of a general hospital, so that health services have been brought to a population of 80,000 persons. Twelve health posts have been set up in the rural areas of El Chaco.

In Uruguay, six health centers have been established and are now providing services to communities in the Departments of Artigas, Durazno, Tacuarembó, Rivera, and Salta, the combined population of which is estimated at 135,000. Two additional health centers will be opened as soon as the staff to operate them have completed their training as visiting nurses and sanitarians.

Table 3 summarizes the health units constructed or renovated as part of integrated health services projects during the year.

Community Participation

Much of the success of an integrated health services program depends upon the community's understanding and acceptance of the measures that are undertaken to improve, maintain, or restore public health. Every effort is made to ensure that community representatives take part in the preliminary studies so that they, too, may identify major health problems and assist in solving them. Joint action from the beginning also creates a favorable atmosphere for full community participation in program activities.

It is encouraging that communities throughout the Americas are showing increasing interest in acquiring and maintaining satisfactory public health services and have often expressed their willingness to help initiate and maintain such services by contributing money or labor. Each country could cite many examples of community participation, but reference is made here only to a few.

TABLE 3. HOSPITALS AND OTHER HEALTH UNITS CONSTRUCTED, RENOVATED, OR OPENED DURING 1960 AS PART OF INTEGRATED HEALTH SERVICES PROJECTS

Project	Area of activities	Estimated population (in thousands)	Units constructed, renovated, or opened in 1960				
			Hospitals	Health centers	Health subcenters	Health posts	Maternal and child health centers
Argentina—7	El Chaco Province	706	4	6	—	12	—
Colombia—4	Eleven departments	8,595	—	9	—	—	—
Guatemala—8	Entire country	3,759	—	10	—	9	—
Honduras—4	Three health districts	993	—	1	5	5	4
Mexico—22	Demonstration area	335	2	2	3	—	—
Paraguay—10	Entire country	1,760	—	6	—	...	—

— None.

... Data not available.

In the health services program of the State of Guanajuato, Mexico, a rural auxiliary health center was constructed in the town of Rincón de Tamayo through the joint efforts of the community, municipality, and state. In the Argentine program for El Chaco, important support for program developments was obtained from provincial legislators, the local medical association, and various other organized groups of the community. An agreement has been concluded for the extension, through community participation, of the water supply system in Resistencia. Similarly, in Paraguay, the increase in both the amount and kinds of participation by communities has largely made up for the lack of funds which threatened to slow down the program at the local level.

Evaluation

Frequent and systematic evaluation of all aspects of a health services program at all levels is necessary if its dynamic character is to be maintained and due consideration is to be given to the changing needs and resources of the area. The year 1960 was notable for the growing appreciation of the need for and value of systematic evaluation, and there were increased efforts along these lines. Possibly the most ambitious undertaking was that of Paraguay's Ministry of Public Health and Welfare, which, with assistance from the Organization, made an evaluation of its work during the past 10 years. In addition, a number of joint meetings were held with national, regional, and local staff to analyze activities and to determine possible team approaches to health center services. For example, 11 health center directors and other specialist staff recently met with nurse-midwife graduates of the training program to discuss individual and team roles and to formulate objectives and methods for the coming year.

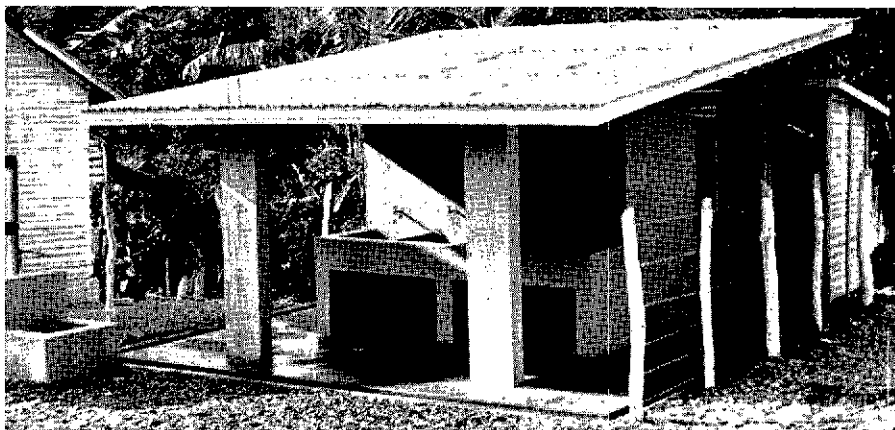
In Venezuela, short-term consultants carried out assignments for the State of Yaracuy and the health centers of Mérida and Ciudad Bolívar. In cooperation with national authorities and the staff of the centers, they initiated analytical reviews of all services. The findings were discussed with health officials, and recommendations on the modification of existing methods and procedures and the introduction of others were submitted. The same consultants will revisit these centers in 1961 to re-examine activities in the light of their recommendations and to evaluate, with the national and local staff, the results obtained.

Regarding the health services program for Northeast Brazil, a series of evaluation meetings were held at the end of 1960 and attended by representatives of all the agencies taking part in the project. The goals of the project, together with the results obtained, were examined objectively to determine what changes might be needed to ensure maximum progress.

A seminar on evaluation in which national, provincial, local, and international personnel participated was held in connection with the El Chaco program of Argentina. One immediate result of this meeting was the assurance by government authorities of increased financial support for the communicable disease program.

An interesting variation of the evaluation procedure was instituted in the Dominican Republic. There, a community sanitation unit, consisting of a potable water outlet, two baths, four laundry racks and tanks, two latrines, and a waste-water reservoir, has been installed in a community as an experiment, and the public's reaction to the system will be used in determining whether it can be put into general use or should be modified.

Shower, latrine, and clothes-washing facilities constructed with community funds in a rural area of Trujillo Province, Dominican Republic.



Environmental Sanitation

In few aspects of public health work can the direct relationship between economic development and social benefits be more clearly demonstrated than in sanitation projects. The importance of an ample supply of safe water and its public health and social significance for housing, industry, fire protection, tourism, planning, and labor is an outstanding case in point. Accordingly, in 1959 the XI Meeting of the Directing Council (Resolution XVI) assigned sanitation projects a very high priority, which was reflected in the number of national programs assisted by the Organization during 1960.

The implications of an ample supply of good water for the public health of the people of Latin America can more readily be appreciated when it is realized that today there are over 30 million persons residing in communities of over 2,000 population who have to transport water for drinking, cooking, and cleaning. It becomes apparent that the high incidence of dysentery and the high death rate among children from diarrheal diseases will continue so long as unsafe water is used, and so long as sufficient quantities are not available for personal hygiene and home cleanliness.

In developing its program in environmental sanitation for 1960 the Organization was mindful not only of the water supply problem but also of other pressing problems such as sewage and excreta disposal, garbage and refuse disposal, stream pollution, milk and food sanitation, air pollution, industrial hygiene, and the strengthening of environmental sanitation services in ministries of health.

The Governments of Central and South America face a tremendous task in providing their peoples with the basic services of water supply, sewage disposal, and community sanitation, and during 1960 they called upon the Organiza-



Collecting river water for home use, a common sight in many areas lacking safe and ample water supplies.

tion to assist in the development of programs that would provide the most efficient solutions feasible with the existing national resources. This approach implies that the people who will benefit from the programs should carry a major part of the responsibilities and obligations involved. The Organization would participate by sending consultants, organizing training courses, and awarding fellowships. There are enough communities and major cities in Central and South America that are now demonstrating the feasibility of this approach to show not only that it is sound, but also that it can be implemented under diversified circumstances. However, a further requirement of this approach is that long-term, low-interest loans will be available.

Wherever the average income is low, the charges for water, for sewage, garbage and refuse disposal, and for general sanitation services must be within the ability of the recipients to pay. As short-term, high-interest loans for the construction of the necessary facilities for these services cannot be amortized in even the most advanced countries, they obviously cannot be considered in less fortunate ones. Consequently, sound planning, good organization, able management, and long-term, low-interest loans are essential to ensure repayment of investments from both local and foreign sources. During 1960 the Organization devoted considerable time to the study of water-financing methods and pointed out to all concerned with economic development the importance which water supplies occupy in the national economic development plans.

Water Supply

The expanded program for water supply was initiated in 1960 when contributions to the Special Community Water-Supply Fund were received from the Governments of the United States of America and Venezuela. The Organization's activities developed from recommendations made to the Director by the Advisory Committee on Environmen-

tal Sanitation convened in 1959, and the program was conducted on a Regional basis, special services being rendered to individual countries.

National water committees have been formed and are functioning in Colombia, El Salvador, Haiti, Honduras, Paraguay, and Peru. These committees have been created in several instances by direct assistance from PAHO/WHO staff. The services of PAHO/WHO experts are now available to these national committees, and efforts are being made to assist other Governments in forming such committees, since it is felt that they serve a very valuable purpose and should be created wherever possible.

Two courses on the financing and administration of water supplies and a seminar on water rates (see p. 13) were held during 1960. Venezuela conducted its own course on water administration and management for the principal engineers of the government water agencies. Throughout these courses and the seminar it was emphasized that countries must help themselves; and that in water operations long-range planning, sound organization, good administration, and water rates that are both adequate and equitable are not only the foundation for the financial stability of the water enterprise but also prerequisites for international or local loans.

Financing and Organization Activities

Numerous meetings were held with officials of the International Bank for Reconstruction and Development, the International Development Association, the Export-Import Bank, the Development Loan Fund, the Inter-American Development Bank, and the United Nations Special Fund, with a view of encouraging the support of water projects in the Americas. Organization and/or management studies of water supply systems are under way in Chile, Colombia, El Salvador, Haiti, Honduras, Panama, Peru, Venezuela, and certain countries of the British West Indies.



A plenary session of the Seminar on Water Rates, held in Montevideo, Uruguay, from 25 September to 1 October 1960.

Design and Technical Activity

Assistance in waterworks design, technical review of design, and other technical advice are being provided to Colombia, Cuba, Haiti, and Peru. So far as design is concerned, the objective is the maximum utilization of local materials, simplicity of structure and control equipment, flexibility, expandability, and minimum cost for an adequate system. Highly complex automatic controls, extensive use of imported equipment, and need for highly skilled operators are to be avoided.

Long-Range Planning

In Chile, Mexico, and Venezuela long-range plans that show the present rate of water supply construction, the pro-

jected needs for the next 10 to 20 years, and the mechanism by which the Governments propose to meet this need have been or are being developed. Any serious attempt by Governments to supply their water needs requires that a long-range plan be developed, as only by this method is it possible to consider the components of organization, costs, personnel, priority, and the steps that are necessary to reach a solution. The Organization has given the highest priority to assistance in the development of such plans.

Regional Programs in Water Supply

The following specific Regional activities in the water supply program were carried out during 1960:

First Training Course in Administration, Management, and Financing of Water Supplies, given at the Robert A.



Water tank constructed by villagers under guidance of an engineer. The construction of some 400 similar tanks is planned over a four-year period in the State of Guanajuato, Mexico. Costs of operation and maintenance will be covered by monthly collections from householders. PASB/WHO assigned an engineer to this project.

Taft Sanitary Engineering Center, Cincinnati, Ohio (28 March–13 April), and attended by 35 engineers.

Second Training Course in Administration, Management, and Financing of Water Supplies, given at the School of Engineering, University of Mexico, Mexico City (14 November–2 December), and attended by 60 engineers from Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, and Venezuela.

Seminar on Water Rates, held at Montevideo, Uruguay (26 September–1 October), and attended by 60 engineers from nearly every country of the Hemisphere.

Participation in the VII Congress of the Inter-American Association of Sanitary Engineering (AIDIS), held in Montevideo, Uruguay (2–8 October). The Congress was devoted to water supply in the Americas, and was attended by 450 engineers from nearly every country in the Hemisphere.

In addition, numerous publications and guides relating to water supply organization, financing, suggested procedures on technical and administrative matters, and water supply practices used in other countries of the Hemisphere were distributed to the Member Governments.

Country Programs in Water Supply

Consultant services on water supply organization were provided to Chile, Colombia, Costa Rica, El Salvador, Honduras, Panama, and Peru.

The newly created Inter-American Development Bank made its first loan to Arequipa, Peru. The purpose of this loan, which was for \$3,900,000, is to provide that nation's second largest city with full water supply and sewage dis-

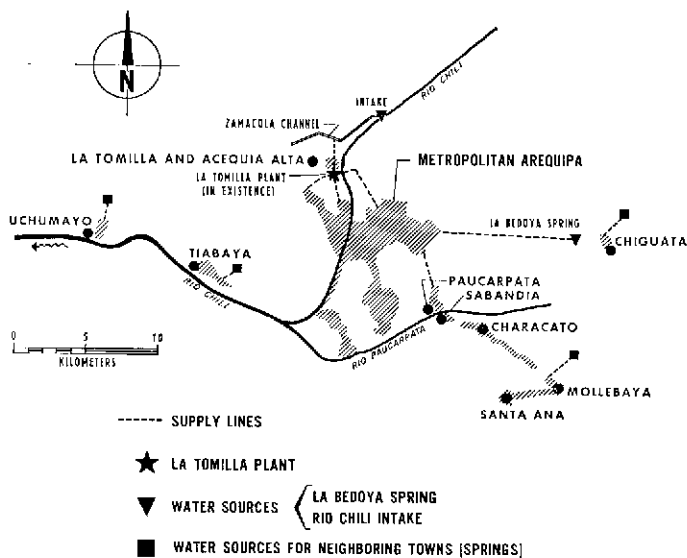


Fig. 2. Metropolitan Arequipa and Neighboring Towns. Water Sources.

posal facilities. The Organization assisted the project through the advisory services of a project engineer and of three short-term consultants who advised on organization, finance, and technical aspects.

Additional plans for the construction or expansion of existing water services are at various stages of development in every country of the Region. It has been repeatedly demonstrated, however, that a period of at least two years may be expected from the time it is decided to build a water system to the time when a request for funds is submitted, and that a period of from one to three more years will pass before construction is completed. Consequently, it is quite true to say in water programs that "five-year planning" is planning for the present.

Food Hygiene

Apart from the need to prevent food spoilage and the interest of keeping food physically clean, the most important public health function of food control is to prevent disease from being transmitted to food handlers and to the consumers.

In Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, and Venezuela the Organization provided materials and technical advice in connection with the investigation of food poisoning and intoxication problems, especially salmonellosis. In Colombia studies were made in preparation for the establishment of training in food hygiene at the School of Public Health in Bogotá. Mexico, Guatemala, and Peru are developing programs for the control and eradication of bovine tuberculosis, especially in dairy cattle; Argentina began a pilot project for the control of brucellosis in cattle.

Assistance was provided to the Ministry of Health of Haiti for the preparation of new legislation for the control of meat and meat products. Similar technical guidance was given throughout the year to the countries of Central America and Panama. New legislation in Peru placed responsibility for the supervision of meat and meat products on the local health agencies. Mexico has greatly increased its activities in the public health supervision of food supplies, especially meat and milk, and has become so concerned about the shortage of veterinarians for this work that the Ministry of Health is providing financial aid to a school of veterinary medicine. With Organization advice, a milk control program has been developed in Bogotá, Colombia, under the Department of Veterinary Public Health of the municipal health service.

Sanitation of Tourist Facilities

At the request of the Organization of American States, the PAHO completed the preparation of a *Manual of Recommended Sanitation Standards for Tourist Facilities*. This man-

ual has been published in English and Spanish by the Inter-American Tourist Service of the Pan American Union. It has been distributed to all the ministries of health of Latin America and to the leading tourist agencies. The purpose of the manual is to help public officials and persons engaged in the operation of tourist establishments to improve the sanitation of such facilities.

Sewage Disposal and Stream Pollution

Member Governments were invited to consider plans for sewage disposal simultaneously with plans for water supplies, although it is recognized that for reasons of cost such facilities cannot always be installed concurrently. Peru and Antigua, W.I.F., requested and obtained assistance in the review of plans, as well as general consultation on local sewage problems.

A Seminar on Pollution of Sources of Water Supplies, jointly sponsored by the Organization and the Government of Brazil, was held partly in Rio de Janeiro (11-18 July) and partly in São Paulo (19-23 July). Consultant services were also rendered to the Government of Venezuela on water pollution problems.

Rural Sanitation

In rural as in urban programs, the need to adopt measures to improve excreta disposal, housing, and village cleanliness whenever a safe water supply system is being provided was increasingly emphasized. As a means to accelerate the construction of new wells, considerable attention was given to the training of engineers and drilling personnel in drilling methods, ground water development, and various water detection techniques. Eleven persons were sent to courses at the University of Minnesota, United States of America, and a locally sponsored course for drillers was held in Mexico.

Engineers and sanitarians assigned to the integrated health services projects, to which reference is made at the beginning of this section, gave assistance to the Governments of Argentina, British West Indies, Chile, Colombia, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, and Uruguay. Such assistance included advisory services on the provision of safe water, means for excreta disposal, improved housing,

personnel training, and the organization of sanitation services. At the same time, the problems of individual municipalities within the project areas were considered.

Garbage and Refuse Disposal

Two consultants visited Brazil, Cuba, El Salvador, Honduras, Mexico, and Venezuela to discuss the problems of municipal garbage and refuse disposal and to assist in the solution of specific local problems. Information collected during these visits served as a basis for a report to the Directing Council and was used in its Technical Discussions on this topic.

Industrial Hygiene

A consultant was provided to the Government of Venezuela to review the national program in industrial hygiene, and several discussions were held with responsible Chilean officials concerning the promotion of industrial hygiene in that country.

Technical Discussions

The Technical Discussions held as part of the XII Meeting of the Directing Council were devoted to the Technical, Administrative, Legal, and Financial Aspects of Garbage and Refuse Disposal. The discussions brought out the magnitude of the garbage and refuse problem in all countries of the Hemisphere and contributed to a better understanding of the economic implications of this frequently neglected public health activity. Several speakers emphasized that more attention would have to be given to this problem in every country and that the interest of sanitary engineers should be aroused in order to ensure more effective work in the future. The Directing Council acknowledged the importance to public health of good refuse collection and disposal practices and encouraged all ministries of health to stimulate and support national and local programs. A full report of the discussions and recommendations of the Directing Council was prepared and distributed to the Member Governments.¹

¹ The report was also published in Spanish in the *Boletín de la Oficina Sanitaria Panamericana*, Vol. L, No. 1 (January 1961).

Maternal and Child Health

Services that for many years and in many areas were dedicated exclusively to mothers and children are gradually beginning to deal with the family as a unit and thus becoming an essential part of total health activities. As a result, the maternal and child health section or unit at the national level, a new departure in a number of countries, has taken its place among other services entrusted with the development of policies, procedures, and norms aimed at providing family-centered health service.

In countries in which the Organization is cooperating in public health services projects, its activities were directed toward improving these services so that they may provide facilities to the increasing number of mothers seeking prenatal, maternity, and postnatal care.

At the local level, training for auxiliary personnel was focused on the family as a unit, since polyvalent staff, especially in rural areas, are responsible for the care of women during the maternity cycle, the protection of the infant and young child against preventable communicable diseases, and the health education of families.

Maternity Care

Health authorities are giving increased attention to the traditional birth attendants who assist at 90 per cent of home deliveries in rural areas. In some areas these attendants are required to report to the health center the births they assist at and to attend training classes.

Since the professional midwife in the health services is carrying out some functions that are more properly those of nurses, her preparation is also receiving special attention (see p. 78).

The increase in the number of hospital deliveries, especially in urban and suburban areas, has brought out the need for a careful study of the services rendered by these institutions to mothers and children.

Child Care

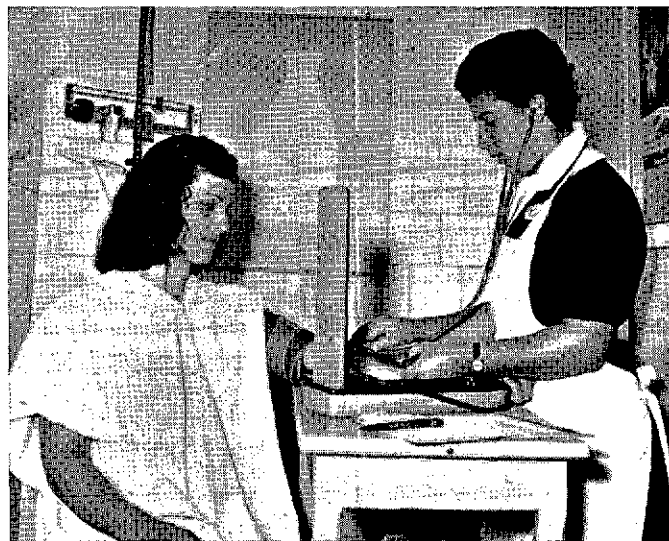
Care of infants under one year of age is generally satisfactory in most maternal and child health centers; it has been observed, however, that the quantity and the quality of the care given to older children do not meet their actual needs. The Organization has tried to stimulate the provision of more care for preschool children, particularly for those who are in the critical weaning period, which in Latin America generally occurs at a rather late age. Nutritional problems are more acute then, and it is evident that

maternal and child health services should take adequate measures for the education and supervision of the mothers concerned and give special attention to this decisive period for the child, which lasts until he can share fully in the family diet.

The school child is also receiving insufficient attention, because health centers do not have enough staff to provide care to all population groups. However, since health education can be incorporated into the basic school program, it is evident that more intensive action is required in this field.

A number of countries are already beginning to extend their child care activities to crippled children. Initially, this is being done through case-finding and registration, but the ultimate aim is to institute a program within the financial possibilities of the country.

With the aid of a short-term consultant assigned by the Organization, one country has already undertaken a survey of children's needs, and another has shown interest in initiating a similar activity. These surveys are preliminary to the preparation of projects in which PAHO/WHO and UNICEF will cooperate with Member Governments in the establishment of better services for children of all age groups, although particular attention will continue to be given to the infant and the preschool child.



An expectant mother receives prenatal care from one of the nurses of the Rural Health Services Program in Montevideo, Uruguay.

Nutrition

In the final analysis, the problem of nutrition is the inevitable result of the sum of a nation's economic, social, cultural, agricultural, and health conditions. The policy of the Organization is to collaborate with the Member Governments in seeking formulas for establishing a well-oriented course of action and to assist in coordinating all national efforts to improve the nutritional status of the peoples of their countries. The Organization also tries to strengthen the existing cooperation with other international agencies working on the problem of nutrition, such as the Food and Agriculture Organization (FAO) and the United Nations Children's Fund (UNICEF), with a view to achieving the most effective solution.

The Governments of the Americas are well aware of the severity of the problem of malnutrition—which is linked to so many other social problems—and never before has their desire to begin energetic corrective action been so evident. Consequently, during 1960 the Organization's activities in this area were greatly intensified. One important change was the creation of the post of Regional Nutrition Adviser at Headquarters, separate from that of the Director of INCAP. Two additional posts of nutrition advisers were established to promote work at the Zone Office level.

Expanded Nutrition Programs

The Governments showed a marked interest in the establishment of expanded nutrition programs that would include activities on education and food production.

Owing to historical, geographical, and social reasons, rural families in large areas of the Americas have an extremely low standard of living. In addition to substandard housing and an environment frequently hostile to health, their diet is manifestly deficient both in quality and quantity. A purely educational approach to this problem in the rural areas is insufficient; it must be complemented by a policy of increasing the production of some basic foods at the family level.

It is therefore along these lines that several Governments, working in close cooperation with PAHO/WHO, FAO, UNICEF, and occasionally the United Nations Educational, Scientific and Cultural Organization (UNESCO), are trying to raise the inadequate dietary standards. Planning started in 1957, and by 1959 projects were established in selected rural areas of Chile, Guatemala, and Paraguay. During 1960, similar programs were initiated in Brazil, Costa Rica, and Ecuador; and the necessary preliminary studies have been made in Bolivia, Colombia, El Salvador, Haiti, Nicaragua,

and Peru, where comparable programs are planned to begin in 1961. Although these programs begin on a small scale, the Governments are interested in extending them to other areas. The Organization has taken part in this entire endeavor, and negotiations are currently under way with some Governments that are planning even larger programs for the future.

Protein-Rich Foods Program

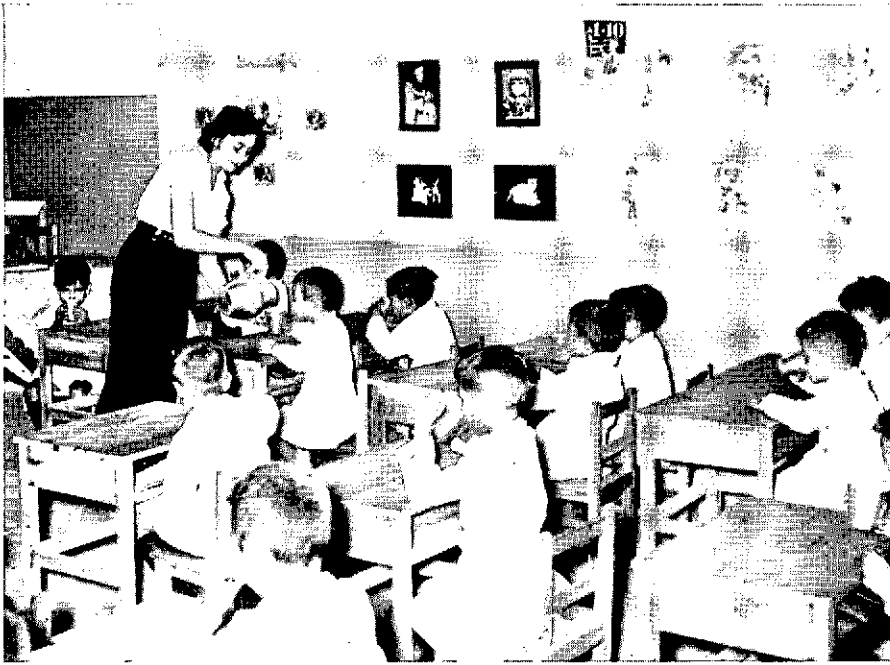
Protein deficiency, particularly among young children, is one of the most serious nutritional problems in the Americas. Pursuant to Resolution VII of the XII Meeting of the Directing Council, the Organization offered to assist, within the sphere of its responsibilities, the Governments that expressed interest in exploring the possibilities of producing vegetable protein mixtures similar to INCAPARINA, the product so successfully developed by INCAP. The utilization of low-cost products that are readily available—such as cottonseed, peanuts, or soybeans—will supplement other activities that Governments may undertake to solve the problem of protein deficiency. The marketing of a low-cost, protein-rich product would benefit both rural and urban populations.

Anemias

Anemias, particularly iron-deficiency anemias, constitute an almost unexplored field of great public health importance. Although they are widespread in the Americas, little is known of their prevalence and exact nature, and broad surveys are needed to clarify the etiological factors involved in order to establish suitable preventive measures. In this regard the Organization collaborated with the Government of Peru in a study, begun in a rural area, to ascertain the origin of the anemias prevalent in that region. Although hookworm, malaria, and other diseases may play an important part in the etiology of anemias, there are factors which seem to indicate that endemic parasitism is not the only cause of the iron-deficiency anemias. Ecuador, Guatemala and Venezuela have also begun epidemiological studies in this field.

Endemic Goiter

Endemic goiter is another important nutritional problem in the Hemisphere. Although this disorder is a public health problem that in theory is easily solved with the iodization



Milk supplied by UNICEF is distributed among school children to supplement the meals they have at home.

of salt, in actual practice there are difficulties, chiefly of a legal and sometimes of a political nature, which delay the adoption of preventive measures. Hence, in programs designed to eliminate or control endemic goiter, the Governments will have to enact laws making the iodization of salt compulsory.

The iodization of salt for human consumption has been compulsory in Guatemala since 1954 (see p. 18). In the other Central American countries and in Panama, INCAP continued the study of factors that have prevented the application of the recommendations on salt iodization made by its Council and Technical Advisory Committee.

With technical assistance from the Organization, one country in the Region, Paraguay, requested from UNICEF new equipment for the iodization of salt. The necessary negotiations have been completed and the machinery will be delivered in 1961.

National Institute of Nutrition of Ecuador

The consultant assigned to the National Institute of Nutrition of Ecuador (INNE) continued to serve there during 1960. Activities at the Institute were directed toward the education and training of personnel, research, and programs of applied nutrition.

The Institute further strengthened the national program of education in nutrition at the Quito School of Medicine, the School of Social Service, and schools of nursing. A special course for rural schoolteachers was organized in cooperation with the other international agencies participating in the Andean Indian Mission program. INNE's Department of Education was given assistance in the review of

teaching material and the preparation of prototypes of audio-visual aids. Five health centers located in Quito and Guayaquil incorporated nutrition education activities into their regular programs.

As to research, the consultant assisted the Institute in initiating studies to develop new mixtures of high vegetable protein content and began tests on a native seed called "chocho" (*Lupinus mutabilis*). In areas of endemic goiter, therapeutic tests consisting in the administration of potassium iodate tablets (8.5 mg. per week) were made on 300 school children in order to evaluate the response, if any, as evidenced by changes in their intellectual output or efficiency. The subject of another research program was amino-acid supplementation, and a fourth dealt with lingual lesions known as "geographic tongue." In the field of research, INNE has received substantial support from the National Institutes of Health (NIH) of the United States of America and from private foundations, the Williams-Waterman Fund evidencing particular interest in helping to solve the nutrition problems of Ecuador.

Seminars and Conferences

In cooperation with the Government of Brazil, FAO, and UNICEF, the Organization helped to organize and participated in a Seminar on Nutrition Education held at Quitandinha, Petropolis (15-24 June 1960), with representatives from 10 South American countries. The methods, content, and materials of education in nutrition through schools, public health services, and agricultural extension services were discussed. Arrangements have been made to

hold a similar seminar in 1961 for personnel from Central America, Panama, Mexico, and the Caribbean area.

The Director of PASB and the Director-General of WHO participated in the Fifth International Congress on Nutrition, held 1-7 September in Washington, D. C. Another important meeting was the Conference on Malnutrition and Food Habits, held at Cuernavaca (9-14 September) at the invitation of the Government of Mexico. Sponsored by the Josiah Macy Jr. Foundation and the World Federation for Mental Health, it was organized with the assistance of the PAHO/WHO, FAO, and UNICEF and attended by nutritionists, psychologists, pediatricians, sociologists, anthropologists, and economists.

Trends

Training, as such, is covered elsewhere in this report, but it should be clear that in nutrition projects the training of national personnel is being given preferential attention. Since education in nutrition is in itself a health education activity, it should be integrated into public health programs and become an inseparable part of them. The 1960 joint PAHO/WHO, FAO, and UNICEF survey of the present status of nutrition education programs in the Americas was typical of international and interagency collaboration. On the basis of the report submitted and through the combined efforts of the Governments and the international agencies, it is anticipated that attendance at the existing nutrition training schools will increase and that the scope of the programs offered will be enlarged in the years to come.

The Organization has also been following the programs of economic and social development being carried out in the Americas, since adequate nutrition is an essential component of the well-being of the people—the ultimate objective of these programs.

Food Additives

During 1960, food additives again occupied the attention of both the Governments and the Organization. FAO and WHO conferences and expert committee meetings dealt with the chemical, physical, pharmacological, toxicological, biological, and other properties of these agents.

Many inquiries were received from countries regarding particular food additives, schedules of acceptable and non-acceptable additives, and legislation governing the use of these products.

The growing tendency of the meat industry in a number of Latin American countries to use antioxidant and antimicrobial agents as preservatives, the effects of these chemicals and drugs on the health of consumers, and the control of such meat processing techniques have been of prime concern to public health officials.

Institute of Nutrition of Central America and Panama

The Institute of Nutrition of Central America and Panama (INCAP) continued to fulfill its responsibilities. These are, succinctly, the study of the nutrition problems of Central America and Panama; investigation of possible ways of solving such problems; and provision of advisory services and assistance to member countries in carrying out recommended measures.

Advisory Services to Member Countries

Advisory services to national nutrition sections in ministries of health were intensified in 1960 through frequent and periodic visits to the member countries by INCAP's staff, who assisted in planning, executing, and evaluating the national programs.

In this respect, the expanded nutrition programs of Costa Rica, El Salvador, and Nicaragua are worthy of mention. Here INCAP coordinates the efforts of the Ministries of Public Health, Agriculture, and Education with those of PAHO/WHO, FAO, and UNICEF to improve the nutritional status of the population through education and local food production.

Technical advisory services continued to be given to food enrichment programs. In Guatemala some problems related to the iodization of salt, which has been compulsory there since 1954 when appropriate legislation was enacted, were studied in collaboration with the nutrition section of the National Department of Health and the Association of Salt Producers. A series of recommendations were made to improve salt iodization and to secure compliance with the law. Advisory services to the nutrition section were also provided in drawing up regulations and procedures for the enforcement of the law promulgated in 1960 on the enrichment of wheat flour.

Programs on the enrichment of wheat flour received special attention, and studies were made on the most suitable way of enriching corn "masa" flour, the commercial production of which is being considered by some member countries. On the basis of the above-mentioned studies, specific recommendations have already been made regarding a practical method of enrichment which helps to remedy the protein, vitamin A, and riboflavin deficiencies in the "masa."

Technical advisory services were rendered as usual to member countries in the development of local programs of supplementary feedings for various population groups and education in nutrition at all levels, ranging from mothers and primary school children to agricultural extension students and university graduates.

Personnel Training Programs

The year was exceedingly important for this new INCAP activity, since its plan for academic and practical training was formally established and the necessary rules and regulations were drawn up. The INCAP School for Nutritionists and Dietitians began operating in 1960, and the first course was attended by seven university graduates from four of the six members countries. Another three graduate dietitians from three countries of the region attended the third term of this course to acquire the necessary knowledge of applied nutrition to enable them to incorporate nutrition services into public health, education, and agricultural programs. Plans for the School's second year course include a six-month internship in the dietetics service of the Roosevelt Hospital and six months of field practice in an area under the jurisdiction of a health center, both in Guatemala.

The first three-month course in nutrition for public health physicians was also held during the year. It was attended by nine physicians from Colombia, Costa Rica, Ghana, Guatemala, India, Indonesia, and the United States of America, all of whom had completed their public health studies at the Universities of Columbia, Harvard, California, or Western Reserve.

In-service training programs, another important personnel training activity, received special attention during the year. More than 25 persons from Brazil, Ceylon, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Korea, Mexico, Nicaragua, Panama, Paraguay, the Philippines, United States of America, and Venezuela received training in the fields of agricultural and food chemistry, clinical biochemistry in nutrition, bacteriology, dietetic surveys and nutrition education, clinical and public health nutrition, physiology and pathology of nutrition, organization of food services in hospitals, general nutrition and treatment of malnutrition in preschool children, and laboratory techniques.

An advanced seminar on dietary surveys was held at INCAP headquarters from 17 October to 9 December under the auspices of FAO, INCAP, and UNICEF. The seminar was conducted under the joint direction of an FAO nutritionist with long experience in dietary survey work and of the chief of the dietary surveys section of INCAP, and was attended by 11 dietitians with previous experience in this field from Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Nicaragua, and Panama. The different survey methods in use were discussed, and specific recommendations were made on the most suitable methods to follow according to the objectives of the survey and the facilities available.

In view of the desirability of having a Regional center for the training of personnel for dietary surveys, steps are being taken to establish such a center within the Institute, under the joint auspices of INCAP and FAO.



INCAP's Nutrition Education Chief discusses with research workers the distribution of INCAPARINA to 17 test families in Amatitlán, Guatemala. Each bag costs U.S. \$0.03 and contains the necessary protein for one day for a preschool child.

Development and Utilization of INCAPARINA

INCAP's development of INCAPARINA, a low-cost vegetable mixture with high nutritive content devised to prevent protein malnutrition in low-income population groups, aroused so much interest that the Director of PASB saw fit to make a report on the product to the XII Meeting of the Directing Council of the Pan American Health Organization (Havana, Cuba, August 1960).¹ The Council adopted Resolution VII, which recommends "to the Member Governments that, through their respective public health and related departments, they carefully study the potential value and the possibilities of producing INCAPARINA or similar local products, and the means of promoting the consumption of these products by the public."

Negotiations are at present under way to promote the consumption of INCAPARINA, especially in Central America. For a trial on a commercial scale carried out in Guatemala, several scattered population groups were selected in urban, semiurban, and rural areas where there were health centers or health units that could recommend the product to the most needy families. Although limited in scope and duration, the trial proved conclusively that the product was quite acceptable, since all the INCAPARINA produced was rapidly sold even though there had been no promotion other than recommendation by word of mouth. This favorable result led toward the end of the year to the conclusion of an agreement whereby a reputable domestic commercial firm will take charge of producing and dis-

¹ *Official Document PAHO 36*, pp. 286-291.



Preparation of INCAPARINA requires only the addition of water and cooking for 10 minutes. Children accept it readily.

tributing INCAPARINA in sufficient quantity to cover the immediate needs of the market in Guatemala.

Acceptability tests for INCAPARINA were also carried out in El Salvador and Nicaragua, with equally satisfactory results. Arrangements with commercial firms to undertake the production and distribution of INCAPARINA in both these countries are well advanced. Requests from commercial firms in other interested countries of the area are at present under consideration.

The development of INCAPARINA has had a strong impact in areas other than the Central America region, as is shown by the many articles that have appeared in various publications, the numerous letters received at INCAP from almost all parts of the world asking for information, and formal requests from businessmen and firms for producing the mixture in their own countries.

In view of these developments, INCAP is working on modifications of the present formula that may better be adapted to the needs and possibilities of other areas where the availability and cost of the INCAPARINA ingredients make its production impractical, or where the dietary habits of the population differ from those prevailing in the regions for which the mixture was originally planned.

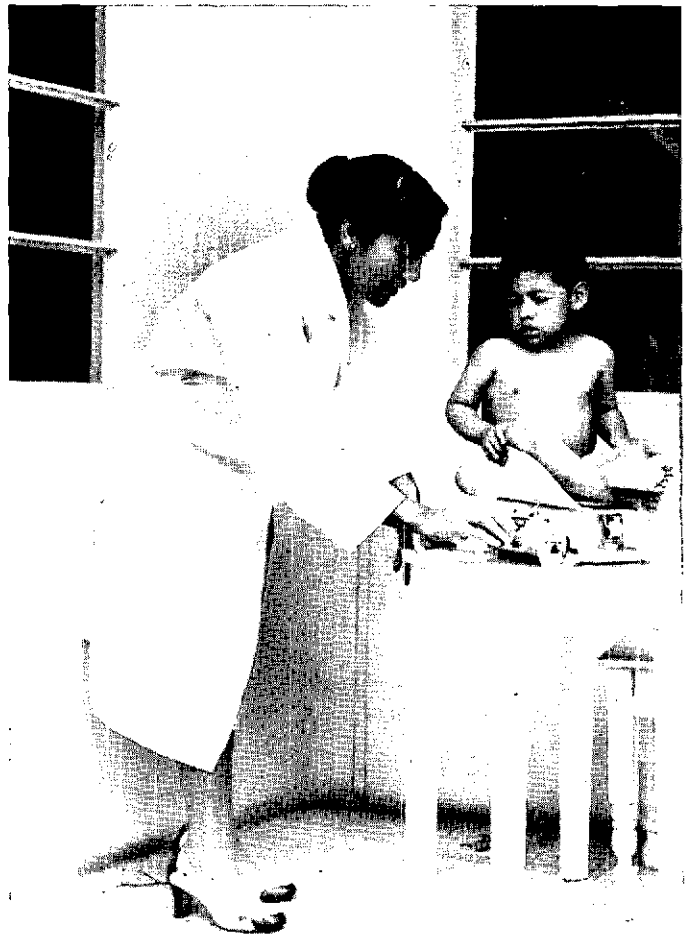
Research Programs

During 1960 INCAP continued its research on protein malnutrition and its prevention, assessment of nutritional status, nutritional requirements, the interrelationship of acute infections and nutritional status, and diet and its effect on chronic diseases.

Research on the various forms of infant malnutrition, in which INCAP has been engaged for some time, produced valuable information suggesting metabolic differences in the adrenal activity of children affected by protein malnutrition and by marasmus. Tests are under way to verify a hypothesis which would explain the clinical differences observed between these two syndromes.

Surveys to assess nutritional status included special activities to determine the possibility of using various fractions of urinary nitrogen—even in specimens obtained in short periods—to develop a practical method applicable to different population groups. Preliminary results suggest the possibility of obtaining indicators that will be of value in practice.

Work on nutritional requirements was continued, nitrogen balance studies in children being used to ascertain the validity of the provisional standard for amino acids established by the FAO Reference Protein. Thus far, the results obtained by supplementing the various cereals studied with the amino acids in which they were deficient suggest that



Guatemala City, Guatemala. An INCAP staff member weighs a child under observation in connection with nitrogen balance studies.

the FAO provisional protein standard requirements are too high for tryptophan and possibly also for methionine.

Research on the interrelationship between infections and nutrition included epidemiological field studies—the first year of a five-year project—and metabolic studies in children with various infections. The latter studies showed significant effects caused by infectious processes of various kinds, including viral infections as benign as mild forms of chickenpox or yellow fever vaccination with 17D virus.

As to studies on diet and its effect on chronic diseases, preparations were completed for the inter-American project on atherosclerosis that was begun last year. The 16 collaborating pathologists are from Brazil, Chile, Colombia, Guatemala, Jamaica, Mexico, Puerto Rico, Union of South Africa, and Venezuela. Under this five-year project, subsidized by a grant from NIH and carried out in cooperation with the School of Medicine of Louisiana State University, a study is being made of specimens of aortas and coronaries to determine the prevalence of atherosclerosis in the countries mentioned above. The purpose of the study is to try to ascertain the factors responsible for the condition. Up to now more than 2,500 specimens have been examined.

Publications

The year 1960 was a fruitful one for INCAP insofar as scientific and other publications were concerned. Sixty-five original articles have been published in authoritative Latin American publications or other scientific journals in Europe and the United States of America. To date, the total number of papers produced by the Institute is 225 in Spanish and 200 in English.

To keep the member countries abreast of developments in its field, INCAP continued to issue at regular intervals special volumes that include its own findings as well as translations into Spanish of papers originally published in other languages. Supplement No. 4 of the *Boletín de la Oficina Sanitaria Panamericana*, containing 38 articles and summaries of papers previously published in other Spanish-language publications, is scheduled for publication in 1961.

Participation in Teaching Activities

As mentioned earlier, the Institute devoted special attention to teaching activities. Several of its staff members helped to develop 15 theoretical and practical courses related to public health nutrition programs. In addition, wishing to collaborate effectively with universities, associations, and government agencies of the member countries, INCAP staff and outstanding visiting consultants gave approximately 30 lectures during the year and took part in round-table discussions on nutrition and related science.

Visitors

During the period covered by this report, INCAP received over 350 visitors from Africa, Canada, Central America, China, Europe, India, Indonesia, Japan, Korea, Mexico, the Philippines, Puerto Rico, United States of America, and other countries, all of whom were interested in observing the work of the Institute and in familiarizing themselves with the development of its programs.

Medical Care

The Organization long ago defined health in positive terms, so that health promotion, protection, and rehabilitation—formerly regarded as separate activities—are now considered component parts of a whole.

This approach implies that medical care should consist not only in therapy and rehabilitation to restore the health of a patient, but also in the adoption of procedures to promote health, prevent disease, and detect asymptomatic illnesses. It also implies that the basic health services, one of which is medical care, should be integrated or at least coordinated.

But although the integration of these services is accepted in theory, in practice the efforts to achieve integration vary markedly from country to country owing to historical

and cultural reasons and the separation between public health services and medical care services.

In accordance with this approach, the Organization has attempted during 1960 to incorporate medical care activities into the programs being developed in the Member Countries. This type of activity has to be carried out in well-planned stages.

As was anticipated in the Annual Report for 1959, a Regional Medical Care Adviser was appointed to Headquarters in 1960. His duties are to assist the Governments in the planning and organization of hospital "systems" in the countries; the establishment of medical care services in outpatient departments, dispensaries, and health centers; the development of suitable coordination between hospitali-



The Rehabilitation Institute of the University of São Paulo, Brazil, restores as much physical capacity to the disabled as possible and, in addition, provides them with vocational training. This man now works as a leather stitcher in a shoe factory, in spite of the residual paraplegia caused by poliomyelitis.

zation and outpatient services; and the definition of the place of medical care in the general plans for the development of health services.

To ascertain the needs of the countries, a document containing a statement of the problems, together with a questionnaire regarding the information needed to enable

the Organization to give preliminary guidance, were circulated. The data provided by the replies to the questionnaire are now being compiled, analyzed, and interpreted.

During 1960 the Organization continued to provide advisory services to Governments on certain medical care problems, with a view to promoting the integration of preventive and curative health services. Services of this type were furnished to Argentina, Chile, Colombia, Cuba, El Salvador, Panama, Peru, and Venezuela by the Regional Adviser, the Zone Representatives, and the international staff assigned to national health programs, and will gradually be extended to the remaining countries in the Americas.

The Organization also continued to maintain, improve, and expand some of its activities in the field of rehabilitation, regardless of the etiology of the incapacity.

In cooperation with other international agencies interested in the rehabilitation of the disabled, the Organization continued to participate in the Rehabilitation Training Center, located in São Paulo, Brazil, where techniques for restoring as much capacity as possible to the physically disabled are being taught.

At the request of the Government of Chile, the Organization provided the services of a technical consultant in prosthetic appliances.

During the year, negotiations were begun with the Sister Elizabeth Kenny Foundation for financial aid to rehabilitation programs in Latin America. In the meantime, the Foundation provided assistance by financing the services of a physical rehabilitation adviser to the Government of Mexico.

Mental Health

The reduction in morbidity and mortality from certain communicable diseases, the lengthening of the life span, and the stresses brought on by a constantly changing environment are some of the factors that have led to the emergence of mental disorders and some of their consequences as important public health problems. Worthy of mention in this respect are alcoholism, juvenile delinquency, certain forms of mental retardation, the psychological problems of children and of the aged, and some types of violent death. A program to cope with these problems requires trained staff, scientific research, and the cooperation of the people.

In past years, the Organization's contribution in the

field of mental health has taken the form of organizing seminars, providing short-term consultant services, awarding fellowships, and giving wide distribution to pertinent literature prepared by the WHO. In 1960, however, it was decided to expand mental health work in the Americas and to appoint a Regional Mental Health Adviser at Headquarters. His first assignment was to make a study of the mental health problems of the Region and to draw up an appropriate program. In this connection Headquarters has been compiling information on the mental health problems, resources, and facilities of the countries of the Hemisphere. This information will enable the Organization to give advisory services designed to promote better utilization of

national resources and facilities as well as the integration of mental health goals and techniques into public health programs, as was recommended by the WHO Expert Committee on Mental Health that met in Geneva in October 1960. This Committee also pointed out the importance of the Region of the Americas for research on, and the solution of, certain important problems.

Because of the relation between mental attitudes and dietary habits, the Organization was represented at the Conference on Malnutrition and Food Habits held at Cuernavaca, Mexico, 9-14 September. The Latin American Seminar on Alcoholism, held 21-26 November in Viña del Mar, Chile, was organized by PAHO/WHO and was attended by participants from 15 countries of the Hemisphere. This Seminar recommended that the Organization coordinate the research activities in this field, which offers so many possibilities for preventive work.

The Organization was represented at the IV Latin American Congress on Mental Health, organized by the Latin American Mental Health Association in Santiago, Chile, 4-10 December. In the discussions the serious interest of the various professional groups was brought out, as was the need for coordination and exchange of information in the matter of research methods and mental hygiene techniques.

Present conditions in the Americas are favorable to activities aimed at solving the problems of populations who for centuries have suffered the consequences of factors that affect their mental health and result in tremendous material and other expenditures. The complex problem of mental health is indeed a challenge, but it is a challenge that must be faced. One way of meeting this challenge will be research on the etiology, distribution, control, and prevention of mental diseases in the Americas.

Dental Health

The Organization's activities in the field of dental health up to July 1960 continued to be concentrated on the training programs for public health dentists that are being carried out in cooperation with the School of Hygiene and Public Health of the University of São Paulo.

The Regional Dental Health Adviser, who had been stationed in Zone Office VI since 1958, was transferred to Headquarters in July after he had spent four months in Brazil, where he assisted in the courses at the University of São Paulo. An intensive course on orientation in public health dentistry was given for the first time during that period. The course, which will be repeated annually, lasted nine weeks and was attended by 16 students, five of whom were PAHO/WHO fellows. An evaluation made at the conclusion of the course indicated that excellent results had been obtained. For eight weeks, the students were taught basic concepts of public health, preventive dentistry, public health dentistry, health education, and cultural anthropology. An additional week of observation was provided in a community with integrated health services where the students worked either in small groups or individually. Through this course it was possible to teach the public health aspects of dentistry to dentists with interests as varied as teaching, administration, school health services, industrial services, and local public health services. The course also served as an alternative for dentists who did not need to have a thorough knowledge of public

health and who, for one reason or another, were unable to take the one-year training course for specialists.

The full-year course for specialists in dental public health at the University of São Paulo, Brazil, was given for the third time in 1960. Thirteen students completed the course, five of whom were PAHO/WHO fellows. An appraisal of this three-year program for training public health dentists reveals that this is one type of activity in which international cooperation has proved to be highly effective. During the period 1958-1960, training was given to 57 dentists from 18 countries of the Region; 33 of them were awarded PAHO/WHO fellowships.

A Manual of Dental Public Health, in Portuguese, containing general principles and standards applicable to the situation in Latin America, was used for the above course. The first two volumes cover dental health theory and practice, and were prepared by the PAHO/WHO Regional Adviser. The third volume, which deals with preventive dentistry, was prepared by the faculty member in charge of that part of the course. The three volumes are an important contribution to specialized literature, particularly in view of the didactic nature of the work.

The dental health training program at the University of São Paulo was developed pursuant to a tripartite agreement concluded between the University of São Paulo, the W. K. Kellogg Foundation, and the Organization. Although this agreement expired at the end of 1960, it



Dental surveys of children attending public schools provide practical experience for dentists taking the course in public health at the University of São Paulo, Brazil. While a PAHO/WHO fellow from El Salvador examines the child, another from Paraguay records the information; a Brazilian dentist acts as assistant. Team members rotate in carrying out their responsibilities.

has been extended for another three years at the request of the University. During the first three years, the Regional Adviser participated actively in the teaching phase of the courses; in the next three years his activities will be confined to providing advisory services to the program, particularly in connection with surveys and field training.

In the same period, advisory services were furnished to the Committee appointed by the Government of the State of São Paulo to study the reorganization of school dental services; and, at the request of the Governments of Haiti and El Salvador, to the department of dental services of both countries on problems relating to their organization and plans of work. A visit was made also to Resistencia, in El Chaco Province, Argentina, during which discussions were held on several aspects relating to the dental health programs of the Province.

The Adviser participated in a series of round-table discussions on dental health topics in Port-au-Prince, Haiti, and gave a series of lectures in this field to physicians and dentists of the public health services of Guatemala. Lectures on dental health were also given in Resistencia, Argentina, under the auspices of the Public Health Ministry of El Chaco Province; in São Paulo, under the auspices of the School Dental Service and the Odontopediatric Section of the São Paulo Association of Dental Surgeons; and in Mexico City, under the auspices of the Mexican Dental Association and of the Health Service of the Federal District.

Two articles on dental health, written from the international point of view, were published in the *Boletín de la Oficina Sanitaria Panamericana*. One of them, dealing with the trends in dental training in the Hemisphere, calls attention to the principal changes that are being introduced into plans of study with a view to improving the training of professionals and making them better able to adapt themselves to the needs of the environment in which they are to practice. The other article examines the problems which the dental profession must face in connection with the rapid social evolution taking place at the moment. Both papers have been reprinted in several specialized publications of Latin America.

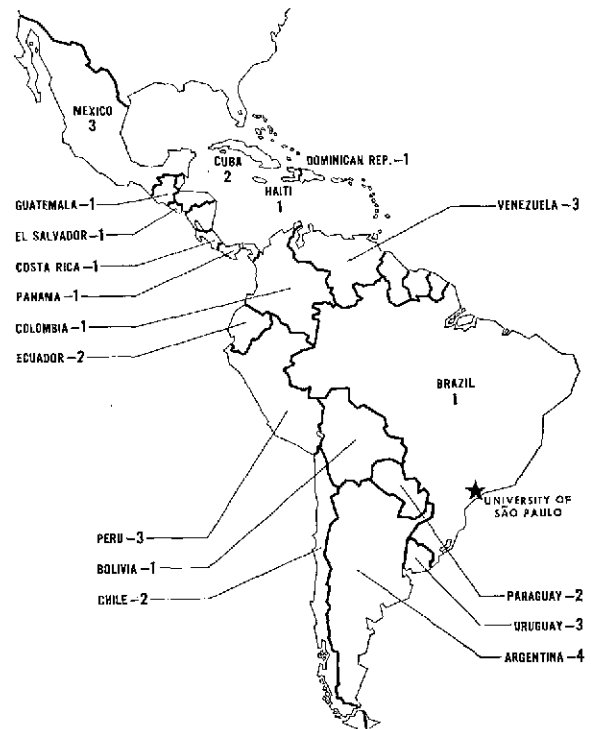


Fig. 3. Number of Students from Countries of the Americas Who Received PAHO/WHO Fellowships to Study Public Health Dentistry at the University of São Paulo, Brazil, 1958-1960.

Radiological Health

Since ionizing radiation, like other causes of disease, can be controlled by public health techniques, radiological health should, quite properly, be the responsibility of the health services.

The function of the PASB radiological health unit, which was established in the second half of 1960, is therefore to promote the role of public health in the field of applied nuclear energy in this Hemisphere.

Late in 1960, the Regional Radiological Health Adviser and the Specialized Technical Adviser in this field visited state and local departments of health in the United States of America, where radiological health units are presently being established for the protection of the population against the harmful effects of ionizing radiation. Observation of the administrative methods used, of the procedures for selecting and training staff, and of the formulation of survey and environmental control programs provided an excellent opportunity to acquire experience that could be applied under certain circumstances in assisting the health services of the Latin American countries. Contacts made during the course of these visits will be of value to the Organization both for training purposes and for the recruitment of short-term consultants.

The chief of the unit represented WHO at a meeting of the International Atomic Energy Agency (IAEA) Panel

on Disposal of Radioactive Wastes into Fresh Water, held 28 November–2 December in Vienna, Austria.

At the request of the Government of Chile, a review was made of the instrumentation and other laboratory requirements for a project for the training of personnel in the medical use of radioisotopes.

During December the members of the unit gave a series of lectures to the professional staff of Headquarters on radiological health.

The program of the unit will be directed in the near future along the following four main lines:

(1) Stimulation of national health services to develop procedures for the regulations governing the use of X rays and radioisotopes and the disposal of radioactive wastes, based on the recommendations of the International Commission on Radiological Protection.

(2) Promotion of the teaching of basic health physics and radiological health protection in schools of medicine, dentistry, public health, veterinary medicine, etc.

(3) Fostering of the use of radioisotopes for medical diagnosis, therapy, and research.

(4) Encouragement of research on applications of radiation that may be of importance to medicine, public health, or veterinary medicine.

Health Statistics

In 1960 increased statistical services were provided to the staff of the Organization, in particular in the analysis of data for use in the planning of water supply systems, environmental sanitation programs, and education and training programs. Two major publications, *Health in the Americas and the Pan American Health Organization* and the *Reported Cases of Notifiable Diseases in the Americas, 1949-1958*, were issued. Consultant services in the field increased.

Collection, Analysis, and Distribution of Statistical Information

The report entitled *Health in the Americas and the Pan American Health Organization* was prepared by the Organization in response to a direct request from a U. S. Senate

Subcommittee. The report included data on the health problems of the countries of the Hemisphere and was published in English by the U. S. Government Printing Office. Spanish and Portuguese editions, for which an introduction was written by the Director, were issued by the Organization. The report has proved a valuable tool in many programs in which the Organization is collaborating, and excerpts from it dealing with the water problem and manpower for health have been issued as reprints. Pursuant to Resolution XXXVII of the XV Pan American Sanitary Conference plans were developed for the preparation of the *Summary of Four-Year Reports on Health Conditions in the Americas* for presentation to the XVI Conference; and, in keeping with Resolution WHA11.38 of the Eleventh World Health Assembly, of the second *Report on the World*

Health Situation, for presentation to the Fifteenth World Health Assembly. Both meetings will be held in 1962.

The Weekly Epidemiological Report, which contains data on the quarantinable diseases, continued to be prepared each Tuesday and distributed the following day, by air mail, to the health authorities of 54 countries and territories. Reported cases of these diseases in the Americas during 1960 are shown in Table 4.

The quarterly publication *Health Statistics* provides monthly totals of cases of five quarantinable diseases, by location within countries, and of other notifiable diseases, by countries.

Reported Cases of Notifiable Diseases in the Americas, 1949-1958, the second of a series which provides annual figures of reported cases, was issued in English and Spanish. It gives data on malaria and on the five quarantinable diseases that occur in the Americas by major political divisions, and the age distribution of reported cases for 12 diseases. For the first time this publication included data on zoonoses in man and in animals and an interpretation and discussion of the reporting of notifiable diseases in the Americas.

In 1960 a full-time statistician was assigned to the malaria eradication program for the Americas. He gave instruction in statistics in four courses for senior officials at the Malaria Eradication Training Center in Kingston, Jamaica, and conducted research on the analysis of mosquito susceptibility tests (graphic technique), problems of sample design for epidemiological evaluation, methods and forms for the tabulation and visualization of evaluation data, and specific statistical problems of the national malaria eradication services. Statistical material on the status of malaria

eradication in the Americas was compiled for presentation to the XII Meeting of the Directing Council and to the Fourteenth World Health Assembly.

National public health officials were kept informed of progress in the *Aedes aegypti* eradication campaign, in conformity with Article 70 of the *International Sanitary Regulations*, through special monthly and quarterly summaries appearing in the *Weekly Epidemiological Report*. A table giving cumulative data on the status of the campaign, by countries and other areas, was also published monthly in the *Boletín de la Oficina Sanitaria Panamericana*. A revised *Guide for the Reports on the Aedes aegypti Eradication Campaign in the Americas* was published in Spanish and in English. *A. aegypti* has now been officially declared eradicated in 13 countries and three other areas.

Working documents were prepared for the Latin American Seminar on Alcoholism sponsored by the National Health Service of Chile and the Organization. The available data on the countries of the Americas were collected and analyzed, including information on mortality from causes associated with alcoholism, and on the prevalence of alcoholism as determined by sample surveys and by estimations based on mortality from cirrhosis of the liver, hospitalization because of drinking, absenteeism from work, motor vehicle accidents caused by drivers under the influence of alcohol, and arrests for drunkenness.

Descriptive and financial data on the water supply systems of 42 cities of the Americas were tabulated for discussion at the Seminar on Water Rates. Additional activities relating to environmental sanitation included the analysis of data on garbage disposal in Latin American cities for the Technical Discussions at the XII Meeting of the Directing Council, and the preparation of estimates of both the need for and the cost of the construction of water supply systems in the countries of the Americas during the next 20 years. A summary was made of the answers to a questionnaire on the status of the fluoridation of water supplies in the Americas.

Education and Training

The major activities in education and training in health statistics continued to be carried out at the School of Public Health in Chile and at the Latin American Center for Classification of Diseases in Venezuela. In 1960 a special course on biological evaluation was given in Chile and courses on medical statistics were conducted in Argentina. Preliminary plans were made for training in hospital records and statistics.

Biostatistics

The School of Public Health of the University of Chile gave a course in vital and health statistics for the eighth

TABLE 4. REPORTED CASES OF QUARANTINABLE DISEASES IN THE AMERICAS, 1960

Country	Jungle yellow fever	Louse-borne relapsing fever	Plague	Louse-borne typhus	Small-pox
Total	48	4	258	662	4,754
Argentina	—	—	—	—	64
Bolivia	30	—	12	7	1
Brazil	1	—	28	—	2,278
Chile	—	—	—	10	—
Colombia	11	4	—	25	171
Ecuador	—	—	77	478	2,188
Mexico	—	—	—	104	—
Paraguay	—	—	—	—	35
Peru	4	—	139	38	—
Uruguay	—	—	—	—	17 ^a
United States	—	—	2	—	—
Venezuela	2	—	—	—	—

^a Excluding 2 imported cases.
—No cases reported.

time. Fellowships were awarded by the Organization to 16 students from the following countries: Argentina, 8; Bolivia, 2; Costa Rica, 1; Honduras, 1; Nicaragua, 1; Panama, 1; Paraguay, 1; and Peru, 1. On completing this six-month course some of the students did practical work in statistics. During the period 1953-1960, 283 statisticians from 20 countries have received training at the School; of these, 139 were from Chile and 144 from other countries (see Table 5).

Graduates of these courses are assisting in the rapid introduction of recommended international procedures as, for example, in the Province of Buenos Aires, Argentina.

In 1960 several of the students in the principal course expressed the wish to specialize in biostatistics, and the necessary instruction was provided. The faculty of the School reviewed the basic program of instruction in the field of biostatistics and decided to make the following changes:

(1) In 1961 the School will give for the second time a course leading to a degree in public health with specialization in biostatistics. The preparation of statisticians at this level will have a great influence on the development of statistics in the countries. The admission requirements for



Fig. 4. Students from Countries of the Americas Attending Courses on Vital and Health Statistics at the School of Public Health in Chile, 1953-1960.

TABLE 5. COUNTRY OF ORIGIN OF STUDENTS IN COURSES ON VITAL AND HEALTH STATISTICS AT THE SCHOOL OF PUBLIC HEALTH OF THE UNIVERSITY OF CHILE, 1953-1960

Country	Number
Total	283
Argentina	35
Bolivia	8
Brazil	2
Chile	139
Colombia	5
Costa Rica	7
Cuba	2
Dominican Republic	1
Ecuador	6
El Salvador	3
Guatemala	6
Haiti	3
Honduras	2
Mexico	13
Nicaragua	4
Panama	8
Paraguay	10
Peru	16
Uruguay	10
Venezuela	3

the course, which will be of 15 months' duration, will be a university degree in a profession calling for biological, medical, mathematical, or sociological preparation.

(2) The next course in vital and health statistics for statisticians at the intermediate level will be given in 1962.

(3) As soon as possible the School of Public Health will offer a course in hospital statistics and medical records for persons in charge of this work in the larger hospitals.

Biological Evaluation

The course on the application of statistical methods to biological evaluation was unique in sponsorship, type of instruction, and students. Laboratory experiments were carried out in the Department of Pharmacology of the School of Medicine of the University of Chile and in the Bacteriological Institute of the National Health Service. Lectures were given by members of the faculties of the Schools of Public Health and of Medicine, the Bacteriological Institute, and by a consultant. The course, which was intended for pharmacologists, microbiologists, biologists, and biostatisticians, was attended by 30 students, five of whom were from countries other than Chile.

Both quantitative and qualitative methods were demonstrated and the results illustrated in laboratory sessions. The basis and procedures for estimating the potency of

TABLE 6. FELLOWSHIPS* AWARDED FOR COURSES IN VITAL AND HEALTH STATISTICS, 1953-1960

Area	Latin American Center for Classification of Diseases, Venezuela					School of Public Health								
						University of Chile								University of Mexico 1956-1959
	1955	1956	1958	1959	1960	1953	1954	1955	1956	1957	1958	1959	1960	
Total	12	14	12	10	17	13	14	10	17	11	18	13	16	5
Argentina	—	—	1	—	—	2	2	1	3	3	6	6	8	—
Bolivia	—	—	—	—	—	—	1	1	—	1	1	—	2	—
Brazil	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Chile	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Colombia	1	—	1	5 ^a	—	1	—	—	1	—	1	1	—	—
Costa Rica	—	2	—	1	—	1	—	—	2	—	—	—	1	1
Cuba	1	1	—	—	—	1	—	1	—	—	—	—	—	1
Dominican Republic	1	—	—	—	—	—	1	—	—	—	—	—	—	—
Ecuador	1	1	—	—	—	1	—	—	1	—	—	—	—	—
El Salvador	1	—	—	—	—	—	1	—	—	—	—	—	—	—
Guatemala	2	2	1	1	—	1	—	1	1	—	1	—	—	1
Haiti	—	—	1	—	—	2	1	—	—	—	—	—	—	—
Honduras	—	—	—	1	—	—	—	—	—	—	—	1	1	1
Mexico	2	2	2	2	—	1	1	1	4	3	3	—	—	—
Nicaragua	1	2	1	—	—	1	—	—	1	1	—	—	1	—
Panama	2	2	2	—	—	—	—	—	1	—	1	—	1	1
Paraguay	—	—	1	—	—	—	3	1	1	2	1	—	1	—
Peru	—	1	2	—	—	1	1	1	1	1	4	3	1	—
Uruguay	—	—	—	—	—	1	1	2	1	—	—	2	—	—
Venezuela	—	—	—	—	—	—	1	1	—	—	—	—	—	—
British Territories	—	—	—	—	14	—	—	—	—	—	—	—	—	—
Netherlands Territories	—	—	—	—	3	—	—	—	—	—	—	—	—	—

* In addition, 12 fellowships were awarded for a short course in Jamaica in 1954 to participants from the Caribbean area.

^a Includes one staff member of the Organization assigned to Colombia.

agents affecting biological systems, for determining experimental design, and for defining the confidence limits for the estimated potency were studied.

Hospital Records and Statistics

Progress was made during the year in the planning of the project on hospital records and statistics. This project will be initiated in Argentina, where there is great interest in hospital administration and in hospital records and statistics. A medical record librarian will give advice on the development of demonstration centers and of training for personnel working on hospital records.

Consultant Services

In Argentina a statistical consultant gave courses for research personnel at the National Institute of Microbiology, and for the professors and research workers at

the Faculty of Medicine of the University of Buenos Aires.

In addition to giving instruction in Chile, a professor of biostatistics from the Columbia University School of Public Health gave advisory services in Argentina to a number of the departments at the School of Medicine in Mendoza and to the Institute of Microbiology in Buenos Aires, and in Brazil to the School of Public Health in São Paulo. He also gave lectures at the schools of medicine in Guayaquil, Ecuador, and in Cochabamba, Bolivia.

Table 6 shows the number of fellowships awarded for courses in health statistics from 1953 to 1960, and Table 7 the number of participants in seminars, conferences, and working groups on this subject in the same period.

The Organization provided the United States of America with the services of a short-term consultant to advise on studies of air pollution, field studies of ionizing radiation, cancer research, and occupational mortality data. Consultant services were also given by a member of the Headquarters staff to the State Health Department of Virginia.

TABLE 7. PARTICIPANTS* IN SEMINARS, CONFERENCES, AND WORKING GROUPS ON HEALTH STATISTICS AND RELATED SUBJECTS, 1953-1960

Area	Communica- ble disease	Classification of diseases	International Sanitary Regulations		Medical statistics		Medical certification	Course on biological evaluation
	Chile 1953	Venezuela 1957	Costa Rica 1955	Venezuela 1956	Brazil 1958	Mexico 1958	Venezuela 1959	Chile 1960
Total	25	24	15	17	13	2	11	4
Argentina	6	—	—	2	1	—	1	2
Bolivia	2	1	—	2	—	—	—	—
Brazil	5	1	—	3	6	—	3	1
Canada	—	1	—	—	—	—	—	—
Chile	—	3	—	2	1	—	1	—
Colombia	2	1	—	—	1	—	2	—
Costa Rica	—	2	—	—	—	—	—	—
Cuba	—	—	3	—	—	—	—	—
Dominican Republic	—	1	—	—	—	—	—	—
Ecuador	2	1	—	2	1	—	—	—
El Salvador	—	1	—	—	—	1	—	—
Guatemala	—	1	2	—	—	1	—	—
Haiti	—	1	1	—	—	—	—	—
Honduras	—	1	1	—	—	—	—	—
Mexico	—	2	3	—	—	—	1	1
Nicaragua	—	1	1	—	—	—	—	—
Panama	—	1	4	—	—	—	1	—
Paraguay	2	1	—	2	—	—	—	—
Peru	2	1	—	2	1	—	—	—
United States of America	—	1	—	—	—	—	1	—
Uruguay	2	2	—	2	2	—	1	—
Venezuela	2	—	—	—	—	—	—	—

* Financed by the Organization, except for participants of each host country.

Latin American Center for Classification of Diseases (Venezuela)

By a decision of the Ministry of Health and Welfare, the post of Director of the Latin American Center for Classification of Diseases was made a full-time post in September 1960. The staff of the Center gave a course in Kingston, Jamaica, on the classification of causes of death, the first to be given in English. Seventeen PAHO fellows from English- and Dutch-speaking territories attended the course, which was prepared and planned by the Zone statistical consultant.

One of the results of the first course on the classification of diseases given in Argentina in 1959 was the introduction in October 1960 of the internationally recommended form for the medical certificate of death in the Province of Buenos Aires. As it was considered advisable to give additional instruction on classification to those responsible for coding, a second course was given in Buenos Aires under the auspices of the Ministry of Welfare and Public Health and was attended by 26 students from Argentina and by three from Paraguay. Two hundred and forty-two persons

from 17 countries and from the British and Netherlands territories have received training in 12 courses on classification of causes of death (see Table 8).

Work at the Center included the adaptation and translation into Spanish of the *International Classification of Diseases Adapted for Indexing of Hospital Records and Operation Classification*, which was published by the USPHS in 1959. This adaptation, which will be published in 1961, maintains the categories of the WHO *International Classification*. The Center has also begun work on the Eighth Revision of the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*.

Activities in the Countries

In addition to the collection and distribution of data and the education and training program, the Organization continued to provide consultant services to assist Member Governments in the improvement of their statistical services. The consultants stationed in Buenos Aires,

TABLE 8. COUNTRY OF ORIGIN OF STUDENTS IN COURSES ON CLASSIFICATION OF CAUSES OF DEATH, 1954-1960

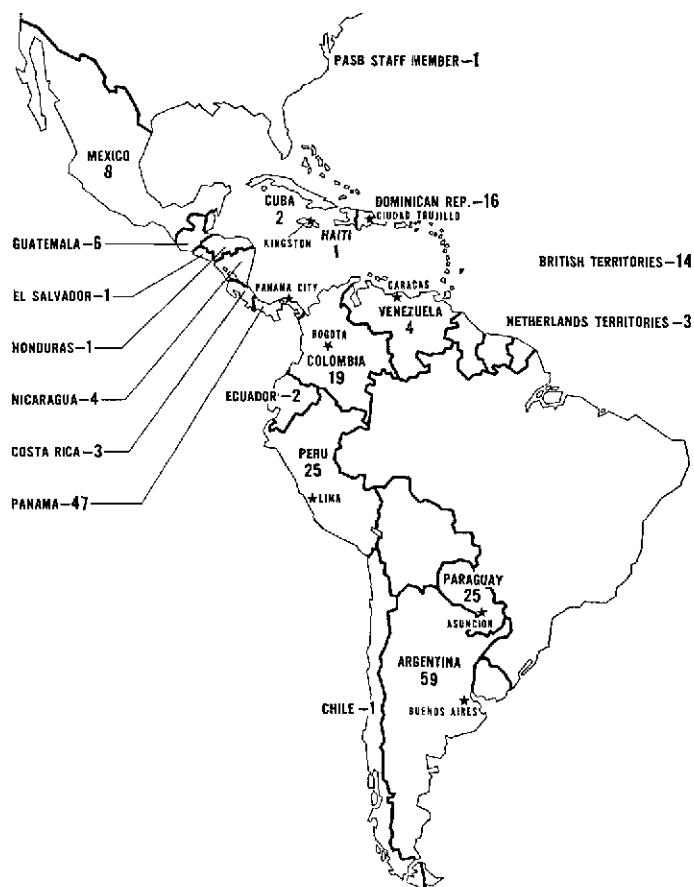
Country	Number
Total	242
Argentina*	59
Chile	1
Colombia*	19
Costa Rica	3
Cuba	2
Dominican Republic*	16
Ecuador	2
El Salvador	1
Guatemala	6
Haiti	1
Honduras	1
Mexico	8
Nicaragua	4
Panama*	47
Paraguay*	25
Peru*	25
Venezuela	4
British territories*	14
Netherlands territories	3
PASB staff member	1

* Courses held in these countries.

Guatemala City, and Kingston, Jamaica, continued their activities throughout the year. In July a fourth consultant was appointed to serve in Bolivia, Colombia, Ecuador, and Peru.

Recent developments in several countries illustrate the progress being made in statistics.

The speed with which a vital statistics program was developed in the Province of Buenos Aires, Argentina, is worthy of mention as an example of what can be accomplished through the coordination of several agencies and the support of a medical society. In November 1959 the Medical Society requested the aid of the Ministry of Public Health for the adoption of the internationally recommended form of medical certificate of cause of death and for the improvement of the system of vital and health statistics. In December a commission was formed to organize the program and the following March a decree established the coordination of the vital statistics activities carried on in the Civil Registration Office, the Statistical Office, and the Office of Vital and Health Statistics, within the Ministries of Government, Economy, and Public Health, respectively. A coordinator was appointed to take charge of this program. In July the Committee of Vital and Health Statistics was inaugurated, and by October 1960 the experimental use of new certificates of birth, death, fetal death, and marriage had begun. This work in the Province



* PLACES WHERE COURSES WERE HELD

Fig. 5. Students from Countries of the Americas Attending Courses on International Classification of Diseases, 1954-1960.

of Buenos Aires has led to progress in other provinces and has proved to be a valuable demonstration project.

The Ministry of the Interior organized the first National Congress of Directors of Civil Registration Offices, the main purposes of which were to draft a law to bring standards and procedures into uniformity and to provide a general exchange of information. Progress was reported at the national level. Several meetings of the National Committee of Vital and Health Statistics were held, as was a Seminar on the Notification of Communicable Diseases.

In Colombia plans were made for the establishment of a new section of statistics in the Office of Planning, Coordination, and Evaluation of the Ministry of Public Health and for a course in biostatistics at the School of Public Health for students who have finished three years of studies at the Faculty of Mathematics of Bogotá.

A Division of Biostatistics was organized in the Ministry of Public Health and Welfare of Peru and staffed with well-trained personnel.



Round-table discussion held in connection with the integrated program of vital statistics of the Province of Buenos Aires, Argentina.

In Costa Rica the statistical activities of various offices of the Department of Biostatistics were reorganized and a procedure for tabulating the statistical data of health units was developed. In addition, statistical reports on the malaria eradication campaign were prepared monthly in the Department of Biostatistics.

Periodic reporting systems for health centers were established and put into operation in Honduras and Nicaragua.

In Jamaica plans are under way for field studies on infant mortality, encompassing the economic, social, environmental and health factors contributing to its substantial increase in recent years. Efforts are being made to improve hospital statistics, and modified record forms will be used by hospitals when reporting to the Ministry of Health.

International Sanitary Regulations

During the year efforts were continued to obtain telegraphic reports from all areas newly infected with a quarantinable disease, as required by the *International Sanitary Regulations*. There was some improvement in the promptness of reporting, but in several instances reports of cases of a quarantinable disease were first obtained from a newspaper or other unofficial media. Inquiries had to be sent to the health administration involved; however, most of these unofficial reports proved to be erroneous.

The incomplete reporting of smallpox cases in Brazil, where reporting is limited to the Federal District and state capitals, continues to be the exception in the Americas. The only reported instance of the spread of a quarantinable disease by means of international traffic was an outbreak

of smallpox in a border department of Uruguay caused by a case imported from Brazil.

Difficulties encountered by countries in seeking to determine the presence of the virus of yellow fever, which is of the jungle type in the Americas, hinder the prompt reporting of this disease.

Most of the plague cases reported in 1960 were due to infected wild rodents and, although 258 human cases were reported, there were no cases of the disease in towns or seacoast areas.

The Bureau assisted in the application of the *International Sanitary Regulations* by bringing discrepancies to the attention of health administrations and by clarifying problems that arose between countries in the Americas or involved countries in other parts of the world.

Other Activities

The first meeting of the Organization's Advisory Committee on Statistics was held in June in Washington, D. C., for the purposes of analyzing current policy, objectives, and accomplishments, and of suggesting new methods by which the commitments of the Organization could be fulfilled. Seven outstanding statisticians and representatives from the United Nations, the Inter-American Statistical Institute, and WHO participated. The Committee recommended the extension of education and training programs in statistics at the undergraduate as well as at the graduate level, instruction in statistics in schools of public health and medicine, coordination of the reports of international agencies, promotion of statistical and epidemiological research, and a program of Regional activities in prepara-

tion for the Eighth Revision of the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*. A full report of this meeting has been issued in English and Spanish (Miscellaneous Publication No. 61), and the Spanish text was disseminated also through the *Boletín*. A second meeting of the Committee is scheduled for 1962 and will be devoted to an evaluation of the work accomplished, particularly that of new programs.

The first concrete result of the meeting was the decision by the Government of Venezuela to make financial provision for a full-time Director of the Latin American Center for Classification of Diseases. A second and indirect result was the successful application by the São Paulo School of Public Health to NIH for funds to finance a six-week course

in medical statistics for potential professors. The Committee's recommendation for Regional activity in developing proposals for the 1965 Revision of the *Manual* is being implemented and plans were made for the first meeting, early in 1961, of a Regional Advisory Committee on International Classification of Diseases to develop the Regional program.

As a result of the Committee's recommendation that more attention be given to statistical and epidemiological research in Latin America, especially in the field of cardiovascular disease, preliminary plans have been made for, and funds have been sought to finance, the development of epidemiological studies of cancer and of cardiovascular and other chronic diseases in 1961.

Public Health Laboratories

Despite the recent progress made in the development of public health laboratory services in Latin America, there are still many laboratories that have not yet attained a degree of efficiency that permits them adequately to fulfill their functions in diagnosis, public health research, manufacture of low-priced and effective biological products, control of foods and drugs, and in the evaluation of public health programs. During 1960, therefore, the Organization continued to give special attention to public health laboratories, since the efficiency of their services is a prerequisite for the prevention, control and, when possible, eradication of communicable diseases. Effective laboratory services are also essential for the evaluation of communicable disease control programs. Furthermore, the laboratories have basic responsibilities in environmental health, food and drug control, and in support of non-communicable disease programs.

The role of the laboratory in evaluation was demonstrated during the smallpox eradication campaign in Colombia, where the Organization has fostered the systematic use of laboratory diagnoses to obtain accurate information on the extent and importance of the geographical areas not yet protected by immunization. Since the objective of the national program is the total suppression of smallpox, an accurate etiological diagnosis is essential in the final stages of the campaign; otherwise, cases clinically similar to smallpox, but caused by other pathogenic agents, will be erroneously recorded. Likewise, in Haiti, laboratory analyses established that most of the ulcerous lesions found in the late stages of the yaws eradica-

tion campaign were not caused by *Treponema pertenue* but by the various nonspecific microbial agents that are found in tropical ulcers.

Recent developments in laboratory services in Argentina, British Guiana, Curaçao, Haiti, and Paraguay also deserve mention.

In Argentina a plan was developed to standardize the methods for the serological diagnosis of syphilis in use in the provincial laboratories, and, as part of the integrated public health programs, the expansion of the local laboratories in the Province of El Chaco was promoted.

A consultant of the Organization gave advice to the public health laboratory in Georgetown, British Guiana, on the enlargement of the building and the selection of equipment, as well as on plans for personnel training, definition of the new activities planned for the laboratory, and development of local laboratories. The consultant also visited the public health laboratory in Curaçao, Netherlands Antilles, and made recommendations for extending and improving it.

The assignment of a laboratory consultant to the public health services of Haiti resulted in greater technical and administrative efficiency, as well as in more active participation by the laboratory in all public health activities, especially in the yaws and malaria eradication campaigns and in the control of venereal diseases.

In Paraguay, seven local laboratories were established and organized in as many health centers, and their personnel were trained in special courses at the Central Laboratory in Asunción.

Preparation and Assay of Biological Products

The Member Countries have been showing increased interest in the assay of immunizing agents. During the year, 35 samples of vaccines and toxoids produced in five countries were submitted to reference laboratories for safety and potency tests. More frequent utilization of such services would undoubtedly result in the use of better control methods by the public health laboratories and, as a consequence, in the improvement of the quality of biological products in every country.

National laboratories in several Latin American countries are endeavoring to develop the local production of diphtheria, tetanus, and staphylococcus toxoids; smallpox, BCG, rabies, typhoid, and pertussis vaccines; certain vaccines for veterinary use, such as those against brucellosis, rabies, and anthrax; hyperimmune rabies serum; and various diagnostic antigens. Upon request, the Organization supplied strains, reference standards, and other necessary materials for production and testing.

Technical advisory services were given to Argentina, Ecuador, and Mexico on methods for increasing the production or improving the quality of vaccines, toxoids, and antigens. A plan was drawn up for two consultants specialized in the production and administration of pertussis vaccine to visit the National Public Health Laboratory of Mexico early in 1961; this visit will be the starting point for the development of a large-scale prevention program.

A survey was made in the countries of Central America

and in Panama to ascertain their needs for immunizing agents, as well as the availability of trained personnel, laboratory buildings, and equipment. The data compiled will be analyzed in order to determine the best means of securing in the near future an adequate supply of biological substances for use in man and in animals. The establishment of a central laboratory, supported by all the interested countries and devoted to the production and assay of biologicals and the development of better methods, may be the best solution.

Supply of Biological Reagents and of Laboratory Animals

During 1960, laboratories in 15 countries were supplied with 429 biological reagents (microbial or viral strains, typing sera, various antigens, biological standards, etc.); standardized antigens (tuberculin, histoplasmin, coccidioidin) were furnished to health administrations for use in epidemiological studies; and technical advice was given on special techniques, such as the performance of diagnostic tests or for the manufacture of antigens.

Laboratory animals (mice, hamsters, guinea pigs) were provided, upon request, for the establishment of new breeding colonies in national laboratories, and technical advice was given on ways to improve the quality and increase the productivity of the colonies. The aim of this assistance is to assure an adequate supply of the most delicate biological



The Public Health Laboratory at Tlalpan, Mexico, with library at left and office at right.

reagent—the experimental animal. Each strain of animal used in diagnostic and control tests, or in research work, must be genetically homogeneous, and each animal must be free from communicable diseases and nutritional deficiencies. Feeding and breeding methods must meet the standards of hygiene and economy that will ensure high productivity and superior quality. If these requisites are not met, the colonies become costly and inefficient, and few valid conclusions can be reached from tests made with the animals.

The National Public Health Institute of Peru and the National Public Health Laboratory of Mexico now have animal colonies established in accordance with the standards set by the Organization's consultants.

Training of Laboratory Technicians

Well-trained technicians are essential if laboratories are to fulfill their functions satisfactorily. They must be capable of carrying out, under the supervision of a qualified pathologist, a wide variety of procedures. Automatic execution of oral or written instructions is not enough; they must have an intelligent understanding of the requisites of accurate laboratory tests and possess a basic knowledge of the principles underlying such tests.

PAHO/WHO has therefore been collaborating in the organization of training courses for technicians in the national laboratories. In this regard, special mention should be made of the course for laboratory technicians held for the first time in 1960 at the Adolfo Lutz Institute, in São Paulo, Brazil. The course, planned and carried out with the participation of a consultant of the Organization, was given to 20 members of the state health services who, after attaining technical proficiency, were assigned to a hospital or public health laboratory for practical experience.

Virological Laboratories

The public health laboratories of Argentina, Brazil, Colombia, Ecuador, Mexico, and Venezuela have shown

much interest in the establishment, expansion, or reorganization of units for the study of filtrable viruses. The implementation of these projects has been hampered by a shortage of international consultants. The Organization has attempted to overcome this difficulty by having its permanent staff give technical assistance and by granting fellowships for training in virology in suitable laboratories.

At the request of the Government of Venezuela, a PAHO/WHO consultant prepared a plan for the organization of a virological diagnostic laboratory for the National Institute of Hygiene, Caracas. Mexico also received similar services for the preliminary planning of a section to study arthropod-borne viruses at its National Institute of Public Health. At the recently reorganized virological laboratory of the Oswaldo Cruz Institute, in Brazil, a virologist specialized in tissue-cultures has been giving advice in the training of personnel, selection of equipment and materials, and provision of supply of strains and reagents. Part of the equipment for the laboratory was provided by PAHO/WHO.

Other Activities

During the year, information and advice were given on such diverse subjects as the classification of pharmaceutical preparations, characteristics of standardized antigens and methods of using them in delayed hypersensitivity skin tests, preservation of the quality and potency of certain drugs, and use of the international reference pyrogen preparation.

Data was obtained for three WHO surveys, on the methodology in antibiotics sensitivity testing, on the present status of laboratory services, and on laboratory design, equipment, and methods.

The Organization obtained the services of an international consultant on staphylococcal immunology to collaborate with scientists of the USPHS Communicable Disease Center (CDC) in establishing a system of serological typing of this genus of bacteria.

Nursing

Efforts to improve and expand nursing services in all countries continued during the year, special attention being paid to the creation of supervisory and administrative posts for graduate nurses, the reorganization of nursing services at the national level, and in-service training for auxiliary nurses. Perhaps the most significant of these

activities was the creation of supervisory posts, since it reflects an increased awareness of the need for regular and planned supervision of auxiliary nurses, especially those working in rural areas.

Assistance was again given to ministries of health in planning the extension of nursing services, particularly to



Third-year student of the National School of Nurses, Guatemala City, Guatemala, demonstrating how to bathe a baby to a group of nursing auxiliaries.

rural areas, where activities basic to public health nursing, such as home-visiting, assistance to doctors in clinic sessions, follow-up of communicable disease control, work with the traditional birth attendant, and organization of mothers' clubs, were introduced in some countries for the first time in 1960.



Staff of the Rural Health Center of La Chorrera, Panama, give expectant mothers prenatal attention and instructions in proper home care of infants. The Center has an 8-bed maternity annex.

In an effort to provide a basis for long-range plans designed to raise the number and kind of nursing personnel to the level necessary to supply adequate services in the countries, the Organization prepared suggested ratios of nursing personnel to population. Each country will have to determine whether these ratios are adequate to their needs and what steps are to be taken to recruit and train the necessary nursing personnel. It is evident that, in doing so, the pace at which health services can be extended and the health problems to be solved will have to be taken into account.

Although for the past 10 years emphasis has been placed on the training of more nurses of all types, countries continue to report shortages of well-trained graduate nurses. In addition, they are becoming more concerned about the quality of nursing care. This concern is reflected in surveys to ascertain what proportion of a nurse's duty hours is devoted to nursing and what proportion is spent in duties that could be carried out just as well by less qualified staff. One study showed that 50 per cent of a nurse's duty hours was taken up with activities other than nursing, and approximately another 25 per cent to giving injections to a single category of patient. Thus, because graduate nurses were devoting their time to one problem only—a problem that could have been handled in a less costly manner—other health services in that particular country suffered.

As more graduate nurses are given administrative responsibility for planning nursing services, they will be in a position to suggest, in agreement with health officers, well-thought-out solutions of staffing and service problems that need not necessarily entail additional expenditure of funds.

In developing public health nursing services in cooperation with national health authorities, the Organization has placed emphasis on the expansion of nursing services and their extension to maternal and child health, communicable disease control, health education, environmental sanitation, and nutrition programs.

During 1960, 20 public health nurses served as consultants in 15 countries. Sixteen of these nurses were assigned to integrated health services projects; two, to public health nursing projects; and two, to tuberculosis control programs.

Considerable thought is also being given to the improvement of the nursing care given to newly discharged hospital patients, especially mothers with first babies; children convalescing from a nutritional deficiency or communicable disease; and hospitalized patients, regardless of their age and their disease.

In an effort to attack the first problem, a number of countries have established a system whereby patients discharged from hospitals are referred to the public health service for home-visiting. This system has an additional

advantage, since the families of discharged patients have been found to be more receptive to health instruction given by visiting nurses. These home-visits should therefore bring improvement in the control of communicable diseases, nutrition, and child health, in addition to assuring continuity of medical care for the former hospital patient.

To deal with the third problem—the improvement of nursing services in hospitals—plans are under way to establish an adequate ratio of nursing personnel to hospital beds and to determine the type of in-service training programs necessary to improve the performance of the present hospital personnel.

As many countries in the Hemisphere still need advisory services in public health nursing, the Organization has prepared plans for two regional seminars, one of which is at present scheduled to be held in 1961. Nurses in key posts in public health services and hospitals, national health authorities, and PAHO/WHO advisers will discuss ways and means of obtaining well-trained nursing personnel and good-quality nursing service.

Health Education

Health education is a vital component of every public health program. If people are to derive maximum benefit from the health services available, they must not only accept these services but understand why they should do so. Health education is no longer a matter of simply conveying information by means of audio-visual and other communications media. It is now understood to be a process in which, with the help of the staff of the health services and of other interested agencies, individuals and community groups take an active part in identifying their own health problems and in working toward practical solutions.

There is also an increasing awareness of the need not merely to transplant methods and schemes that have been used in other countries or areas but to develop education programs that are adjusted to the social and economic situation of the group concerned. Thus, more attention is now being given to preliminary studies of the cultural characteristics of the population to be served. These studies make it possible to plan public health services that take into account the social and economic possibilities for improving the health of a given community.

It is now generally accepted that all health workers have opportunities for health education and should be trained to take full advantage of them, and that many other persons who work with community groups have similar opportu-

nities. This extension of the responsibility for health education has led to the incorporation of health education training into courses of study for agricultural extension agents, school teachers, social workers, and others who can influence the behavior of the people they serve. It has also brought about changes in the functions of the health education specialist. The present trend is to use this specialist to assist with the planning and conduct of health education training for those who are responsible for the direct educational services described above.

With this in mind, 11 countries of the Americas are presently engaged in long-range programs for the selection, training, placement, and supervision of health education specialists. The Organization has also assisted a number of these programs by awarding fellowships for graduate studies abroad, planning various aspects of training programs, and providing consultant services. These programs have made it possible to improve the quantity and quality of health education services available at the national, state, and local levels. For example, specialists with a Master in Public Health degree in health education are now chiefs of national health education services in nine countries; others are in charge of special health programs in four countries; and still others occupy key posts at the state, regional, or local level in 13 countries. In Guatemala, the chief of the

national health education service is also Director *ad honorem* of the national public health training school.

The Organization is broadening its health education activities; for example, as part of the integrated health services projects, training in health education has been given to physicians, dentists, nurses, nursing auxiliaries, sanitarians, sanitation auxiliaries, midwives, schoolteachers, and social workers.

In 1960 there was an increase in both the number of consultants and the nature of the services they rendered. The consultant assigned to the International Malaria Eradication Training Center in Jamaica also served as a member of the PAHO/WHO advisory team working with the malaria eradication program of that country.

The consultant appointed to the Zone II Office continued to furnish advisory services to Cuba, the Dominican Republic, Haiti, and Mexico, in particular on the long-term planning of health education services. Assistance was given in the teaching of health education in the School of Public Health in Mexico City and in short training courses for the national and local staff of the leprosy and tuberculosis control campaigns of that country. The consultant also participated in a survey of health education needs and resources in some of the nine states taking part in the integrated health services program which Mexico is conducting with cooperation of the Organization. He took part in planning and carrying out a one-week round table discussion on the teaching of health education in schools of medicine, and worked with staff of the National Children's Hospital on a research project to determine the effectiveness of health education in programs for the control of diarrheas in infants.

Advisory services were also given to the international staff of the Latin American Regional Fundamental Education Training Center (CREFAL), and in setting up standards for the production of health education materials by the Latin American Educational Film Institute (ILCE), a joint project of the Government of Mexico and UNESCO. The consultant assisted in planning and carrying out health education training for sanitarians and nursing auxiliaries in Cuba, the Dominican Republic, and Haiti; in the develop-

ment of plans for training health education specialists for Cuba and Mexico; and in the health education efforts related to malaria eradication in all countries of the Zone.

The health education consultant assigned to the PAHO/WHO advisory team of the integrated health services project for the state of Guanajuato, Mexico, devoted a major part of his time to working with local staff in securing community participation in various project activities, such as environmental sanitation, maternal and child health, safe water, and school health. In connection with the last mentioned, training programs were planned for rural schoolteachers in the demonstration area, in order to coordinate school and community education as related to health. Special attention was given to the development of suitable health education materials.

Advisory services in health education were initiated in Cuba in the latter part of 1960, when a consultant was assigned to the integrated health services program of that country. Plans are already under way for the selection and training of candidates for health education posts. Their training within the country will be carried out in cooperation with the Carlos Finlay Institute, and candidates successfully completing these courses will be eligible for graduate studies abroad.

Consultant services were provided in Costa Rica for the analysis of current health education needs, resources, and practices. Selected departments of the Ministry of Public Health, agricultural extension services, public schools, and local health centers were surveyed and, as a result, a plan was developed with the Government for the further training of the staff and the expansion of the health education services.

The staff of the Washington Office provided consultant services in health education directly to the health authorities of Argentina, Bolivia, Brazil, Colombia, Ecuador, Jamaica, Uruguay, and Venezuela. These services were rendered in response to requests for assistance in various aspects of health education planning such as nutrition education, potable water supplies, malaria eradication, staff training, and teacher training for school health education.

DISEASE CONTROL AND ERADICATION

Malaria Eradication

The program of malaria eradication in the Americas developed during 1960 in accordance with the general plans laid down, with some operating modifications and improvements based upon the experience gained during the last three and one half years. Satisfactory progress is being achieved in Argentina, Bolivia, Colombia, Mexico, Peru, and Venezuela; in a number of countries in Central America; and in some of the Caribbean islands.

The Government of Haiti requested the resumption of malaria eradication activities, which had been halted for nearly two years for financial reasons; accordingly, an agreement was reached for the reactivation of the campaign early in 1961. Technical assistance was given to Cuba, where the final stage of the preparatory phase is being reached. The campaigns in these two countries complete the program in the Hemisphere.

Considerable portions of Mexico and Jamaica were shifted during the year into the consolidation phase.

Resistance of the vector to both dieldrin and DDT presented problems only in parts of four Central American countries, so it is not yet clear how long the spraying operations may have to continue beyond the original schedule in that area. In most of the other areas, good progress has been made since the change from dieldrin to DDT. Administrative and financial difficulties hampered the development of the campaigns in Brazil, Dominican Republic, Panama, and Paraguay.

Figure 6 shows the status of the continental campaign as of 31 December 1960.

Entomological Problems

Insecticide resistance was further defined by expanded susceptibility testing. During the year, 584 tests of dieldrin or DDT, or of both, were made in 372 localities. In 41 of these localities, tests were made on more than one species of anophelines. The results obtained in areas that were being retested were almost without exception similar to those of previous years. Areas of resistance remained resistant to approximately the same degree; areas formerly showing susceptibility continued to show susceptibility, except for one locality in the State of Puebla, Mexico, which had shown susceptibility to dieldrin in 1958 but

showed moderate (30 per cent) resistance to that insecticide in 1960.

Evidence of resistance to insecticides discovered for the first time in 1960 is shown in Table 9 by species and by country.

It will be seen that there were only six instances of resistance to dieldrin; in four of these it was very slight and in the other two, only minor species were involved. In no instance do these findings necessitate a change in the present program. In the one new instance of DDT resistance the degree is small, the species is a minor one in the area, and the program is going well.

It may be said that the resistance problem is now rather clearly defined, and in view of the almost universal use of DDT, resistance presents difficulties only in large sections of El Salvador and Nicaragua and in smaller areas of Honduras and Guatemala. There is no evidence as yet that house-spraying alone has brought about resistance or increased it.

Studies made in El Salvador by the PAHO Insecticide Testing Team showed that: (a) DDT-resistant *A. albimanus* have only a moderately increased tolerance for the insecticide, five or six times that of susceptible ones, whereas their resistance to dieldrin is in the order of 100 to 200 times. (b) Fresh deposits of DDT—two grams per square meter—are highly lethal for resistant mosquitoes and remain so for several months on most wall surfaces. PAHO insecticide testing teams are to make further studies in this connection; but, according to present evidence, DDT can still be usefully employed against the resistant strains until superior insecticides are discovered.

Field research on mosquito irritability in the presence of DDT was completed in Panama, and laboratory studies were made in Mexico. The influence of mosquito irritability on the kill obtained from DDT sprayings needs to be investigated in carefully controlled studies, some of which are planned for 1961.

Epidemiological Problems

As various countries are reaching the point where very few new cases of malaria occur, the discovery and careful epidemiological investigation of new cases become increasingly important.

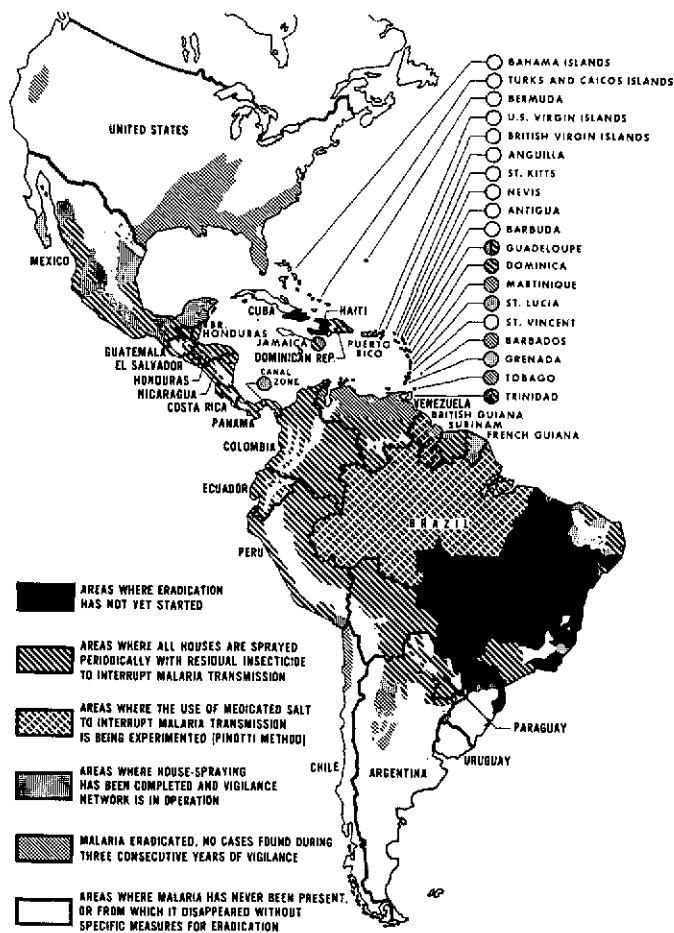


Fig. 6. Malaria Eradication in the Americas, December 1960.

As for the discovery of new cases, emphasis continued to be placed on the building-up of networks of notification posts, particularly of volunteer collaborators. In countries where both active and passive search for cases was carried on, the superior productivity of a well-supervised network of notification posts was impressive. Disappointing results occurred, however, where shortage of funds curtailed the

supervisory staff. A good example of the results obtained by active search for cases appears in the Appendix under the malaria eradication report for Brazil (see page 113).

In the epidemiological investigation of cases and localized outbreaks, the quantity and quality of the work done usually left much room for improvement. Country advisers were requested to experiment with different investigative methods. Their experience is being used as a guide in subsequent investigations by both national and international staff.

Specific Problems

Migration of Populations

One of the problems discovered is the one posed by seasonal migration of agricultural workers. Internal migration was the source of an outbreak of malaria in October 1960 at Finca Mocá, Guatemala; the same problem was encountered in southern Costa Rica. Both internal and international migration present problems in western Venezuela and in a number of other countries. In an effort to solve this problem, six meetings between countries having a common border have been held.

New Construction

A special study showed that continuing transmission in Costa Rica was associated with the building of a significant number of houses between spraying cycles. Similar new construction was noted in agricultural reclamation projects in other countries, Guatemala and Honduras among them. This problem was successfully attacked by permanently stationing sprayers in areas of rapid population growth.

Special Problems

One of the most serious developments during 1960 was the appearance in western Venezuela and in the Magdalena

TABLE 9. INSECTICIDE RESISTANCE DISCOVERED IN 1960

Country	Department	Species	Resistance		Month	Investigator
			Per cent	Number tested		
DIELDRIN RESISTANCE						
Colombia	Córdoba	<i>triannulatus</i>	55	150	June	Ferrer <i>et al.</i>
	Intendencia del Meta	<i>darlingi</i>	2	100	June	" " "
Costa Rica	Puntarenas	<i>albimanus</i>	18	40	October	Vargas and Pacheco
Ecuador	Guayas	<i>punctimacula</i>	7	100	February	Orellana and Moreno
	Los Ríos	<i>pseudopunctipennis</i>	16	200	December	Arellano
Trinidad	Piarco	<i>neomaculipalpus</i>	65	99	September	Omardeen
DDT RESISTANCE						
Honduras	Atlántida	<i>punctimacula</i>	18	65	October	Turcio and Ruiz

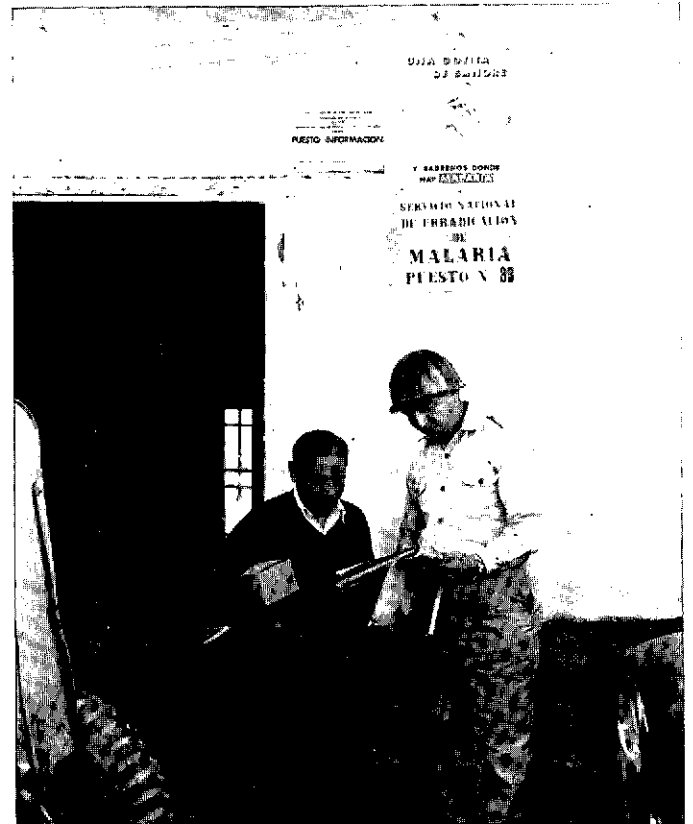


An entomologist of Panama's National Malaria Eradication Service and his assistant put up a tent-trap that will be left standing overnight with a lamp inside. The mosquitoes attracted by the light will be collected early next morning for susceptibility studies.

Valley in Colombia of strains of *P. falciparum* which do not respond well to chloroquine. Some *falciparum* malaria patients were relieved of symptoms with the usual 1.5 grams of chloroquine, but repeatedly relapsed within a few days or weeks; others developed clinical attacks shortly after the usual mass treatment dose of 450 or 600 mgs.; and in an occasional case relief from clinical symptoms was not obtained by the administration of 1.5 grams of the drug. The Magdalena Valley strain has shown little or no response to standard doses of chloroquine. It should be noted that the resistance of this strain is relative rather than absolute and that it has not appeared very widely either in Venezuela or in Colombia.

Simian Malaria and Malaria Eradication

The significance of the new finding, also made during the year, of the transmissibility of one strain of simian malaria to man through anophelines has still to be ascertained. *P. cynomolgi*, a parasite from rhesus monkeys, had been thought to be nonpathogenic in man until April 1960, when accidental infections occurred in laboratory personnel working with a Malayan substrain, *P. cynomolgi bastianelli*. Subsequently, transmission from man-to-man and from man-to-monkey has been accomplished by both blood inoculation and mosquito bites. Intensive studies are going on in Malaya to determine the prevalence of cross-infective strains, but, as yet, no evidence has been found that this or any other parasite of lower monkeys is a



A medical officer of Bolivia's National Malaria Eradication Service visits one of the campaign's 1,462 notification posts.

TABLE 10. STATUS OF MALARIA ERADICATION IN THE AMERICAS, 1960. COUNTRIES WITH PAHO PROJECTS

Project	Malarious area (km ²)	Population exposed to risk of malaria (in thousands)	Number of sprayings		Evaluation operations				PASB personnel at end 1960					Participation by		
			1959	1960	1959		1960		Physicians	Engineers	Entomologists	Sanitarians	Others	UNI-CEF	ICA	
					Slides examined	Positive (per cent)	Slides Examined	Positive (per cent)								
Argentina—8	246,800	2,134	57,995	173,008	21,868	5.0	96,629	2.1	—	—	—	—	—	—	×	—
Bolivia—4	842,018	908	286,827	271,032 ^a	83,762	2.4	86,785	1.0	2	1	—	4	—	—	×	×
Brazil—24 (Federal)	7,222,792	33,719	...	810,307	...	...	b	b	—	1	—	—	—	—	—	×
Brazil—41 (São Paulo)	228,058															
Colombia—5	1,026,433	9,000	2,394,957	2,355,434	329,288	1.3	480,001 ^a	1.6	2	1	1	6	1	—	×	×
Costa Rica—2	31,526	382	112,162	131,942	52,536	3.6	67,643	3.0	1	—	—	2	—	—	×	—
Cuba—5	36,602	2,105	c	c	c	c	c	c	1	—	—	1	—	—	—	—
Dominican Republic—2	39,219	2,446	393,896	309,716	28,721	13.0	20,311	20.2	1	1	—	3	—	—	×	—
Ecuador—14	153,489	2,405	440,477	338,685 ^a	98,977	5.9	119,636	7.4	1	1	—	3	—	—	×	×
El Salvador—2	19,300	1,900	556,360	567,263	71,295	24.6	75,382	13.3	1	1	—	2	2	—	×	—
Guatemala—1	80,380	1,610	631,998	697,557	108,048	7.3	129,741	2.6	1	1	—	3	—	—	×	×
Haiti—4	19,098	2,833	c	c	c	c	c	c	1	—	—	2	—	—	×	×
Honduras—1	87,390	1,359	236,963	496,758	39,947	10.7	109,677	5.0	1	1	—	2	—	—	×	×
Mexico—53	978,185	17,994	6,560,183	5,943,373	821,599	0.4	1,212,770	0.3	1	2	1	1	1	—	×	—
Nicaragua—1	127,199	1,411	424,575	469,554	38,966	4.8	74,119	10.2	1	1	—	2	1	—	×	×
Panama—2	68,497	969	142,848	115,948	78,661	6.4	77,099	5.8	1	1	—	2	1	—	×	—
Paraguay—1	406,752	1,768	157,723	151,782 ^d	11,379	5.6	47,043	2.5	1	1	—	2	—	—	×	×
Peru—5	943,228	3,131	619,944 ^e	f	149,690	3.3	349,480	1.1	1	1	—	5	—	—	×	×
British Guiana—5	209,790	65	g	g	g	g	g	g	1	—	—	—	—	—	×	—
British Honduras—1	22,965	90	22,526	31,008	11,307	9.0	13,307	1.5	1	—	—	1	—	—	×	—
Dominica (WI—2)	152	10	3,441	3,823	2,801	1.6	6,151	0.1	—	—	—	—	—	—	×	—
French Guiana—2	85,000	32	...	...	...	...	...	...	—	—	—	—	—	—	—	—
Grenada (WI—2)	185	36	15,862	g	5,695	0.04	8,233	0.0	—	—	—	1	—	—	×	—
Guadeloupe—1	1,067	197	...	...	...	...	...	...	—	—	—	—	—	—	—	—
Jamaica—2	10,050	1,017	392,457	301,545 ^a	39,726	0.9	184,534	0.1	1	1	—	2	1	—	×	×
St. Lucia (WI—2)	381	72	15,347	h	13,268	0.01	13,181	0.0	—	—	—	1	—	—	×	—
Surinam—1	143,000	202	92,468	72,444	46,687	6.2	45,396	2.2	1	—	—	2	—	—	×	—
Trinidad & Tobago—3	4,823	805	149,398	241,683	101,400	0.1	108,993	0.01	—	—	—	—	—	—	×	—
PASB personnel of AMRO projects serving more than one country.									6	2	7	2	10			

... No data.

— None.

^a Eleven months.

^b Data collection procedures have only recently been finalized and information for 1960 will be available shortly.

^c Program in preparatory phase.

^d Ten months.

^e Total sprayings on the eastern and western slopes and in the fluvial area to October 1960; spraying began in different areas between mid-1959 and early 1960.

^f Information on spraying not available; the main weapon of attack in the interior is medicated salt.

^g Entered consolidation phase in 1960.

^h Entered consolidation phase in October 1959.

serious threat to eradication. There is at present no simian malaria in the Western Hemisphere that is known to be transmissible to man.

Research Projects

In an effort to find answers to some questions still pending, the PAHO Insecticide Testing Team was expanded.

Its activities now include the testing of new insecticides as substitutes for DDT and the study of optimum dosages and cycles of DDT. El Salvador was selected as the headquarters of the Team and the main testing area, because both DDT-susceptible and DDT-resistant vector mosquitoes are found there. A second unit to test other vectors under different conditions was established in Bolivia.

The El Salvador unit completed studies of the char-

acteristics of DDT resistance and continued studies on the duration of the effect of DDT deposits on various types of walls. The post of Team leader was filled only in September. Plans for a new laboratory and new field study areas were drawn up.

The Bolivia unit of the Team began work in Cochabamba in July, but soon found it necessary to move its operations to Santa Cruz, closer to year-round sources of the main vector mosquitoes. An insectary and a laboratory were set up in October and local aides were recruited. The first attempt to colonize *A. darlingi* failed, apparently because the city water was toxic to the larvae. *A. pseudopunctipennis* was reared from larvae to adults, but fertilization has not been achieved. An adequate supply of adult mosquitoes for studies already planned is within reach, and the spraying of study areas is soon to begin.

A research project on the genetics of insecticide resistance in *A. albimanus* was carried on in the Johns Hopkins University School of Hygiene and Public Health, where colonies of resistant and susceptible strains were maintained. Dieldrin resistance was shown to be monofactorial and dominant in this species, as it is in most others tested.

Professional Meetings

During 1960 the Organization sponsored or assisted in the following professional meetings related to malaria: (a) the Annual Meeting of Directors of Malaria Services of Central America, Panama, and Mexico (San Salvador, El Salvador, 16-21 May); (b) a special technical meeting of Zone Representatives and malaria consultants of Zones II and III, together with Headquarters malaria eradication staff (Guatemala City, 23-26 May); (c) six intercountry coordination meetings involving Surinam and French Guiana (8-9 March); El Salvador, Guatemala, and Honduras (21-22 April); Mexico and Guatemala (3 May); Argentina and Bolivia (11-12 May); Colombia and Venezuela (8-10 September); and Peru and Bolivia (9-10 November). A special evaluation meeting with the staff of Mexico's National Malaria Eradication Commission was held from 22-25 November.

The Organization also participated in the meeting of Regional Malaria Advisers and in that of the WHO Technical Committee on Chemotherapy, held in Geneva from 30 May-4 June and 14-19 November, respectively.

Aedes aegypti Eradication and Yellow Fever

Aedes aegypti Eradication

Thirteen years have elapsed since the Directing Council (Buenos Aires, 1947) entrusted the Pan American Sanitary Bureau with the promotion and coordination of the *Aedes aegypti* eradication campaigns in the Americas. The Organization has been making every possible effort, within its budgetary limitations, to cooperate with the countries in carrying out their programs. Difficulties and problems have arisen, but they have been solved to such an extent that the results achieved to date can be considered satisfactory.

By Resolution IV of the XII Meeting of the Directing Council (Havana, 1960), El Salvador was declared free of *A. aegypti*; Colombia and Costa Rica completed the final verifications which confirmed the absence of the vector in their territories; and in the United States of America the yellow fever receptive area was reduced by the removal from it of North Carolina, Arizona, New Mexico, and the western half of Texas. In Argentina, Chile, Mexico, and Trinidad, the eradication of *A. aegypti* is within sight; and in Venezuela substantial progress was made in spite of widespread resistance to DDT.

The list of countries and territories that have eradicated

A. aegypti now includes Bolivia, Brazil, British Honduras, the Canal Zone, Ecuador, El Salvador, French Guiana, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, and Uruguay. However, the *A. aegypti* problem persists in the United States of America and in certain Caribbean areas, where for geographical, administrative, and financial reasons it has been impossible to organize eradication activities. The following is a summary of the present status of the *A. aegypti* eradication campaign in the Hemisphere.

Argentina. The campaign has been under way since 1953. Administrative difficulties delayed the work initially, but in recent years the Government has accelerated the campaign. The *A. aegypti* has been eradicated in the Provinces of Salta, Catamarca, Jujuy, Santiago del Estero, Tucumán, Misiones, Formosa, El Chaco, and Corrientes, which occupy the tropical and subtropical areas of the country where conditions are most favorable to the mosquito. Work is going forward in the Provinces of Córdoba, Santa Fe, Entre Ríos, La Rioja, San Juan, San Luis, La Pampa, and Buenos Aires. Toward the south there are fewer infested areas, since ecological conditions, particularly the tem-



Fig. 7. Status of the *Aedes aegypti* Eradication Campaign, December 1960.

perature, are less favorable to the development of the vector. There is good reason to believe that *A. aegypti* is no longer to be found south of the 35th parallel. If this is confirmed, the area that was presumed infested when the activities were started will be considerably reduced and, consequently, the duration of the campaign will be shortened.

Of the 2,894 localities inspected since the beginning of the campaign, 162 were found infested; of these, 156 are now considered free of the mosquito, two are still infested, and verifications have still to be made in the remaining four. Up to the present time, only very limited infestation has been found in the city of Buenos Aires. During 1960, 375 localities were inspected, 21 of which were subjected to verification and found free from the vector. A permanent concern of the health authorities in charge of the campaign is to maintain all international ports and airports with heavy traffic free of the vector.

Chile. Surveys made at the beginning of 1960 in 289 localities of the Provinces of Tarapacá, Antofagasta, and Atacama indicated the presence of *A. aegypti* in only two localities, Pica and Matilla; these were treated in February. The first and second verifications, made in May and August respectively, were negative. The third verification is scheduled for February 1961 and if it is also negative, the mosquito can be considered eradicated from Chile.

Colombia. Recent verifications confirm the eradication of *A. aegypti* throughout the country, including the town of Cúcuta, near the border with Venezuela, where in De-

cember 1959 a small area was found to be still infested. Since then, negative verifications have been obtained. Of the 3,801 localities checked from the beginning of the campaign to December 1960, *A. aegypti* were found in 354. These are now negative, so that the country can be declared free from the vector.

Costa Rica. Verifications made by the national health authorities and PASB personnel were completed in October 1960. The investigation confirmed that *A. aegypti* has not been found in the country since 1952.

Cuba. With the exception of a few coastal areas that are practically uninhabited, and the highest mountain regions 100,000 square kilometers of Cuban territory offer the most favorable conditions to the development and dispersion of *A. aegypti* because of climate, density of population, and facilities of transportation. All the urban centers and most of the rural localities on the island must be considered massively infested with the mosquito.

The campaign in Cuba started in 1954 but was delayed for budgetary reasons. When the necessary resources were made available early in 1959, a new plan of operation was put into effect. This plan provided for the eradication of *A. aegypti* within approximately four years. Up to the end of 1960, inspections had been made in 109 localities, 90 of which were found infested; post-treatment verification in 68 showed that 32 were still positive.

In several districts of Havana, *A. aegypti* has shown decreased susceptibility to DDT.

Dominican Republic. Owing to budgetary limitations, work is progressing slowly and it has not yet been possible to begin the activities in the capital. Apparently the eradication of *A. aegypti* from this country should not be difficult and could be achieved within a reasonable time if the necessary resources were made available.

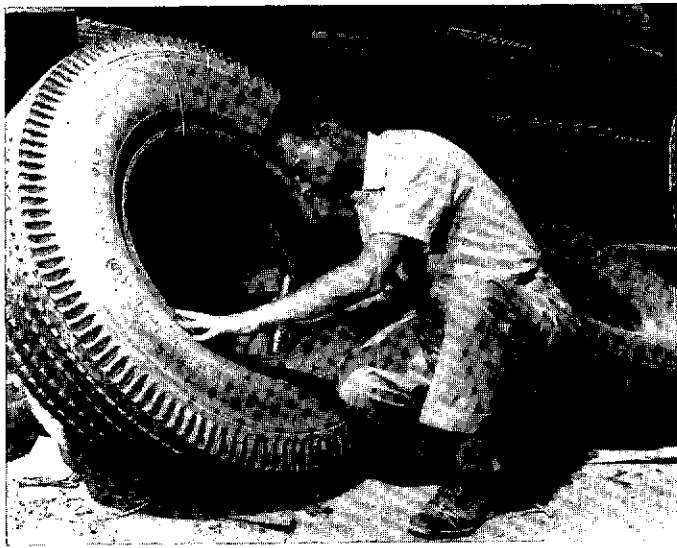
Haiti. The ecological conditions in the country are most favorable to the mosquito, whose resistance to DDT in the capital has been confirmed. Because of administrative difficulties, the campaign has been in abeyance since 1958.

Mexico. The malaria eradication campaign greatly contributed to the elimination of *A. aegypti* from large areas of the country. The malarious area coincides with 80 per cent of the area presumed infested with *A. aegypti*, the total extent of which has been estimated at one million square kilometers with 10 million inhabitants and two million houses.

The city of Mérida, which has been infested with *A. aegypti* since ancient times, had its first complete confirmation of being negative. A second verification will be made in 1961 with PASB assistance. All the Mexican ports in the Caribbean and the Gulf of Mexico are negative. In the Pacific ports of Mazatlán and Guaymas, which were positive in 1959, house-to-house spraying was done in 1960 for the first time, and the outlook is promising. Among the localities covered by the malaria eradication campaign

are the cities of Culiacán (State of Sinaloa) and Navojoa (State of Sonora), both of which were found to be infested and received their first anti-*aegypti* spraying in 1960. In the northern part of the country, *A. aegypti* were found in Nuevo Laredo and Ciudad Mier (State of Tamaulipas); in Sabinas, San José de Aura, Rodríguez, Escobedo, and Progreso (State of Coahuila); and in China, Los Herreras, and Marín (State of Nuevo León); all of which received their first DDT spraying in 1960.

United States of America. In September 1960 the U. S.



The ideal modern breeding place for *Aedes aegypti*.

Public Health Service reported to the Organization that recent surveys had indicated there were no more *A. aegypti* in the States of Arizona, New Mexico, Oklahoma, and North Carolina. The yellow fever receptive area has therefore been much reduced, but it still includes the States of Alabama, Arkansas, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, Tennessee; that part of Texas east of a line extending from Del Rio through Wichita Falls; American Samoa, Guam, the Ryukyu Islands, the Trust Territory of the Pacific Islands, the Virgin Islands, and Wake Island; and the Commonwealth of Puerto Rico.

A pilot project to eradicate *A. aegypti* is under way in Pensacola, Florida. This project was initiated in November 1957 to obtain information on unit costs, working methods, and the practicability of eradicating the species from a typical metropolitan area in the southeastern part of the United States of America. The project is an essential step in the adaptation of the perifocal method of applying residual insecticides, which has been used so successfully in Latin America, to the vastly different conditions existing in the continental United States.

An *Aedes aegypti* Eradication Conference was held on 27-28 September 1960 in Pensacola to consider the *A. aegypti* situation with particular reference to the Pensacola project. At this Conference it became clear that the tactics for eradication in the continental U.S.A. will have to vary from those used in the Latin American countries. The three salient reasons for this divergence are as follows: (1) *A. aegypti* cannot breed at all during about half the year, which greatly reduces the amount of field work; (2) almost all the *aegypti* breeding takes place outside of houses; and

Perifocal treatment of a water container on grounds near a modern apartment (background) for workers in Caracas, Venezuela.



(3) the great profusion of discarded tin cans and automobile tires that provide ideal breeding places for *A. aegypti*.

When the results of the Pensacola pilot project have been evaluated, it should be possible to estimate the cost of eradicating *A. aegypti* from the continental U.S.A. and from Puerto Rico.

Venezuela. During 1960 the campaign was continued, as planned, in two widely separated but strategic points, the Federal District and the State of Táchira, which borders on Colombia, where eradication campaign activities have been completed. In areas that have been treated by the malaria service, entomological surveys to confirm negativity to *A. aegypti* are being carried on.

The initial surveys were completed in the Federal District and the States of Miranda and Táchira, and are under way in those of Aragua, Carabobo, Guárico, Mérida, and Trujillo. Twenty-five out of 86 municipalities and 70 out of 827 localities inspected in 1960 were found to be infested. Two municipalities in the State of Guárico were found positive, in spite of having received antimalarial treatment.

Two methods of treatment, perifocal spraying with 5 per cent DDT and intradomiciliary spraying with 0.6 grams of dieldrin per square meter of wall, were employed. The latter technique was used because of mosquito resistance to DDT.

British Guiana. The 95 localities that were rid of *A. aegypti* remain negative and are under surveillance.

French Guiana. This territory was reinfested in 1959, possibly by mosquitoes coming from Surinam. *A. aegypti* were found in Cayenne, Sinnamary, Saint Laurent-du-Maroni, the Acarouany Leprosarium, Kourou, Macouria, and Rémire. These localities were treated and are now negative.

Surinam. A PASB-assisted survey carried out in 1960 to define the infested area revealed high indices and general infestation.

Caribbean Area. Geographical dispersion of the islands and certain administrative problems pose serious obstacles in the Lesser Antilles.

Bahamas. The Government was not able to assign sufficient personnel to the campaign because of financial difficulties. Resistance of *A. aegypti* to DDT has been shown to exist.

British Virgin Islands. The campaign was begun during the first quarter of 1960, with the cooperation of the Organization. Plans call for the spraying of all houses.

Saint Kitts-Nevis-Anguilla. St. Kitts and Nevis are negative. Anguilla was treated once, and plans are under way for verification and a second treatment. An international consultant stationed at St. Kitts handles the programs in the neighboring islands.

Montserrat. On this island, which had been negative for more than a year, a focus of reinfestation was discovered by the surveillance service during the first quarter of 1960. Measures were immediately taken to eliminate it.

Antigua-Barbuda. Both these islands are negative and are under permanent surveillance service.

Dominica. The Government has agreed to survey the island with assistance from the Organization in order to determine the extent of *A. aegypti* infestation. This survey will be the first step toward an eradication campaign.

Saint Lucia. After a long interval of negativity, a focus was found near the port. The local authorities took the necessary measures to remedy the situation and the island is again negative. This incident showed the need for strict surveillance until such time as all the neighboring islands are negative.

Saint Vincent. All the islands included in this group are negative and are under surveillance.

Grenada. This island is negative. In Carriacou (Grenadines), where *A. aegypti* persists, spraying operations were continued.

Barbados. Owing to administrative difficulties the campaign has been delayed, and the problem of inspecting vacant houses has not yet been solved. Moreover, resistance of *A. aegypti* to DDT has been discovered.

Trinidad and Tobago. The verifications up to the end of 1960 showed negative results in both of these islands.

Guadeloupe. The campaign, which was begun in 1956, has encountered administrative problems and, instead of covering the entire island as planned, has been limited to the capital and neighboring areas. Thus about 70 per cent of the houses on the island are still untreated. Here, too, the problem is further complicated by *A. aegypti* resistance to DDT.

Saint Martin (French section). The verification that was planned for the latter part of 1959 has not yet been carried out.

Martinique. This island has a program for the control of insects by periodic treatment of houses, but *A. aegypti* infestation persists.

Netherlands Antilles. Aruba, Bonaire, Saba, Saint Eustatius, and Saint Martin continue to be negative. Complete negativity is likely to be obtained in Curaçao as a result of recent improvements in the spraying operations.

Jamaica. Operations were continued in the Mandeville area, and plans for an extended campaign are being studied. The work done in the malaria campaign has eliminated *A. aegypti* from large areas but, unless the program is completed, they may be reinfested from neighboring positive sections, possibly with mosquitoes that are resistant to DDT.

Yellow Fever

In 1960 there were 48 reported cases of yellow fever in the Americas. All were of the jungle type and occurred in Bolivia, Brazil, Colombia, Peru, and Venezuela. There were no unusual epidemiological findings during the year.

The Organization continued to provide both financial and technical assistance to the Carlos Finlay Institute in Bogotá, Colombia. The Institute produces 17D yellow fever vaccine, makes epidemiological studies of yellow fever and other arbor virus infections, and since 1957 has been engaged in significant studies on the administration of unrefrigerated 17D yellow fever vaccine by means of cutaneous scarification instead of by the customary method of subcutaneous inoculation. Early trials of "scratch" vaccination that were made under ideal conditions gave almost perfect results, and a more recent trial in San Vicente de Chucurí, Santander, Colombia, under field conditions, gave 95 per cent successful results. This work again demonstrated that 17D vaccine can be used in areas where it is impossible to obtain refrigeration.

Field studies in San Vicente de Chucurí were continued during 1960. Up to December, 22 strains of virus had been isolated from mosquitoes: Mayaro, 10; Venezuelan equine encephalitis, 4; Ilheus, 3; Bussuquara, 2; not yet identified, 3.

By the end of October the Institute had prepared 493,940

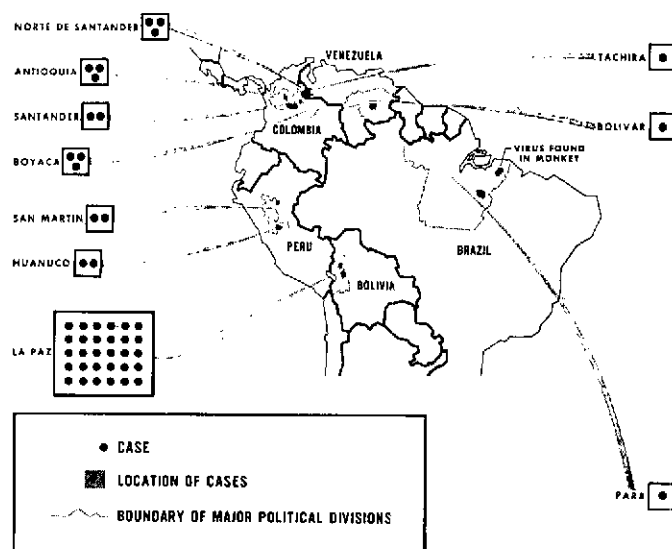


Fig. 8. Reported Cases of Jungle Yellow Fever in the Americas, and Location, by Major Political Divisions of Each Country, 1960.

TABLE 11. REPORTED CASES OF YELLOW FEVER^a IN THE AMERICAS, 1951-1960

Area	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Total	312	341	89	95	39	28	80	61	34	48
Bolivia	3	1	18	—	4	6	19	2	2	30
Brazil ^b	50	221	39	9	8	2	10	26	3	1
Colombia ^b	26	16	11	12	22	16	35	21	21	11
Costa Rica	180	93	5	—	—	—	—	—	—	—
Ecuador	42	—	—	—	—	—	—	—	—	—
Guatemala ^b	—	—	—	—	—	—	3	—	—	—
Honduras ^b	—	—	—	1	—	—	—	—	—	—
Nicaragua ^b	—	7	8	—	—	—	—	—	—	—
Panama	3	1	—	—	—	1	4	—	—	—
Peru	4	1	—	26	—	—	3	6	5	4
Venezuela ^b	4	1	8	29	5	3	6	6	1	2
British Honduras	—	—	—	—	—	—	—	—	—	—
Trinidad and Tobago ^b	—	—	—	18	—	—	—	—	2	—

^a Jungle yellow fever, with the exception of three cases in Trinidad in 1954.

^b All cases with laboratory confirmation.

^c Evidence of activity of the virus of yellow fever in vertebrates other than man.

— No case.

doses of yellow fever vaccine, of which 294,680 were shipped to:

Aruba	750
British Guiana	6,060
Chile	2,200
Cuba	5,000
Curaçao	1,050
Ecuador	10,000
Jamaica	500
Mexico	62,000
Panama	3,300
Peru	80,510
Venezuela	123,310

In the same period, 110,003 doses of the vaccine were administered in Colombia.

The Organization continued to collaborate with the Oswaldo Cruz Institute of Rio de Janeiro which, like the Institute at Bogotá, provides 17D vaccine and diagnostic service free of charge to the countries of the Americas. During 1960 the Oswaldo Cruz Institute prepared 4,667,200 doses of yellow fever vaccine, of which the following amounts were supplied, through the PASB, to: Portugal, 40,000 doses; Venezuela, 300,000; and Bolivia, 50,000. In Brazil, 2,575,400 doses were used during the year. The stock at the Institute, as of mid-December, was 3,594,200 doses.

TABLE 12. REPORT ON THE *Aedes aegypti* ERADICATION CAMPAIGN IN THE AMERICAS, FROM ITS BEGINNING TO DECEMBER 1960

Area	Date started	Latest report available	Area assumed initially infested (km ²)		Localities inspected					Present stage
			Total	Inspected (%)	Number	Initially positive				
						Total	Treated	Number	Still positive	
Argentina	June 1953	Dec. 1960	1,500,000	49.2	2,894	162	161	158	2	A
Bolivia	June 1952	Dec. 1956	100,000	100.0	282	65	65	65	—	E
Brazil	Jan. 1931	Sept. 1959	5,358,822	100.0	270,588	36,119	36,119	36,119	—	E
Chile	June 1945	Aug. 1960	50,000	100.0	289	44	44	44	—	N
Colombia	Nov. 1950	Dec. 1960	280,000	100.0	3,801	354	354	354	—	E
Costa Rica	April 1949	Oct. 1960	20,000	100.0	1,342	104	104	104	—	E
Cuba	March 1954	Dec. 1960	100,000	1.0	109	90	90	68	32	A
Dominican Republic	Oct. 1952	Dec. 1960	42,020	80.4	1,413	353	353	219	45	A
Ecuador	June 1946	Dec. 1960	69,454	100.0	2,824	337	337	337	—	E
El Salvador	April 1949	Dec. 1960	18,675	100.0	909	190	190	190	—	E
Guatemala	Jan. 1949	Dec. 1960	36,423	100.0	2,485	138	138	138	—	E
Haiti	Oct. 1953	Sept. 1958	27,750	49.4	2,379	605	602	435	27	I
Honduras	Sept. 1949	Dec. 1960	69,929	100.0	600	53	53	53	—	E
Mexico	Jan. 1951	Dec. 1960	1,000,000	91.5	1,908	595	591	575	3	A
Nicaragua	Jan. 1950	June 1959	65,263	100.0	3,126	18	18	18	—	E
Panama	Feb. 1949	June 1960	56,246	100.0	2,853	44	44	44	—	E
Paraguay	Jan. 1948	Sept. 1960	200,000	100.0	1,561	98	98	98	—	E
Peru	Jan. 1940	Dec. 1960	638,000	100.0	4,320	191	191	191	—	E
United States	—	—	777,000	—	—	—	—	—	—	P
Uruguay	Oct. 1948	March 1960	187,000	100.0	1,020	133	133	133	—	E
Venezuela	June 1948	Dec. 1960	600,000	85.0	4,531	490	448	361	61	A
France										
French Guiana	May 1949	April 1960	91,000	100.0	222	55	55	55	—	E
Guadeloupe	Jan. 1957	Oct. 1960	1,619	4.9	53	38	38	33	26	A
Martinique	Nov. 1953	Dec. 1958	1,813	100.0	132	95	8	8	6	I
Netherlands										
Aruba	March 1952	Dec. 1960	174	100.0	9	9	9	9	—	N
Bonaire	Sept. 1952	Sept. 1959	246	100.0	6	6	6	6	—	N
Curaçao	Oct. 1951	Dec. 1960	448	100.0	155	155	155	155	3	A
Saba, St. Eustatius, St. Martin	July 1958	Aug. 1959	60	100.0	34	30	30	30	—	N
Surinam	—	1960	143,000	...	7	6	—	—	—	P
United Kingdom										
Antigua	Aug. 1954	Dec. 1960	283	100.0	50	47	47	47	—	N
Bahamas	June 1954	Dec. 1960	11,396	1.3	13	11	11	11	9	A
Barbados	March 1954	Dec. 1960	171	100.0	95	95	95	95	15	A
Bermuda	Jan. 1951	Dec. 1951	53	100.0	59	9	9	9	—	N
British Guiana	March 1946	Dec. 1960	4,662	100.0	95	95	95	95	—	N
British Honduras	Oct. 1950	March 1960	22,965	100.0	84	2	2	2	—	E
Cayman Islands	—	—	259	—	—	—	—	—	—	P
Dominica	Feb. 1951	Oct. 1956	789	90.0	136	66	66	66	16	I
Grenada	Nov. 1952	July 1959	311	100.0	8	8	8	8	—	N
Grenadines	Nov. 1952	July 1959	65	100.0	7	5	5	5	1	A
Jamaica	Feb. 1950	Dec. 1960	11,424	77.3	73	51	51	34	15	A
Montserrat	May 1956	Dec. 1960	83	100.0	33	16	16	16	—	N
St. Kitts-Nevis-Anguilla	May 1950	Nov. 1960	396	100.0	62	33	33	33	18	A
Saint Lucia	May 1953	Oct. 1960	259	100.0	50	50	50	50	1	A
Saint Vincent	March 1953	March 1959	332	100.0	8	8	8	8	—	N
Trinidad and Tobago	Jan. 1951	Dec. 1960	3,108	100.0	128	122	122	122	—	N
Turks and Caicos Islands	—	—	83	—	—	—	—	—	—	P
Virgin Islands	March 1960	Dec. 1960	174	74.6	25	25	25	21	14	A
United States										
Canal Zone	1948	Sept. 1960	1,432	100.0	21	2	2	2	—	E
Puerto Rico	May 1950	Dec. 1960	8,896	61.8	481	248	248	248	116	A
Virgin Islands	—	—	124	—	—	—	—	—	—	P

P = Preparatory.

A = Active.

N = Negative for *A. aegypti*.

E = *A. aegypti* eradicated.

I = Interrupted programs.

— = Zero or no activity.

... = Data not available.

Smallpox

The Governing Bodies of the Organization have shown continued concern over smallpox. They have repeatedly emphasized the urgent need to eradicate this disease and have entrusted the Bureau with the coordination of the countries' efforts to attain the goal of continent-wide eradication. They have also charged the Bureau with carrying out the necessary studies to establish a definition of eradication suitable for uniform application in the different countries.

A definition of this kind must be universally applicable so that there may be uniform criteria for determining when a country has eradicated smallpox. The establishment of a suitable definition has taken more time than was anticipated, because consultations with authorized persons in the various countries and an exchange of opinions and viewpoints between PAHO and WHO were required.

As a result of these consultations, the Bureau has submitted the following tentative definition to WHO for consideration:

For practical purposes, smallpox can be considered eradicated from countries where it has been persistently present, when no cases of smallpox

occur during three consecutive years after an adequate vaccination campaign.

Although varying conditions in different countries might necessitate changes in the method of conducting the eradication programs, it is generally agreed that the correct vaccination of 80 per cent of each sector of the population, within a period not exceeding five years, will result in the dying out of smallpox.

The countries where smallpox has been eradicated should adopt measures for maintaining the eradication status, either through a permanent program of immunization or through the appropriate combination of isolation and immunization, whenever the disease is reintroduced in the country. It is recommended that countries under great risk of smallpox introduction—endemic situation in neighboring countries, for example—maintain a high level of immunity in the population by means of (a) vaccination of the new accessions to the population (newborn children and immigrants), and (b) periodic revaccination of the more exposed sectors of the population.¹

Table 13 shows the cases of smallpox reported to the PASB, by country and year, in the period 1949–1960.

In recent years Mexico, Peru, and Venezuela, have reported no cases of smallpox. Chile reported one case in 1959, an autochthonous one, caused by imported cases. In Bolivia, Colombia, and Paraguay the number of cases

¹ Official Document PAHO 36, 276.

TABLE 13. REPORTED CASES OF SMALLPOX IN THE AMERICAS, 1949–1960

Area	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Total	18,352	21,485	9,221	9,301	8,930	11,979	8,348	6,389	6,220	4,343	4,702	4,756
Argentina	1,609	4,788	1,404	982	309	256	55	86	335	27	36	64
Bolivia	805	594	728	432	429	62.4	372	499	1,310	183	7	1
Brazil ^a	670	706	1,190	1,668	923	1,035	2,580	2,385	1,411	1,232	2,524	2,278 ^b
Chile	4	3,414	47	15	9	—	—	—	—	—	1	—
Colombia	3,040	4,818	3,844	3,135	5,526	7,203	3,404	2,572	2,145	2,009	950	171
Cuba	3	—	—	—	—	—	—	—	—	—	—	—
Ecuador	664	251	174	665	708	2,516	1,831	669	913	863	1,184	2,188
Guatemala	4	10	3	1	1	—	—	—	—	—	—	—
Mexico	1,060	762	27	—	—	—	—	—	—	—	—	—
Panama	—	—	—	—	—	—	—	—	—	8 ^c	—	—
Paraguay	179	304	282	797	770	107	57	132	103	21	—	35
Peru	6,305	3,612	1,218	1,360	172	115	—	—	—	—	—	—
United States	49	39	11	21	4	9 ^d	2 ^d	—	1 ^d	—	—	—
Uruguay	9	3	—	16	7	1	45	42	2	—	—	19 ^e
Venezuela	3,951	2,181	280	109	72	13	2	4 ^f	—	—	—	—
British Guiana	—	—	11	—	—	—	—	—	—	—	—	—
Martinique	—	—	1	—	—	—	—	—	—	—	—	—
Netherlands Antilles	—	3	1	—	—	—	—	—	—	—	—	—

^a Data for the Federal District and State capitals.

^b Data for State of Guanabara, and data for six months for the State of Rio Grande do Sul and for the capitals of other States.

^c Including four imported cases.

^d These cases do not fulfill the generally accepted criteria for a

diagnosis of smallpox.

^e Including imported cases.

^f Clinical diagnosis not supported by epidemiological evidence.

— No case.

reported has been diminishing. In 1960 Bolivia reported only one case; there was a dramatic decline in Colombia; and Paraguay reported only 35 cases, all among indigenous migrant groups. These results are attributable to the intensive campaigns carried out in those countries.

No smallpox cases have occurred in the countries of Central America or in the Caribbean area in the past seven years, with the exception of Panama which in 1958 had an outbreak of eight cases in a locality on the Colombian border. However, since the number of vaccinations in many of those countries or islands is relatively small, large sectors of the population are susceptible to the disease.

In 1960 Ecuador and Brazil again had the highest figures for smallpox. The disease is endemic in both countries, which have frequent epidemic outbreaks. The solution of the problem of smallpox in those countries is essential to the success of the smallpox eradication program in the Americas.

The Organization has continued to assist Member Governments in planning smallpox eradication programs based on vaccination campaigns which can, in due course, be incorporated into the general public health services of the countries. This assistance has included technical advisory services for the production of smallpox vaccine and the

provision of equipment for the preparation of the dried vaccine. In other cases, the acquisition of vaccine ready for use was facilitated, the services of consultants specialized in developing vaccination campaigns were provided, and fellowships were awarded for training national personnel. The services of an accredited laboratory where the purity and potency of vaccines prepared by the national laboratories can be tested has also been made available to the Governments.

Table 14 shows the most recent information received by the Bureau on vaccinations performed in 1960, and Table 15 indicates the amounts of vaccine produced during the year.

In Bolivia, after important outbreaks of smallpox in 1957, a vaccination program to immunize not less than 80 per cent of the population was begun. The program was divided into an attack phase, during which the most populated centers readily accessible by highway or railroad were to be vaccinated; a consolidation phase, during which the remainder of the country would be vaccinated; and a

TABLE 14. REPORTED NUMBERS OF SMALLPOX VACCINATIONS IN THE AMERICAS, 1958-1960

Area	1958	1959	1960
Argentina	751,591	1,280,486	1,608,597
Bolivia	2,432,186	422,945	42,603
Brazil	4,139,772	7,856,294	4,910,091
Chile	628,325	2,778,686	1,276,000
Colombia	2,557,615	2,643,381	1,988,368
Costa Rica	25,395	15,820	14,657
Cuba	7,996	25,083	38,635 ^a
Dominican Republic	4,511	5,027	26,057
Ecuador	301,112	546,667	507,361
El Salvador	43,620	32,818	29,383
Guatemala	99,200	34,428	58,160
Haiti	443,119	— ^b	441
Honduras	32,328	12,824	17,843
Mexico	3,089,701	5,287,714	3,637,334
Nicaragua	10,108	10,521	8,803
Panama	48,610	33,108	24,835
Paraguay	594,003	589,316	122,897
Peru	1,273,017	824,100	884,392 ^c
Uruguay	102,054	87,324	214,360
Venezuela	862,585	1,060,850	920,969
Antigua			1,859
Barbados			10,741
British Honduras			4,050
Curaçao			3,665
Grenada			3,402
Jamaica			79,060
Martinique			14,094
Montserrat			1,204
St. Kitts-Nevis-Anguilla			3,300
Surinam			3,665
Trinidad and Tobago			3,839

^a Partial information.

^b No vaccinations reported.

^c As of October 1960.

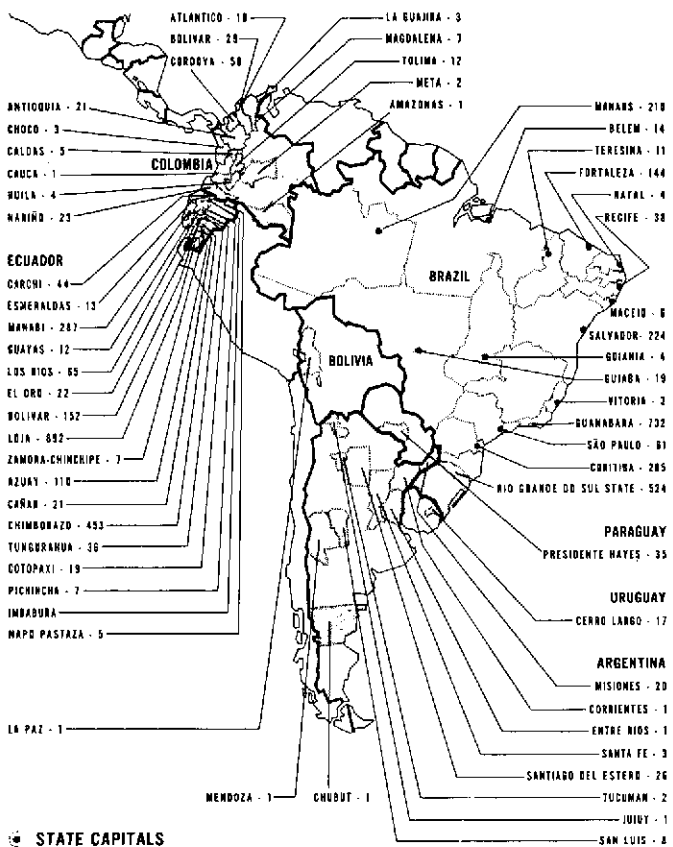


Fig. 9. Reported Cases of Smallpox in the Americas, by Major Political Divisions of Each Country, 1960.

TABLE 15. REPORTED PRODUCTION OF SMALLPOX VACCINE IN THE AMERICAS, 1958-1960

Country	1958		1959		1960	
	Glycerinated	Dried	Glycerinated	Dried	Glycerinated	Dried
Argentina	6,500,000	83,000	4,099,400	60,000	6,600,000	
Bolivia		37,000		543,800		310,000
Brazil	8,196,555		17,217,090		11,792,304	889,700
Chile	862,500	885,000	7,850,000	1,310,000	960,000	530,000
Colombia	2,125,800	4,087,980		4,511,600		2,473,240
Cuba	180,000		210,000		1,360,000	
Ecuador	161,830	337,900		1,210,820		1,055,740
El Salvador	210,000		50,000		60,300	
Guatemala	92,345		230,900		484,400	
Honduras	31,100		20,200		20,200	
Mexico	8,819,023		20,859,300		10,477,800	
Nicaragua	35,880		15,100		15,300	
Peru	932,100		1,029,400	2,029,400	563,465	1,362,300
Uruguay	2,100,000		1,726,700		1,982,000	68,500
Venezuela	6,000,000	200,000	4,751,000	217,000	3,925,000	316,000

final phase of maintenance and surveillance. At the end of the first stage, carried out during 1957 and 1958, 2,432,186 persons, or 76 per cent of the population of the country, were vaccinated. The second phase was only partly completed and the desired immunization level has not yet been attained in a number of provinces, the total population of which is approximately 660,000. Nevertheless, a good deal of success has already been achieved, for only seven cases of smallpox were reported in 1959 and one in 1960. The program was interrupted in 1959 for financial reasons. It is urgently necessary to resume vaccination activities, for otherwise all gains made to date may be lost. The International Cooperation Administration (ICA) of the United States of America has actively assisted the program. The laboratory to which the Organization furnished equipment for the preparation of dried vaccine produced 543,800 doses in 1959 and 310,000 doses in 1960. The number of vaccinations performed during 1960 was 42,603.

Argentina reported 64 cases of smallpox in 1960, which occurred mostly in the northern and central areas of the country. As a result of the collaboration between the National and the Provincial governments, a vaccination program aimed at reaching 80 per cent of the inhabitants of 11 provinces was initiated in 1960. During the year, 1,608,597 persons were vaccinated. The production of glycerinated smallpox vaccine in the same year was 6,600,000 doses. In 1961 it is expected to extend the program to another four provinces.

Smallpox continues to be a serious public health problem in Brazil. During 1960, 2,278 cases were reported from the Federal District and the state capitals. The Organization furnished laboratory equipment for the production of dried vaccine to the States of Rio Grande do Sul and Pernam-

buco, and to the Oswaldo Cruz Institute in Rio de Janeiro. A fellowship was granted to a medical officer for visits to dried vaccine production centers in the United States of America and in Europe. During 1960 the production of glycerinated vaccine was 11,792,304 doses and that of dried vaccine 889,700. The number of smallpox vaccinations performed was 4,910,091.

In Chile the normal vaccination program is the responsibility of the local public health services. In the period 1955-1959, 6,123,409 persons were vaccinated; that is, 82 per cent of the country's population, which on 30 June 1959 was estimated at 7,465,000. The program consists in the vaccination of the newborn and of immigrants, and the revaccination of 20 per cent of the population every five years. During 1960, 1,276,000 persons were vaccinated. The laboratory that prepares smallpox vaccine at the Bacteriological Institute, for which the Organization provided additional equipment in 1958, produced 960,000 doses of glycerinated vaccine and 530,000 of the dried type in 1960.

In Colombia, at the end of five years of operation of the smallpox eradication program, up to October 1960, 9,500,143 persons had been vaccinated in house-to-house drives in the Special District of Bogotá, in the Departments of Antioquia, Boyacá, Caldas, Cauca, Córdoba, Chocó, Cundinamarca, Huila, Nariño, Norte de Santander, Santander, Tolima, and Valle; in the Territorial District of Caquetá; and in the Special Districts of Amazonas, and Putumayo. During that period, the PASB provided the services of both a permanent and a temporary consultant to collaborate with the national authorities in carrying out the program and in the production of dried vaccine, and also awarded fellowships for studies abroad to three

professionals. The vaccinations in areas bordering on Ecuador, Peru, and Brazil have also been completed. The vaccination of the 1,323,559 inhabitants of three departments, two territories and five special districts has not yet begun, but may possibly be accomplished during the first semester of 1961 if work continues at the present rate.

The campaign is under the immediate direction of a national coordinator and of three zone medical officers. A careful case-reporting service has been organized and all cases occurring in vaccinated areas are visited by the above-mentioned medical officers, in order to confirm the diagnosis on the basis of clinical and epidemiological evidence, and by laboratory examination whenever possible. The Samper Martínez Institute produced 4,511,600 doses of dried vaccine in 1959 and 2,473,240 in 1960. The number of smallpox cases reported in 1960 was 171. The laboratory equipment for the production of dried vaccine was provided by UNICEF.

Cuba produces sufficient glycerinated vaccine for its own needs and a small amount of dried vaccine as well. The Organization has provided the equipment necessary for producing a larger amount of dried vaccine. The Government offered 500,000 doses of glycerinated vaccine for the Regional program and announced another contribution of two million doses for the world-wide program under the auspices of WHO. One million three hundred and sixty thousand doses of glycerinated vaccine were produced during 1960.

Smallpox is a serious public health problem in Ecuador. In 1959 the number of cases reported was 1,184, and in 1960, 2,188. The program that began in 1958 had as its objective the vaccination of 80 per cent of the population within a maximum of five years. Up to December 1960 the number of vaccinations performed was 1,355,140. The campaign has developed in an irregular fashion, with frequent and prolonged interruptions due chiefly to economic and administrative problems. Vaccinations to date fall short of the three-year target.

The Organization, in addition to supplying laboratory equipment for the production of dried vaccine and seven vehicles for personnel transportation, has provided the services of a permanent consultant. The National Institute of Health "Leopoldo Izquieta Pérez" prepared 1,210,820 doses of dried vaccine in 1959, and 1,055,740 in 1960. The number of vaccinations performed in 1960 was 507,361.

A smallpox vaccination program begun in Haiti in 1957 was interrupted in 1958 for administrative reasons. During 1960, only 441 smallpox vaccinations were performed.

In Mexico there have been no cases of smallpox since 1952. A high level of immunity is maintained by means of regular vaccinations carried out by the local public health services. The Organization provided equipment and the services of a specialized consultant for the large-scale production of dried vaccine. At the Twelfth World Health Assembly, Mexico announced that it would place

at the disposal of the WHO five million doses of glycerinated vaccine for its world program. The reserve of glycerinated vaccine in Mexico at 31 December 1960 was 13,805,700 doses.

In September 1957 Paraguay began a program for the purpose of vaccinating not less than 80 per cent of the population within three years. The campaign was completed in February 1960, by which time 1,462,904 persons had been immunized. This number represents 86.7 per cent of the estimated population at 30 June 1959. Of the total vaccinations performed, 235,478, or 16 per cent, were primary vaccinations. Glycerinated vaccine produced in Uruguay was used in this campaign; the multipressure technique was utilized as was the method of vaccinating numerous small population clusters. The maintenance of an adequate level of immunity has been entrusted to the regular public health services which, by the end of the year, had made 32,858 primary vaccinations and 68,141 revaccinations.

No cases of smallpox were reported in Paraguay during the second half of 1958 or in 1959. In 1960, 35 cases were reported, all occurring in migrant indigenous groups which had not been located in the jungle areas during the vaccination campaign. No secondary cases developed, despite the fact that there were opportunities for other persons to

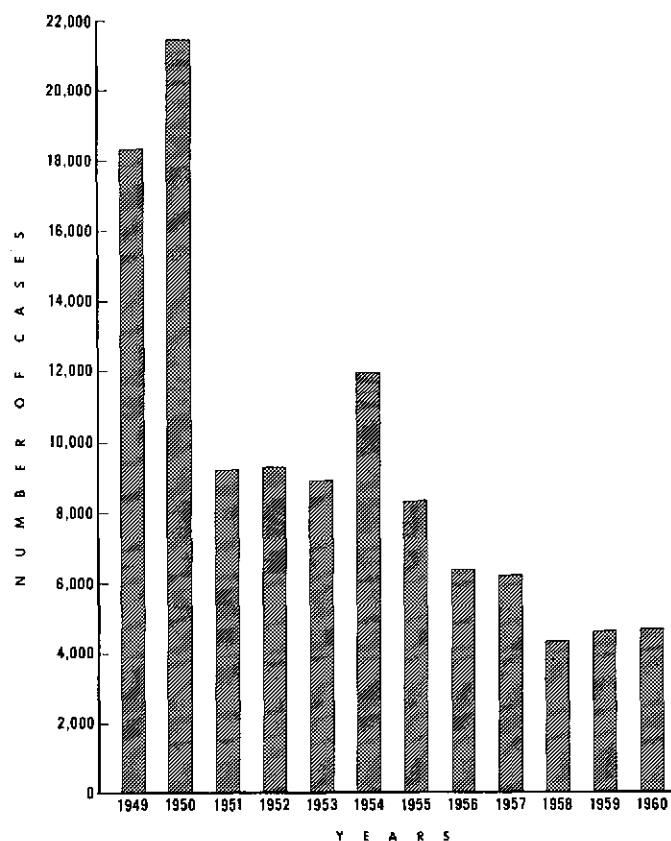


Fig. 10. Total Cases of Smallpox Reported by Countries of the Americas, 1949-1960.

become infected. This fact shows that the vaccine used in the campaign was effective and the correct technique had been employed.

In Peru the Organization cooperated in the smallpox eradication campaign which began in October 1950 and covered 7,672,892 persons, or 87 per cent of the country's population. The success of this well-organized campaign is demonstrated by the fact that no smallpox case has occurred in the country since December 1954. In the first 10 months of 1960, the number of persons vaccinated was 884,392. A total of 563,465 doses of glycerinated vaccine and 1,362,300 of dried vaccine were produced.

In Uruguay, 19 cases of smallpox were reported during 1960, including 2 imported cases; 214,360 persons were vaccinated. The laboratory of the Municipality of Montevideo produced 1,982,000 doses of glycerinated vaccine, and, with equipment provided by the Organization, its first 68,500 doses of the dried type.

A nation-wide smallpox vaccination campaign was carried out in Venezuela with the result that no smallpox cases have occurred in that country since 1957. In order to consolidate the achievements gained, smallpox vaccination has been incorporated into the general public health serv-

ices. During 1960 the production of dried vaccine was 316,000 doses and of the glycerinated, 3,925,000. The Organization provided the equipment for dried vaccine production. During the year, 920,969 persons were vaccinated.

The preceding account gives an indication of the progress achieved in the smallpox eradication programs in the Americas. This progress varies greatly from country to country, so that although an important group of the countries have achieved the objective of eliminating the disease and others are close to the goal, there are still countries in which smallpox is present and where eradication campaigns must be begun without delay. It is also highly advisable for countries whose eradication programs have become indefinitely prolonged and which have a very high incidence of smallpox, to give ample and decided attention to this type of activity.

The foci of smallpox remaining in the Continent not only constitute a problem for the countries in which they occur, but also represent a continuing threat and cause for concern to those countries which, thanks to their spirit of perseverance and continental solidarity, are already free from the disease.

Plague

Plague is enzootic in Argentina, Bolivia, Brazil, Ecuador, Peru, the United States of America, and Venezuela, and therefore a constant threat to human beings. During 1960 all but the first and last-mentioned of these countries notified cases of sylvatic plague but, as in previous years, all the important cities and ports of the Hemisphere remained free from the disease. Table 16 shows the number of reported cases of plague in the Americas during the period 1956-1960. Figure 11 shows the cases reported in 1960 and their location by major administrative divisions of each country.

On the occasion of the plague outbreak in the border area between Peru and Ecuador, the Bureau provided the Government of those two countries with the services of a consultant who made a study of the situation and recommended certain control measures.

During 1960 there were 139 cases of human plague in Peru; 132 cases and 48 deaths occurred in the Province of Piura, and 7 cases and 1 death in the Province of Cajamarca. The majority of the cases occurred during the first half of

the year. In Ecuador there were 35 cases with 5 deaths in the Province of Chimborazo, 5 cases in the Province of El Oro, and 37 cases with 9 deaths in the Province of Loja.

An epidemiological study was made in 1960 of the plague problem in Venezuela, where the disease is now confined

TABLE 16. REPORTED CASES OF PLAGUE IN THE AMERICAS, 1956-1960

Country	1956	1957	1958	1959	1960
Argentina	—	—	1	—	—
Bolivia	3	—	—	—	12
Brazil	4	37	25	16	28
Ecuador	80	79	22	40	77
Peru	24	37	49	33	139
United States	1	1	—	4	2
Venezuela	3	—	—	—	—

— No case reported.

to a small area situated on the border between the States of Aragua and Miranda. There plague appears sporadically in man and more regularly in sylvatic rodents, several species of which are infected, especially *Sigmodon hispidus* and the *Heteromys anomalus anomalus*.

Ports and cities in Venezuela that were formerly infected are now free from the disease, the outbreaks recorded since 1939 having occurred in rural areas. Although the incidence in man has diminished as this "sylvatization" of plague has taken place, many of the outbreaks recorded since 1943 have shown a focal and simultaneous incidence in the occurrence of the cases. This fact points to the previous existence of the infection in domestic or peridomestic fauna.

The most probable origin of domestic human plague is the infected *Rattus rattus*. This rodent exists in all rural habitations and is the most constant, and frequently the only, animal susceptible to plague.

The antiplague campaign in Venezuela is well oriented. It is based on the constant policing of human and animal infections, periodical desinsectization of homes, and the application of rat-proofing measures wherever local conditions permit.

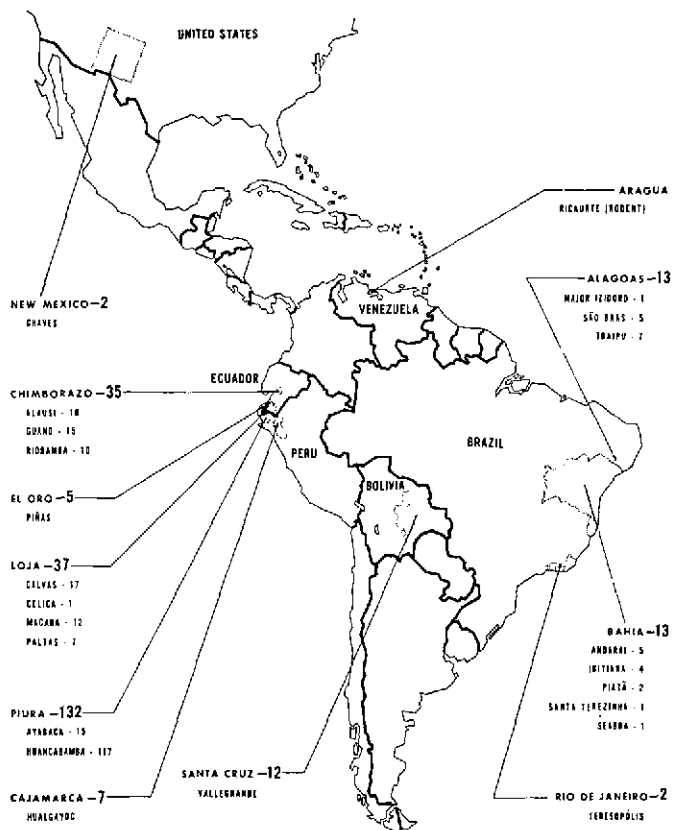


Fig. 11. Reported Cases of Plague in the Americas, and Location, by Major Political Divisions of Each Country, 1960.

Yaws Eradication

The surveillance phase of the yaws eradication campaign in Haiti continued to develop satisfactorily during 1960. The field work was handled by 35 inspectors forming seven teams and directed by two supervisors. To expedite the work, the inspectors were trained in dark-field microscopic examinations and the teams were subdivided into two sections, each with a McArthur microscope.

In 1959, 625,513 persons were examined, of which 695 were classified as infectious cases of yaws and treated; of these, 333 were early forms of yaws, 356 were "wet crab," and six had ulcers which upon examination proved to be positive for *Treponema pertenue*. Up to December 1960 the surveillance phase covered an area with 2,350,420 inhabitants, or approximately 67 per cent of the total population of Haiti. The number of presumed cases of infectious yaws detected and treated during the year was 751.

A comparison of the number of detected cases of infectious yaws with the population examined shows that yaws incidence per 10,000 diminished in this group from 10 in 1959 to 3 in 1960.

In July 1960 a survey was started to determine the true nature of the ulcers recorded as "positive," for it was suspected that the spirochetes observed in the dark-field examination did not always correspond to *T. pertenue*. Inspectors were trained and then instructed to prepare two smears from each ulcer considered "positive" after a microscopic dark-field examination. The smears were sent to the National Laboratory for study by the PASB/WHO laboratory consultant. Between July and November 138 specimens from different areas throughout the country were collected. *Borrelia vincentii*—sometimes associated with *Fusiformis fusiformis*—was identified in 81 per cent; and

only in 1.5 per cent was *T. pertenue* confirmed. The remainder of the specimens contained only cocci and bacilli.

The above clearly indicates that at present it is difficult to find ulcers due to yaws in Haiti.

In order to determine whether the "early cutaneous lesions" were, in effect, manifestations of yaws and not of some other skin disease of different etiology, it was decided to take specimens of every case notified and to have them examined by the National Laboratory. This new measure will allow a more accurate evaluation of yaws prevalence in Haiti.

Field activities of the yaws eradication program in the Dominican Republic were continued according to plan, but insufficient vehicles hampered transportation and reduced the effectiveness of the campaign. The case-detection and initial-treatment stage achieved total coverage of the country by 12 February 1960. To consolidate the activities of former years, the surveillance stage was then begun so that residual infectious cases and their contacts could be ascertained and treated. In the case-detection stage from 1 January to 12 February three infectious yaws cases were found among the 60,948 persons examined. During the surveillance stage, the number of infectious cases found in the 265,028 persons examined was 227.

In Venezuela, yaws is considered to be endemic in the area that extends from the State of Sucre to that of Táchira,

with greater prevalence in the States of Miranda, Carabobo, Yaracuy, Cojedes, and Trujillo.

The Government of Venezuela initiated its yaws eradication campaign in 1959. During 1960, 220,093 persons were examined; 9 cases of early yaws, 61 of late yaws with manifestations, and 10,491 cases of latent yaws were discovered. Penicillin aluminum monostearate (PAM) was administered to 35,875 persons. Activities during the year were concentrated in the Federal District and the States of Sucre, Miranda, Guárico, Cojedes, Falcón, Lara, and Portuguesa. No yaws was found in the last four states.

British Guiana requested the services of a consultant to make a survey in order to determine the extent of the yaws problem in that territory. As a result of the study, an eradication program was prepared, and the cooperation of international agencies for developing the program has been requested.

In Jamaica, as a preliminary step to eradication, the Health Department promoted the establishment of a team of experts to make a survey of areas where yaws is endemic.

After the yaws eradication program was interrupted in St. Lucia, new foci of the disease appeared. A new campaign plan was prepared in cooperation with a PASB/WHO consultant.

The last stage of the yaws eradication program in Trinidad was completed in July 1960.

Venereal Disease Control

In the venereal disease control program under way in the Dominican Republic, high priority continued to be given during 1960 to personnel training. Three courses in venereology were attended by 70 physicians; two courses in syphilis serology, by 22 laboratory technicians; and one venereology course for contact investigators, by 12 nurses. Progress was made in bringing uniformity into the operations of venereal disease clinics and in coordinating the venereal disease control activities of the various medical care and public health agencies.

A venereal disease control program prepared by the Jamaica Health Department, the primary purpose of which is the control of syphilis and gonorrhoea in the areas of

Kingston and St. Andrew, was submitted to the Organization for study.

Four laboratories in the Caribbean area—the Central Serological Laboratory of Venezuela, one Dutch, and two British—have now adopted the VDRL test as a standard procedure for the serological diagnosis of syphilis. During the year, these four laboratories were admitted to participation in the evaluation study of the accuracy of the results obtained with the VDRL test that is being made by the Venereal Disease Research Laboratory of Atlanta, Georgia, U.S.A. One of them, the Caribbean Medical Center in Port of Spain, Trinidad, also serves as the center for the evaluation of the VDRL tests made in the laboratories of the neighboring British islands.

Tuberculosis

While the extent of the tuberculosis problem in the Americas as a whole, and in specific areas, is not fully known, available data indicate that the disease is still an important public health problem in this Hemisphere. Tuberculosis continues to be one of the important causes of morbidity, incapacity, and mortality in the Americas, and although there has been a marked decline in the death rate in many countries, the reduction in the number of cases has been much less dramatic.

The public health approach to the tuberculosis problem has radically changed since the introduction of chemotherapy. By preventing noninfectious cases from becoming infectious and by rendering infectious cases noninfectious, the antituberculosis drugs considerably reduce the public health problem. The large-scale application of chemotherapy may lead to a reduction in the need for the isolation of patients in hospital beds. This development would mean that it might be possible to reduce the cost of tuberculosis programs and, consequently, to extend them more widely.

In the past, most of the Organization's collaboration in this field took the form of assistance to the Governments in their mass BCG vaccination campaigns. In the last two years, however, the emphasis has shifted and is now placed on better organization of dispensaries, special attention being given to chemotherapy and chemoprophylaxis, which now rank high among public health measures against tuberculosis.

In order to help the Governments to make the best possible use of these new developments, the Organization's tuberculosis control program is directed to four main fields of interest, namely:

(1) Training of national personnel in the new anti-tuberculosis techniques and procedures. This is being done through the award of fellowships to selected personnel for study abroad, and in-service training in tuberculosis prevention projects.

(2) Assistance in the establishment of national pilot area projects, including prevalence surveys, case-finding and treatment, and BCG vaccination. The purpose of these projects is to establish a tuberculosis control program in a well-defined area, covering a population of about 100,000-200,000, where public health services already exist. The general objectives of these projects are:

(a) To ascertain the extent of the tuberculosis problem in the area and to estimate the prevalence of tuberculosis in the different parts of the area and in different population groups.

(b) To establish a base line for future assessment of the tuberculosis control measures adopted in the area.

(c) To study the various means and methods which will have to be applied to ensure that the pattern of organized tuberculosis services is adapted to local conditions, regard being had to the actual possibilities of the country and the degree of development of the public health services.

(d) To train national personnel.

(e) To assess the cost of specific control measures and their effectiveness in reducing the extent of the tuberculosis problem, with due regard to the financial possibilities of the country concerned.

(3) Survey of the tuberculosis situation in the different countries, including the study of present trends in morbidity and mortality from the disease, the assessment of the physical facilities and trained personnel that could be used for an effective program, the evaluation of needs, and the recommendation of possible ways of meeting them.

(4) Field trials of mass administration of isoniazid in order to determine the possibilities of this technique of mass tuberculosis control.

The appointment of a Regional Consultant on Tuberculosis in mid-1960 has stimulated the work in this field. However, difficulties encountered in recruiting suitable tuberculosis consultants to help national control projects is delaying the assistance to be provided by the Organization.

A survey to determine the prevalence of tuberculosis in Argentina was begun during the second half of the year when the consultants of the Organization arrived and the training of local personnel began. The program was developed in the Province of El Chaco, where from 8,000 to 10,000 persons are to be examined in the First Health District. Tuberculin testing is being carried out in 4 per cent of a total of 84,000 school children in urban and suburban areas. It is expected that the survey in El Chaco Province will be completed early in 1961.

The Organization cooperated with the Government of Argentina on a preliminary study for the development of a National Tuberculosis Center, which would have the following objectives:

(1) To establish a school for the theoretical and practical training of the staff who will work in the national tuberculosis campaign.

(2) To bring uniformity into the methods and terminology used in tuberculosis control activities.

(3) To study and assess these methods and techniques in an urban and rural demonstration area.

(4) To provide continuous advisory services to the provinces on tuberculosis programs with regard to planning, execution, and evaluation.

(5) To make investigations on the epidemiology of tuberculosis in the country.

The Organization has also cooperated with the Government of Brazil in the preparation of a plan for a tuberculosis prevalence survey to be carried out in the State of Rio Grande do Norte during 1961, with the assistance of UNICEF. The survey will begin in the capital of the state and will subsequently be extended to several municipalities where good health services exist. Tuberculosis control activities can begin once the results of the survey have been evaluated.

Tuberculosis is an important public health problem in Colombia, even though mortality rates have been decreasing since 1945. Between 1945 and 1952, the mortality from all forms of tuberculosis decreased from 45.6 to 30.8 per 100,000 inhabitants, and that from pulmonary tuberculosis from 40 to 27.7. Except in 1953, mortality rates remained practically stationary and in 1957 mortality from all forms of tuberculosis was 27.3 and that from pulmonary tuberculosis was 23.9. The tuberculosis morbidity per 100,000 diminished from 167.6 in 1948 to 119.3 in 1959.

It should be pointed out, however, that this constitutes but one part of the problem, for there are reasons to believe that an undetermined number of persons fail to come to the attention of the medical services or of the agencies in charge of statistical records.

In view of the fact that a thorough knowledge of the epidemiology of tuberculosis in Colombia is essential for the formulation of a well-oriented national tuberculosis program adjusted to the needs of the country, the Government has asked for the cooperation of the Organization in making an epidemiological survey of tuberculosis and in preparing a control program based on that survey.

The Government of Cuba requested cooperation from the Organization and from UNICEF for a large-scale tuberculosis control program. After a visit to that country, the Regional Consultant prepared a preliminary report on the matter.

The preparation of a tuberculosis survey and control program in Mexico was completed. The training of national

staff, both in the country and abroad, and the arrival of the equipment provided by UNICEF will make it possible to begin the campaign early in 1961. The Organization awarded a one-year fellowship, followed by two months' observation in Africa, to a physician; and three-month fellowships for observation in certain African countries to a public health nurse and a statistician. Regrettably, difficulties encountered in recruiting an international consultant delayed the initiation of this program.

In Peru, tuberculosis is a serious public health problem despite the efforts of official and private agencies to control the disease. Although tuberculosis mortality per 100,000 diminished from 163 in 1950 to 54 in 1958, a parallel reduction in the number of patients has not been possible and, according to official statistics, the number of these has remained stationary. Surveys made in urban communities revealed a prevalence of 2.34 per cent.

There are 2,900 beds for tuberculosis patients, 21 dispensaries, and 6 mobile X-ray units available in Peru, but they are not sufficient and are not properly distributed throughout the country. The intensification and expansion of control measures are therefore required. To this end, the Government has asked the Organization and UNICEF for collaboration in a program to ascertain the epidemiological characteristics of tuberculosis and its prevalence in the country, as the initial phase of a general tuberculosis campaign plan.

BCG vaccination campaigns were actively continued in the Dominican Republic and are expected to be completed by the end of 1961.

The program under way in Guatemala was continued during 1960. The objective of this experimental program is to verify the efficacy of isoniazid in domiciliary and out-patient treatment as well as in the chemoprophylaxis of contacts. The results of experience acquired in the Departments of Escuintla and Santa Rosa were extended to the Guatemala City suburbs of La Florida and Santa Marta. It is expected that it will be possible to increase these program activities in 1961 to include an international short course.

Chagas' Disease

Chagas' disease is known to occur in all the countries of the Americas, with the exception of Canada and probably Cuba, but its true incidence has not yet been determined. The number of persons exposed to infection by

Trypanosoma cruzi is estimated at 35 million; if the average of the infection rates obtained in epidemiological surveys carried out in several countries is taken as 20 per cent, it may be calculated that at present there are at least seven

million people infected with *T. cruzi*. Existing data show that the economic harm caused by the disease must be very considerable: the incapacitating symptoms of the chronic forms of the disease occur in the second half of life when the individual is making his greatest contribution to society; the disease is principally found in rural areas where it often renders those affected incapable of the heavy physical work demanded of them; and the cost of hospitalization and subsequent rehabilitation of patients is high.

It was against this background that a Study Group composed of specialists from the countries of the Americas met in Washington, D.C., from 7-11 March 1960 to discuss the importance of Chagas' disease in public health.

In its Report, published as World Health Organization Technical Report Series No. 202, the Group recommended survey methods for obtaining a better knowledge of the disease and specified the most suitable investigations, evaluated current diagnostic procedures and available methods of treatment, and discussed control and prevention measures. In conclusion it drew attention to the considerable scope for intercountry coordination that the control of Chagas' disease affords.

Bearing in mind the conclusions reached by the Study Group the Organization will develop, within its financial possibilities, pertinent activities for the study and control of Chagas' disease.

Leprosy

In order to promote and coordinate effectively the leprosy campaign in the Americas, detailed studies of the magnitude and extent of the problem are required.

Surveys have therefore been progressively carried out in the various countries and territories of the Region for the primary purpose of gaining a better knowledge of the problem and of the human and physical resources available. At the same time, countries were also given help in the organization of their leprosy control programs.

A consultant completed surveys in Surinam and Trinidad in 1955, and in British Guiana, French Guiana, Grenada, Guadeloupe, Martinique, and St. Lucia in 1956. In 1951 studies were begun in Bolivia, Colombia, Ecuador, Paraguay, and Peru, and in 1958 in Argentina, Costa Rica, Jamaica, and Uruguay. During 1959 the consultant made surveys in British Honduras, El Salvador, Honduras, Mexico, Nicaragua, and Panama. During 1960, the earlier surveys made in Bolivia, Ecuador, and Peru were brought up to date.

The Zone III Office consultant has been cooperating with the Governments of Central America and Panama in the preparation of leprosy control programs.

In Guatemala, Nicaragua, and Panama he collaborated in improving the organization of national leprosy services, and in El Salvador and Honduras in establishing this kind of service. The service in Honduras is already in operation and it is hoped that the service in El Salvador will begin to function early in 1961. In Costa Rica, where a good service already existed, case-detection, early treatment, and effective contact surveillance are in the process of being improved.

Recent intensified case-finding shows that the prevalence of leprosy is higher than it was in 1959. In Guatemala, where 85 cases were known to exist, 27 new cases were detected in a preliminary survey that covered only 12 of the 22 departments of the Republic. In Honduras, where there were 47 known cases, a brief survey in a single department brought to light 11 new cases. As a result of similar surveys, the 153 cases reported in El Salvador up to 1959 increased to 185, and those recorded in Costa Rica rose from 493 to 578 between March 1959 and November 1960.

The integration of leprosy control activities into the regular programs of health centers under the guidance of the national health services was actively promoted during 1960. This, however, is a slow procedure which must be based on the efficient organization of the local services and on the appropriate training of their personnel. The training of medical staff from health centers selected according to known leprosy prevalence was begun in Guatemala and in Honduras. Attempts were also made to draw up for each country a specific plan of operation that made allowances for its financial possibilities, as well as for its traditions, which may be modified or used to advantage, but only slowly and gradually.

A PASB/WHO consultant specialized in leprosy cooperated with the public health authorities of Mexico in preparing and developing a national leprosy control program. The program, which was planned in accordance with the most modern ideas on the subject, was a modification and extension of what the country had been doing in this field. To carry out the program, the Government has requested material assistance from UNICEF.

In Colombia, on 31 December 1959, there were 11,183 leprosy patients in 16 departments with a total estimated population of 14,319,051. This represents a prevalence of 0.78 for every 1,000 inhabitants. Table 17 shows the leprosy prevalence of each department.

The prevalence of this disease varies from department to department, the Department of Chocó with 0.10 having the lowest and the Department of Santander with 3.74 the highest.

Leprosy cases concentrated in the Departments of Norte de Santander, Boyacá, and approximately the eastern half of Cundinamarca total 7,082 in an estimated population of 2,366,537; 66.2 per cent of these patients have the lepromatous form of the disease. Thus 63.3 per cent of the known cases occur in 7.6 per cent of the total area of the country and among 16.1 per cent of its population; the prevalence per 1,000 is 2.9 and the density per 100 square kilometers is 8.1 patients.

The percentage of lepromatous forms ranges from 53.8 in Nariño Department to 84.6 in Huila Department. These figures indicate the risk of a rapid spread of the disease.

In 1960 the Organization appointed a consultant specialized in leprosy to collaborate with the Government of Colombia in the study, preparation, and development of a national leprosy control program. This program, which was elaborated after careful study, calls for the reorganization and extension of the existing services, and has been submitted by the Government to UNICEF for consideration. Material support for the program is being requested from both UNICEF and the Organization.

Previous studies made on the status of leprosy in Bolivia, Ecuador, and Peru were brought up to date by a PASB/WHO leprosy consultant.

The National Leprosy Department of Bolivia had records, as of 30 August 1960, of 1,015 patients, of which 34.48 per cent had the lepromatous form of the disease, 60.09 per cent the tuberculoid form, and 5.41 per cent indeterminate forms. In 1956 the number of known cases was 810, which shows that in a period of four years the number of cases increased by 205. In a survey made in different areas of the country, during which 6,014 persons were examined, 56 new cases were detected. The clinical forms were as follows: lepromatous, 26.78 per cent; tuberculoid, 48.21 per cent; indeterminate, 23.21 per cent; and borderline, 1.78 per cent.

The number of inhabitants examined during the 1960 survey and the number of cases discovered, by departments, is shown on Table 18.

The results of this survey indicate that the departments surveyed must be regarded as having a high and important leprosy endemicity.

In 1960 there were 659 known cases of leprosy in Ecuador, 78.6 per cent of which were of the lepromatous form, 18.8 per cent tuberculoid, and 4.3 per cent indeterminate. A survey covering 6,730 persons (4,547 on the coast and 2,183 in the mountains) led to the detection of 82 cases

TABLE 17. DISTRIBUTION OF LEPROSY IN COLOMBIA, BY DEPARTMENTS,* 31 DECEMBER 1959

Departments	Population	Reported cases	Prevalence (per thousand)	Lepromatous forms (per cent)
Antioquia	1,971,980	240	0.12	72.0
Atlántico	587,590	280	0.47	66.0
Bolívar	784,267	321	0.40	74.1
Boyacá	670,267	2,340	3.49	72.8
Caldas	1,338,600	489	0.36	77.3
Cauca	513,000	256	0.49	58.5
Chocó	146,143	16	0.10	62.5
Córdoba	411,410	109	0.26	76.1
Cundinamarca	2,258,970	1,328	0.58	81.3
Huila	365,230	182	0.49	84.6
Magdalena	538,964	223	0.42	71.3
Nariño	618,840	260	0.42	53.8
Norte de Santander	522,800	865	1.65	65.3
Santander	875,910	3,280	3.74	59.2
Tolima	852,160	392	0.46	78.3
Valle	1,862,920	602	0.32	67.4

* Fifteen cases were reported in the rest of the country.

TABLE 18. LEPROSY CASES DISCOVERED IN THREE DEPARTMENTS OF BOLIVIA, 1960

Departments	Population examined	Cases discovered	Prevalence (per thousand)
Total	6,014	56	9.311
Beni y Pando	2,474	24	9.700
La Paz "Sud Yungos"	317	1	3.154
Santa Cruz	3,223	31	9.618

(71 on the coast, 11 in the mountains) of which 40.24 per cent were of the indeterminate form, 34.13 per cent tuberculoid, and 23.17 per cent lepromatous. According to the results of this study, the prevalence is 15.6 per thousand in the coastal area and 5.0 per thousand in the mountain area.

In Peru, according to data available in the Leprosy Division of the Ministry of Public Health, on 31 December 1959 there were 8,848 registered cases, 1,078 of which were under surveillance. Of the known cases, 85.16 per cent were from the jungle area and 10.7 per cent from the mountain area. Prevalence in the jungle area was 6.1 per thousand and in the mountain area 2.5 per thousand.

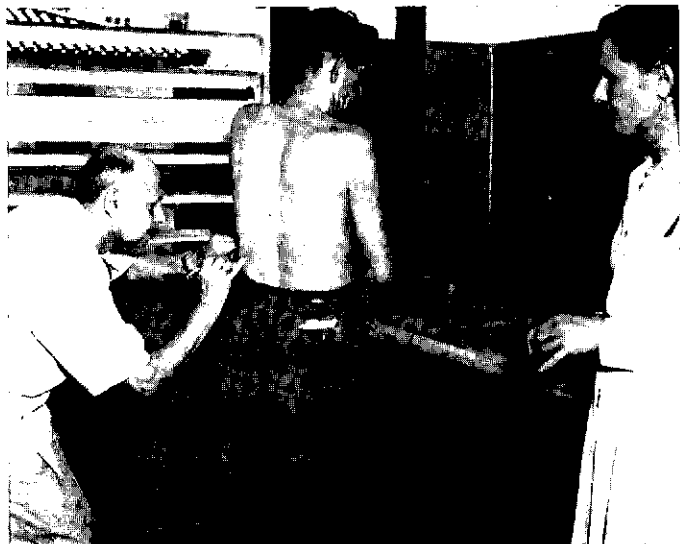
In a study made in the Department of Loreto, in which 10,407 persons were examined, 68 new leprosy cases were detected. A similar study made in Apurímac Department

led to the detection of 2 new cases among 1,606 persons. According to these figures, leprosy prevalence would be 6.5 per thousand in Loreto and 1.2 per thousand in Apurímac.

Of the new cases discovered in these studies, 44 were under 19 years of age, 33 of which had the indeterminate form.

The leprosy control program in Paraguay, the incorporation into the regular health services of which began in 1959, continued to develop progressively. A demonstration area was set up. The number of new cases detected in the entire country up to October 1960 was 162, with the following distribution of clinical forms: lepromatous, 50.6 per cent; tuberculoid, 24.7 per cent; and indeterminate, 24 per cent. Six of the new cases were under 14 years of age.

The total number of cases recorded up to 31 October 1960 was 3,452. During the first half of 1960, 53.3 per cent of the known cases and 9 per cent of their contacts were under surveillance. These figures represent a 14.1 per cent increase in the number of patients under surveillance and a 2.8 per cent increase in the number of contacts under surveillance, as compared with the second half of 1959. To ensure that no cases escape periodic examination and that a review of contacts may be made as often as is desired, it will be neces-



A doctor of the Leprosy Control Service of Paraguay making a biopsy.

sary to perfect the working methods now in practice. Some way must also be found to ascertain whether the medication given to domiciliary patients is actually consumed according to the instructions given them. Financial and transportation difficulties hampered activities during the year.

The extent and magnitude of the leprosy problem in Argentina is not exactly known, but the fact that 10,321 cases were registered by the end of 1957 shows that the disease constitutes a serious public health problem. Although leprosy exists throughout the country, its prevalence varies from province to province. The largest number of cases, however, are concentrated in the northern region, particularly along the Pilcomayo, Paraguay, and Paraná rivers.

A review of the clinical histories of 2,567 patients made in 1959 showed that 47.21 per cent had the lepromatous form of the disease; 32.21 per cent the tuberculoid form; 11.21 per cent the indeterminate form and 9.36 per cent were borderline cases. Most of these patients were in the 20-30 age group, and 59.68 per cent of them were female.

The Organization cooperated in the preparation of a national leprosy control program, which was completed in 1960; the first stage, consisting of personnel training, began during the year. UNICEF will provide laboratory equipment, medication for the treatment of cases, and 25 vehicles for field work; and PASB will continue to provide technical advisory services through a specialized consultant and through the staff of its Zone VI Office.

In Brazil, whose estimated population on 1 July 1959 was 64,679,000 persons, leprosy is a serious public health problem. The disease is distributed throughout the entire country. Available data show a prevalence of 2 per 1,000 inhabitants, the highest prevalence—5.7 per 1,000—occurring in the northern part of the country.

Between 1946 and 1959, 76,582 new cases of leprosy were registered, representing an annual average increase of 5,470 cases. Of these, 5 per cent are children under 10 years of age. The clinical forms are distributed as follows: lepromatous, 57.2 per cent; indeterminate, 22.2 per cent; and tuberculoid, 20.6 per cent.

The text of an agreement between the Government of Brazil, PASB, and UNICEF, was completed in 1960, the purpose of which is to expand and intensify the leprosy control program which the country has been carrying on for years.

Poliomyelitis

Second International Conference on Live Poliovirus Vaccines

The accumulation of information through intensive studies of the properties of attenuated live polioviruses and extensive field investigations in many countries of their use as immunizing agents progressed so rapidly after the PAHO/WHO conference on this subject in 1959, that the Second International Conference on Live Poliovirus Vaccines was held in Washington, D.C., from 6-10 June 1960. As before, it was sponsored by PAHO/WHO with the cooperation of the Sister Elizabeth Kenny Foundation. Forty-five papers were presented and discussed in detail by 85 scientists from 20 countries. Large field trials involving many millions of persons carried out in 13 countries were reported by 24 groups of investigators.

The complete printed proceedings of this conference were issued by the Organization within eight weeks of the closure of the meeting (PAHO Scientific Publication No. 50).

Field evidence of safety of the oral vaccine. The official Summary of the Conference stated that "untoward reactions were either absent or insignificant and the so-called major illness of poliomyelitis had not either directly or indirectly been induced by infection with attenuated poliovirus used as a vaccine. Nor had the progeny of the vaccine virus induced harmful effects as it spread in the local community."

Spread of attenuated polioviruses. The Summary indicated that, in households where infants were fed the vaccine, the intrafamilial spread to contacts ranged from 40 to 80 per cent. The spread involved not only susceptible contacts but to a lesser degree those who were homotypic immunes. The interfamilial spread was much less extensive.

Premature and full-term babies. Several papers dealing with premature and full-term babies, vaccinated shortly after birth, emphasized that the vaccine can be safely administered at this age, although the percentage of successful "takes" is smaller than in babies who are fed the attenuated viruses at four months of age or later. In the newborn the period of virus excretion in the stool is shorter and the antibody response is of lesser magnitude than in the older infant, high levels of maternal antibodies possibly being an important factor in modifying or masking the antibody response on newborn infants.

Pregnant women. A group of investigators who vaccinated women in all stages of pregnancy reported no untoward effects to the mother or harmful effects to the fetus.

Interference. Some studies pointed out that the interference of one type of poliovirus with the immunizing effect of

other types in polyvalent vaccines can be overcome by increasing the virus content of the vaccine. Evidence was brought forth by one study in a tropical setting that interference by coexisting enteroviruses is apparently surmounted by a second dose of the polyvalent vaccine.

Many large field programs, particularly in the Union of Soviet Socialist Republics, were immediately followed by low rates of incidence of the disease, a finding compatible with the use of an effective vaccine. However, because of the known variability of the epidemiology of poliomyelitis, attention was drawn to the need for longer periods of observation before the efficacy of the oral vaccine in preventing paralytic poliomyelitis can be definitely established.

Evidence of the safety and efficacy of the live poliovirus vaccine submitted to the two Conferences, a meeting in Moscow in May, and the Fifth International Congress on Poliomyelitis, held in Copenhagen in late July, prompted the Surgeon General of U.S. Public Health Service, on 24 August, to approve this new method of immunization against poliomyelitis and to select the strains of attenuated polioviruses developed by Sabin as a reference standard for the commercial production of the oral vaccine. It is expected that substantial supplies of the commercial vaccine will be available by the fall of 1961.

Live Poliovirus Vaccine Studies

Colombia. At the request of the Minister of Health of Colombia the Organization collaborated with the health authorities of Cúcuta, Envigado, Zipaquirá, Barranquilla, Sogamoso, and of the Special District of Bogotá, in a vaccination program in these areas aimed at the immunization of the population under five years of age. The program started on 11 July and, by the end of the year, 225,771 children, or approximately 90 per cent of the eligible age group, had received a single dose of Lederle's trivalent vaccine. For the purpose of studying the distribution of naturally occurring poliomyelitis antibodies in this population, 1,098 random blood samples were collected in Bogotá, prior to the administration of the vaccine, from children of six months to 10 years of age. The antibody response to the vaccine is being measured in 727 paired blood samples obtained immediately before and from 4 to 6 weeks after vaccination. Preliminary results based on 169 of these pairs indicated conversion rates of 87.7, 48.8, and 95.4 per cent for poliovirus Types 1, 2, and 3, respectively. No untoward reactions to the vaccine were noted during observations

Second International Conference on Live Poliovirus Vaccines, held 6-10 June 1960 in Washington, D. C., under sponsorship of the Organization with the cooperation of the Sister Elizabeth Kenny Foundation.

Upper right: Working Session.

Below: Participants and observers.



extending up to three months after the completion of the program.

Costa Rica. The nation-wide vaccination program in Costa Rica was completed during 1960. By 31 October 305,959 children under 11 years of age had been fed Lederle's live poliovirus vaccine; 120,327 received the three types of virus as monovalent vaccine and 185,632 as trivalent. Approximately 80 per cent of the population in the selected age group as of 31 December 1959 were thus covered. The coverage in the Province of San José, where one third of the population of the country lives, was 90 per cent. On the basis of 828 paired blood samples so far studied, the antibody response to the vaccine indicated conversion rates, for Types 1, 2, and 3 of the virus, of 82, 37, and 92 in the monovalent and of 86, 49, and 89 in the trivalent program. The attack rate of the disease for the period March 1959 to October 1960, per 100,000 population, was 6.5 in the vaccinated group and 62.7 in the unvaccinated group.

With these two trials, the number of children vaccinated under PASB-assisted programs now exceeds 800,000. A review of these programs was presented at the Fifth International Congress in Copenhagen as part of a report on the experience with live poliovirus vaccines in the Americas.

Tissue-Culture Laboratory, Cali, Colombia

During the year, this laboratory continued its support to the vaccination programs with live poliovirus vaccine

being carried out in Costa Rica and Colombia. Viruses in specimens from suspect-cases identified during the surveillance program were isolated and typed and serological studies to measure the antibody response to the vaccine were made. The results obtained were presented at the Second International Conference on Live Poliovirus Vaccines.

Consultant Services

A PASB/WHO Virology Consultant spent one month at the Samper Martínez Institute in Bogotá assisting in the organization of a tissue-culture laboratory, the first step in the development of an expanded department of virology.

In November, at the request of the State health authorities, the PASB/WHO Adviser on Poliomyelitis visited São Paulo, Brazil, during an epidemic due to Type 1 poliovirus. Up to 24 November, 654 paralytic cases, 91 per cent of which were children under 3 years of age, had been reported in the city. To acquaint the health authorities with this new approach to preventing future epidemics of poliomyelitis, the Organization was asked to assist in setting up and implementing an oral vaccination demonstration program in São Paulo. According to present plans, a program covering 25,000 children under 3 years of age will be initiated in May 1961.

Other Communicable Diseases

Influenza

Influenza outbreaks occurred throughout the United States of America shortly before the beginning of 1960. Few and isolated to begin with, they increased in number and intensity until most of the states were affected. Maximum incidence was observed in early February and was accompanied by high mortality from pneumonia and influenza, especially in the southwest of the country.

The etiology was mixed; the predominant virus was Type A₂ (Asian), which is undistinguishable from that which caused the pandemic of 1957-1958, but in a few sporadic cases Types A₁ and B were isolated.

At the same time of the year, influenza outbreaks also occurred in Canada, El Salvador, Guatemala, Mexico, and the Netherlands Antilles, but these outbreaks at no time attained serious proportions.

The symptomatology of the disease in the Americas and in the epidemics that appeared almost simultaneously

on the European continent and in several areas of Asia and Oceania, was characteristic of the usual clinical signs of influenza. The illness rarely lasted more than five days. Deaths were caused by respiratory complications and usually occurred among the very young or the very old.

Although the occurrence of epidemics in other parts of the Western Hemisphere was not verified, one strain of Type A₂ virus was isolated from a typical sporadic case by the Adolfo Lutz Institute, the WHO Influenza Center in São Paulo, Brazil.

The Organization helped to keep the health authorities and other institutions in the countries informed about the evolution of the epidemic by periodically issuing influenza reports.

In order to take part in the discussion on the influenza pandemic of 1957 in Middle and South America, the Director of the Bureau and WHO staff members attended the International Conference on Asian Influenza, held from 17-19

February at the National Institutes of Health, Bethesda, Maryland.

Within the WHO influenza program, the Region of the Americas, in addition to being the site of the International Influenza Center operated by the U.S. Public Health Service in Atlanta, Georgia, also receives cooperation from several other influenza centers located in Argentina, Brazil, Canada, Chile, Jamaica, Puerto Rico, and the United States of America. The International Center collects information from other centers in the Western Hemisphere, coordinates their activities and provides them with virus strains, antigens, and with antisera for the etiological diagnosis of the disease. The centers, for their part, are responsible for reporting the presence of influenza in a given country or area, for estimating the importance of the outbreak, and for identifying the causal agent either through the isolation and classification of the virus or, when this is not possible, through serological tests. Such tests may be essential for combating especially severe and extensive epidemics produced by new types of virus.

Mycotic Diseases

In the past few years interest in this group of diseases has been growing in several countries in the Americas. In addition to superficial mycoses which are especially prevalent in the urban population, and the increase in moniliasis owing to the more extensive use of antibiotics, deep mycoses either visceral or subcutaneous have been receiving the attention of mycologists and clinicians.

With a view to increasing the present limited knowledge of the severity and extent of deep mycotic infections, particularly South American blastomycosis, histoplasmosis, and coccidioidomycosis, the Directing Council at its XI Meeting adopted a resolution proposed by the delegation of Venezuela, recommending that Member Countries establish national coordinating committees for the study of mycoses and undertake epidemiological surveys as a means of ascertaining the magnitude of the problem in the Americas. In keeping with the spirit of these recommendations, the countries of the Region were consulted regarding their activities in this field and the interest of their public



Fig. 12. Influenza Centers in the Americas.

health services in the problem of mycoses. By the end of 1960 only a few replies had been received, and most of them attributed only limited importance to mycoses in comparison with other public health problems of recognized urgency.

An attempt was recently made to take advantage of surveys to determine the prevalence of tuberculosis, for example that undertaken in Argentina, in order to study cutaneous reactions to histoplasmin in the part of the population examined.

Veterinary Public Health

Rabies

Rabies is indigenous and remains a problem of some magnitude in all the countries of the Region with the exception of Uruguay. In that country the last case in man was reported in 1947 and the last in animals in 1949; since then, all animals diagnosed as rabid have been found to be recent visitors from neighboring countries. In the other countries the extent and nature of the problem varies. Rabies in the domestic dog is the most prevalent problem, but wildlife rabies including bat rabies is also of major importance. In countries such as Mexico, Colombia, and Brazil, bat rabies

in cattle created rather serious socio-economic problems. In Panama, rabies was reported in cattle and, in one instance, in a horse; these cases were presumably caused by rabid bats. Some bats captured in Panama and in the Canal Zone were positive to the rabies antibody test.

The excellent program for a single coordinated antirabies campaign covering the countries of Central America and Panama, which was launched after an intercountry agreement in 1958, received less attention in 1960; and although the central reporting of rabies cases instituted in 1959 was continued, dog control and vaccination activities diminished markedly. Table 19 shows the cases of rabies reported by those countries during the year.

As in previous years, the Organization provided national laboratories and institutes with production and control strains of rabies virus as well as standard vaccines and serum, and PASB/WHO Veterinary Public Health Advisers gave advice on the establishment or conduct of national and local antirabies programs, improvement of diagnostic procedures, and production and testing of rabies vaccines and hyperimmune serum.

In Brazil the establishment of interdepartmental committees composed of representatives of the ministries of health and of agriculture proved an extremely useful means of avoiding the duplication, and of ensuring the coordination, of work in the field.

Emergency Services

Emergency services were given on several occasions during 1960 in connection with rabies problems. In response

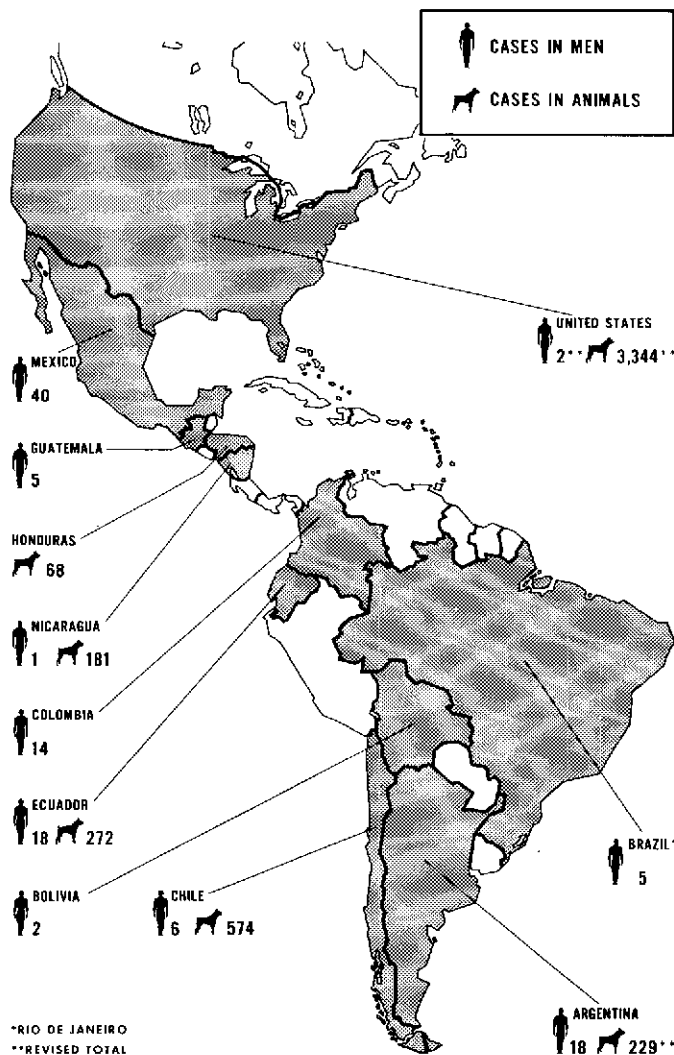


Fig. 13. Countries Reporting Rabies in the Americas, 1960.

TABLE 19. REPORTED CASES OF RABIES IN THE COUNTRIES OF CENTRAL AMERICA AND PANAMA DURING 1960

Country	Human	Dog	Cattle	Bats	Cats	Other	Total
Total	6	144	28	29	5	3	215
Costa Rica	—	—	2	—	—	—	2
El Salvador	2	11	10	—	—	—	23
Guatemala	4	98	2	—	2	—	106
Honduras	—	18	3	2	1	2 ^{a, b}	26
Nicaragua	—	17	7	—	2	—	26
Panama	—	—	4	27	—	1 ^b	32

— None.

^a Pig.

^b Horse.

TABLE 20. RABIES ACTIVITIES IN MEXICALI VALLEY/IMPERIAL COUNTY UP TO THE END OF OCTOBER 1960

Area	Estimated Population		Estimated stray dogs eliminated	Estimated dogs vaccinated	Persons		Rabid Dogs		
	Human	Dog			Bitten	Treated	Laboratory confirmed	Clinically diagnosed	Total
Total	296,000	36,300	9,543	18,593	1,055	774	109	303	412
Mexicali (Mexico)	225,000	24,000	5,284	10,811	870	670	71	137	208
Imperial County (U.S.A.)	71,000	12,300	4,259	7,782	185	104	38	166	204

to official requests, the Emergency Procurement Revolving Fund was used to furnish both human and animal rabies vaccine, hyperimmune serum, and dog control supplies for use in rabies outbreaks. Another type of emergency service—immediate technical advice—was provided during the year in connection with a canine rabies epidemic in the southern part of California, U.S.A., and the northern part of Lower California, Mexico. At the request of the health officials concerned, the PASB/WHO advisers from the El Paso and Zone II Offices took with them to the area a small amount of rabies vaccine and dog control supplies and thus enabled activities to begin without delay and continue until the arrival of nationally purchased supplies.

In the course of the outbreak, 412 rabid animals were reported, 1,055 persons were bitten and 774 persons were given antirabies treatment. The source of the rabies virus introduced into the canine population of the area is not known, but previous evidence of rabies in local cattle and bats appears to indicate that the disease is endemic in the wildlife of the area and may have been transmitted to the domestic dog population by coyotes and feral dogs.

Other Activities

During the year the Bureau prepared a brochure, "Rabies—Treatment of Man," in English, Spanish, and Portuguese. This publication, which is to be issued in 1961, consists of an excerpt from the Fourth Report of the WHO Expert Committee on Rabies (*Wild Hlth techn. Rep. Ser.*, 1960, 201) and includes a Guide for Specific Post-Exposure Treatment.

PASB/WHO field staff helped national health authorities with a WHO questionnaire requesting information on the incidence of rabies and rabies control measures.

Brucellosis

Brucellosis in man and in animals continues to be a problem of public health and economic importance in all the countries of the Hemisphere. During 1960, the frequency of the disease appeared to be in direct proportion to the interest taken in it by the health and agriculture officials and the clinicians of the country concerned. Table 39 of *Reported Cases of Notifiable Diseases in the Americas*,

1949-1958 (PAHO Scientific Publication No. 48) shows that while some countries report cases in both animals and man most countries report only the one or the other. In one country the average number of human cases reported each year was about 1,000; it is therefore reasonable to believe that there were also many animal cases, yet none were reported. What the total picture might be if those concerned with human and with animal disease gave brucellosis due attention is not difficult to imagine. Nevertheless, there were many indications during the year that interest in brucellosis is increasing in some countries; most public health workers are now of the opinion that the most practical way of preventing human brucellosis is to control or eradicate the disease in animals.

Canada and the United States of America vigorously continued their bovine brucellosis eradication programs during 1960. The program in Canada is in operation in all provinces and approximately one third of the cattle in the country are under test. The U.S. Department of Agriculture reported that by the end of December the national eradication program was active in approximately 77 per cent of the counties in the country, and that all counties are expected to participate by 1964. Brucellosis testing in the U.S.A. during the year revealed that about 32,000 herds included infected animals; 135,733 animals were classified as reactors.

In Argentina a bovine eradication program was launched during 1960 by the Ministry of Agriculture with the collaboration of the Ministry of Welfare and Public Health, the Board of Administration of the Fund for the Promotion of Economic Development, and the Pan American Zoonoses Center. This national eradication program was initiated in the Province of Buenos Aires in a pilot area consisting of three "Partidos" with one million head of cattle.

In the countries of Central America, brucellosis testing of cattle has been in progress for three years and some of the results of this work are summarized in Table 21. Although the numbers of cattle tested are relatively low, it is evident that the disease exists in all the countries. Vaccination programs are in operation in each country.

Laboratory Work

Laboratory diagnosis and vaccine production are key activities in any brucellosis program. To help the countries

TABLE 21. BRUCELLOSIS IN COUNTRIES OF CENTRAL AMERICA AND PANAMA, 1958-1960

Country	Animals serologically tested and percentage of total population						Reactors found and percentage of cattle tested					
	1958	Per cent	1959	Per cent	1960	Per cent	1958	Per cent	1959	Per cent	1960	Per cent
Total	52,577	0.93	136,806	2.44	58,843	1.06	2,381	4.52	4,283	3.12	2,144	3.60
Costa Rica	7,464	0.94	30,240	3.8	14,153	1.77	621	8.32	1,941	6.42	1,141	8.06
El Salvador	4,639	0.58	4,320	0.54	14,087	1.76	501	10.80	486	11.25	177	1.25
Guatemala	5,221	0.5	5,220	0.5	10,248	1.0	703	5.34	283	5.42	388	3.78
Honduras	16,888	1.50	8,860	0.8	3,059	0.27	82	0.45	76	0.86	23	0.75
Nicaragua	5,292	0.44	80,000	6.66	9,001	0.75	172	3.25	1,312	1.64	167	1.85
Panama	13,073	2.22	8,166	1.4	8,295	1.42	302	2.31	185	2.27	248	2.98

in this work, the Organization has periodically provided fresh cultures of *Brucella* strains for the production of different antigens and of vaccine. Sera of specific titers are provided for the standardization of antigens. The items are supplied by PASB Headquarters, or by the Pan American Zoonoses Center which also provides countries with laboratory services. This type of assistance to the countries has been developed as a result of earlier work, carried out by the Organization, which revealed that few of the countries were employing standard materials and techniques in their brucellosis work.

Brucellosis Vaccine

The basis of prevention of human brucellosis lies in the control and eradication of the disease in animals. Although there is at present no known drug which is of practical use in treating brucellosis in animals, the disease can nevertheless be effectively prevented by vaccinating calves just before they reach maturity. During the last decade, Strain 19 brucellosis vaccine has been shown to be an effective immunizing agent in cattle. It is not, however, useful in sheep or goats, both of which are important food animals in some countries as well as sources of human infection.

Research carried on in various parts of the world and coordinated by WHO Headquarters culminated in the Elberg goat vaccine. Field trials of this goat vaccine, produced from living attenuated strain of *Brucella melitensis*, were begun at the Pan American Zoonoses Center in Azul, Argentina, and negotiations were initiated by the Organization's Zone II Office for similar trials in Mexico.

The successful development of this vaccine will do much to eliminate human brucellosis in the areas where many inhabitants live in close association with goats and depend upon these animals for meat, milk, and cheese.

Pan American Zoonoses Center

The research program, educational activities, and technical services of the Pan American Zoonoses Center (PAZC)

in Azul, Argentina, continued to expand during 1960. The increasing recognition that countries are giving to zoonoses problems, and their development of more adequate research and field control programs, is a heartening reflection of the contribution being made by the Center.

Research

Research at the Center is aimed at supplying the necessary data for the development of efficient programs for the control of zoonoses. It also enables graduate students to receive training in the methods and techniques of scientific investigation. Further, it provides for collaboration, where necessary and possible, in zoonoses studies carried on at other institutions.

Studies on the preparation and testing of the Sterne anthrax vaccine were continued, and a new technique for the Ascoli precipitation test was also under study.

A field trial using the Elberg vaccine for goats infected with *Brucella melitensis* was completed; a survey on the extent and nature of the disease in sheep was continued; and studies on a *Brucella*-like organism isolated from ram semen were in progress.

In the field of hydatidosis, the search for an improved method of treating dogs infected with *Echinococcus granulosus* was continued on a limited scale; further work was done on a comparative study of intradermal and laboratory tests for diagnosing human hydatid disease; the evaluation of a fraction of cyst fluid as a possible immunogenic substance in sheep neared completion; and the incidence of the disease in wildlife was explored.

Studies on the epizootiology and epidemiology of leptospirosis and on measures for its control were in progress. In collaboration with national institutions, serological surveys on Q fever in animals and man, using the Luoto capillary tube test, were initiated in Argentina, Chile, Peru, and Uruguay. A study was made of a series of cases of infant diarrhea in order to determine the role of *Salmonella* organisms, and work in trichinosis included a field study

in an epidemic area and small serological surveys in swine and in rats.

Research was also conducted on the development of equipment and methods for the care and breeding of laboratory animals.

Education

The Center offers a combination of field and laboratory training in the zoonoses that is unobtainable elsewhere. The interest and need for such training is evident from the large number of inquiries and applications received.

In 1960 the Organization awarded fellowships to three graduate students from Argentina, Ecuador, and Nicaragua for the advanced study course which the Center began in 1959. In addition, five special students were received for periods varying from one to several weeks. An investigator from Ecuador's national health laboratory and another from an Argentine medical school studied diagnostic, biological production, and research techniques applicable to rabies, leptospirosis and other zoonoses. Scientists from

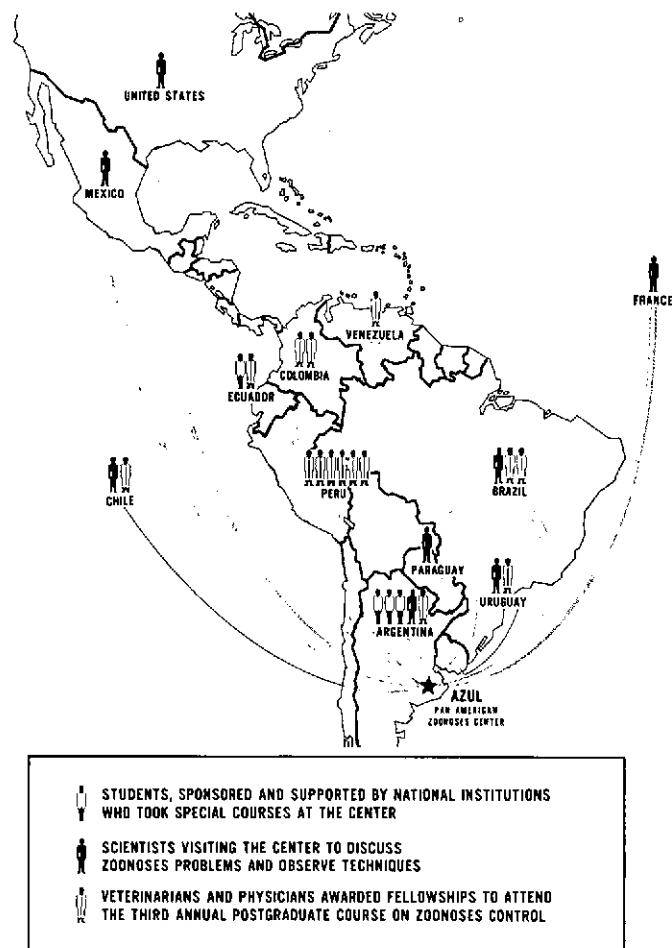


Fig. 14. Country of Origin of Students at the Pan American Zoonoses Center and Visiting Scientists.

two Argentine laboratories studied methods for producing and testing *Brucella* antigens and Strain 19 vaccine. A technician from an Argentine research institute was given a month's training in the care and breeding of laboratory animals. All of these trainees were sponsored and supported by their own institutions.

Scientists from Argentina, Brazil, Chile, France, Mexico, Paraguay, United States of America, and Uruguay, some of whom were supported by PAHO/WHO fellowships, spent periods of varying length at the Center in order to discuss zoonoses problems and to observe applicable techniques.

The Third Annual Postgraduate Course on Zoonoses Control, held in January, was attended by a group of 15 veterinarians and physicians from eight countries. This course is restricted to students who have completed postgraduate studies in public health and intend to devote themselves to the control or study of zoonoses. Most of the students were from ministries of health or agriculture, but some were members of faculties of medicine or veterinary medicine. All were supported by fellowships awarded by the Organization and financed by the Program of Technical Cooperation of the Organization of American States (OAS/PTC).

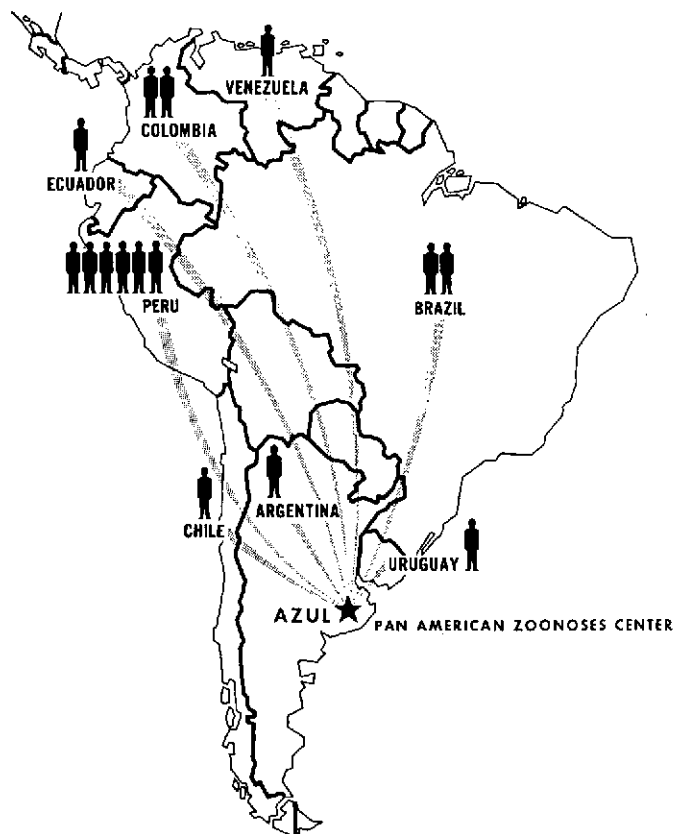


Fig. 15. Physicians and Veterinarians from Countries of the Americas Granted PAHO/WHO Fellowships to Attend the Third Training Course on Zoonoses Control, 1960.

The library and audio-visual aids sections continued to collect and process educational and reference material. Several valuable sets of technical journals from private collections were donated to the Center.

Technical Services

The Center again offered a number of services to the countries of the Americas in support of work being carried out with zoonoses. Consultation was provided both through correspondence and visits.

Field demonstrations on the use of bacterin for controlling bovine leptospirosis and of avianized vaccine for bovine rabies control were continued, respectively, in Argentina and in Paraguay.

Demonstration projects were initiated in Argentina on the use of avirulent vaccine in the control of anthrax in sheep, on the eradication of brucellosis in large dairy establishments, and on the eradication of bovine tuberculosis in individual ranches. Collaboration was given in the planning and preparation of a brucellosis eradication pilot program in an area comprising three counties of the Province of Buenos Aires.

Four issues of the quarterly bulletin *Zoonosis*, which is printed in Spanish, were published during the year. The value of this publication, which is now in its second year, is shown by the many requests received for copies and by the number of articles from it that have been reprinted in other publications of the Americas and of Europe. The third of the Center's Technical Note series, "Preparation and Standardization of *Brucella* Antigens for the Serology Agglutination Test," was issued in Spanish; and summaries of the available information on the distribution and frequency in the Americas of two zoonoses—anthrax and tuberculosis—were completed. Information on a variety of aspects of different zoonoses and bibliographical data were provided on request.

Standard and special strains of microorganisms were prepared and made available for official use. In response to requests from many countries of the Americas and elsewhere, the Center provided five strains of the anthrax bacillus for vaccine production and testing; five strains of *Brucella* for preparing antigen and vaccine and for use as reference strains for identification purposes; twelve *Leptospira* serotype for producing antigens or for preparing specific sera for typing purposes; six strains of rabies virus for vaccine production and testing; and five strains of the tuberculosis organism for tuberculin production or reference purposes.

Limited quantities of antigens, vaccines, and sera were produced and made available for biological standardization and for research and survey purposes. The greatest demand was for *Brucella* antigens for the tube, plate, and milk ring tests. Small batches of Strain 19 vaccine for brucellosis and of the Sterne avirulent vaccine for anthrax, as well as a batch of Casoni antigens for use in a field survey, were pro-



A student from Nicaragua doing graduate work at the Pan American Zoonoses Center, in Azul, Argentina, injects a burro in the preparation of serum for the Ascoli precipitation test for anthrax.

vided. Other biologicals prepared by the end of December for future distribution included serum for the Ascoli precipitation test to diagnose anthrax and reference antirabies serum.

During the year, the Center tested rabies vaccines for Argentina, Canada, and Paraguay; and Strain 19 brucellosis vaccines were tested for several countries. Reference diagnostic services were provided in connection with brucellosis, leptospirosis, rabies, and trichinosis. Table 22 shows the number and type of samples received at the Center's laboratories during 1960.

Personnel and Physical Facilities

There was no change in the international staff, which consists of three scientists and one administrative staff member, but the local personnel, which includes paraprofessional, semiskilled, and unskilled workers, increased from 25 to 28.

TABLE 22. SAMPLES RECEIVED AT PAZC
LABORATORIES, BY TYPE, 1960^a

Type of sample	Number of lots	Number of individual specimens
Total	699	8,522
Material for diagnosis		
Whole animals	281	3,565
Other specimens	387	4,900
Biological products for testing	28	29
Etiological agents for identification	3	28

^a Up to 30 November 1960.

The physical plant proved insufficient for current needs; if in the future the demands of countries for services continue at the present rate, it is evident that the Center will not be able to meet them adequately. Although plans were completed for the construction of the most urgently required facilities—laboratories, experimental animal quarters, and general service accommodations—they could not be implemented for lack of funds. Financial limitations also placed severe restrictions on the quantity and variety of equipment and supplies available for technical operations.

Pan American Foot-and-Mouth Disease Center

The year brought little change in the general situation of foot-and-mouth disease in the Americas. North America, Central America, and the Caribbean area remained free of the disease, but it was present in all the countries of South America with the exception of British Guiana, French Guiana, and Surinam.

The Governments of the infected countries intensified their programs, the ultimate aim of which is the eradication of the disease. In this connection, the most noteworthy event was the planning by Argentina of a national foot-and-mouth disease campaign for which 500 million Argentine pesos have been budgeted. In Chile and in Uruguay, special commissions were recently established to study ways and means of initiating similar campaigns. The Government of Ecuador has also stated its intention to deal drastically with the disease, which is confined to the coastal region of the country. The Center has been closely associated with all these developments.

Research Program

The main emphasis in the Center's research program was again given to the development of a modified live virus vaccine. One of the obstacles to this type of research is the difficulty in obtaining cattle that have not been vaccinated



A medical officer of the Pan American Foot-and-Mouth Disease Center, aided by two farm laborers, removes lesion tissues from the tongue of a steer infected with aftosa.

or exposed to infection in countries in which the disease is enzootic. During the year, steps were taken to overcome this difficulty by the initiation of a collaborative program with the Ministry of Agriculture of Venezuela, which agreed to provide susceptible cattle imported from the United States of America. The first experiment to be undertaken in the Maracay Institute of the Ministry was a comparison of an "O" type strain of Venezuelan origin, modified in the Institute by passage in chicken embryos, with a strain of Brazilian origin passaged in rabbits. When the immunity of the vaccinated cattle was challenged by inoculation of the unmodified Venezuelan virus, the Brazilian strain did not prove so effective as the modified Venezuelan strain. The difference between the apparent potencies of the vaccines may be explained as being due to subtype differences between the two virus strains. It is now planned to experiment further with the modified strain in a government experimental farm in Venezuela.

Collaborative programs of research were continued throughout the year with the Biological Institute of the Board of Agriculture of the State of São Paulo and with the "Desidério Finamor" Institute of Veterinary Investigations, of the Board of Agriculture, Industry, and Commerce of Rio Grande do Sul, Brazil. The former institute is investigating the effect of the inoculation of pregnant cows with modified live virus; and the latter is evaluating modified live virus as a vaccine in swine and sheep. The Center has been active in maintaining contact and exchanging information with the other laboratories engaged in research on these important aspects of foot-and-mouth disease.

Production of killed virus vaccines is of first importance, since the development of a live virus vaccine is still in the experimental stage. Because of the necessity of finding sources of virus for vaccine production other than cattle inoculated before slaughter, the research program of the Center has always included the investigation of techniques of virus culture. The Frenkel technique of using slices of cattle tongue epithelium in suspended culture has been established at the Center for a number of years, and frequent requests are received for the training of laboratory personnel in this method of virus production. More recently, increasing use has been made of tissue-culture techniques, in particular the culture of virus on monolayers of cattle kidney cells. The study of this method, and of many associated problems and applications, has continued to hold an important place in the research program.

Much of the vaccine being produced on a commercial scale in South America is not submitted to adequate tests of potency and of quality control, because of the expense involved in obtaining susceptible cattle and maintaining isolation stables. Another feature of the research program has therefore been the development of tests of vaccine potency in laboratory animals. The first stage in this investigation was successfully reached in 1960 when the Center developed a test in which adult mice and certain modified strains of virus are used. This work is being continued in order to accumulate the necessary data to establish a correlation between the results of tests using mice and cattle.

Training Program

Two training courses were held during the year. One course was held in Bogotá, Colombia, from 5 to 18 June, with the collaboration of the Ministry of Agriculture, the Faculty of Veterinary Medicine of the National University, and the Zooprophyllactic Institute. The purpose of this course was to enable veterinary officers from uninfected areas to become acquainted with foot-and-mouth disease. Lectures were given on the economic importance of the disease, methods of preventing it, and measures to be taken in the event of an outbreak in a country previously uncontaminated. Field work included the study of clinical cases of the disease in cattle and pigs under suitable conditions of isolation. The students attending the course came from the Bahamas, British Guiana, Curaçao, French Guiana, Jamaica, Martinique, Puerto Rico, Surinam, and Trinidad.

The other course was held in Rio de Janeiro, Brazil, from 7 November to 3 December, and dealt with recent developments in the field of modified live virus vaccine. The students were taught laboratory methods used in the modification of virus strains for use as vaccines and the techniques employed in testing vaccines. The final week of the course was attended by the directors of the departments of animal health of the ministries of agriculture of all the infected

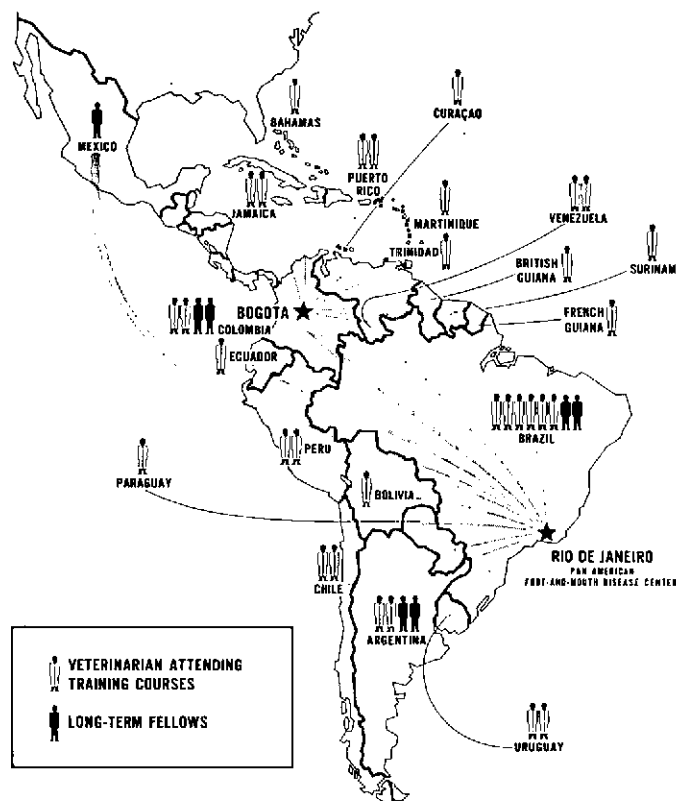


Fig. 16. Countries of Origin of Veterinarians Attending Training Courses on Foot-and-Mouth Disease and Long-Term Fellows Studying at the Center.

countries in the Americas. The 21 students came from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela; 17 of them were supported by PAHO/WHO fellowships.

Of the seven long-term fellows who studied at the Center during the year, 2 came from Argentina, 2 from Brazil, 2 from Colombia, and 1 from Mexico.

Technical Services

Reference Diagnostic Services. About 500 samples of virus were received for examination from Argentina, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Nicaragua, Panama, Paraguay, Uruguay, and Venezuela. All samples from the countries of Central America proved to be from cases of vesicular stomatitis and not of foot-and-mouth disease. The Center also examined 3,980 samples of serum, most of which were from cattle.

As in previous years, virus strains and antisera for typing work continued to be sent, upon request, to laboratories.

Close collaboration was maintained with the World Reference Laboratory on Foot-and-Mouth Disease at Pirbright, England, where the Center's serologist was assigned for two months to study the techniques at present

in use for the identification of virus subtypes and to examine, in collaboration with the staff, certain virus strains of South American origin.

Field Consultations. The routine work of the Center in field consultations continued to expand in 1960. Several staff members made short visits to Argentina, Brazil, Colombia, Chile, Ecuador, El Salvador, Nicaragua, Panama, Peru, Uruguay, and Venezuela. Assistance of more specialized nature was given to Ecuador where further evidence had been obtained of the existence of foot-and-mouth disease in its coastal region. One of the Center's virologists spent two months in Lima, Peru, helping the National Foot-and-Mouth Disease Institute in its production of vaccine by the Frenkel technique.

As mentioned previously, one of the outstanding events of the year was the decision of the Government of Argentina to intensify its foot-and-mouth disease control activities. The campaign being planned will be on a scale never before attempted in South America. In order that the Center may give the maximum assistance, arrangements were completed for the Chief of Field Service to spend three months in Argentina during the opening phase of the campaign. The Center's advice was also sought on obtaining the services of a laboratory consultant for a period of one year, pending the establishment of Argentina's new institute for the control of vaccines and virus typing.

The program of intercountry collaboration involving Colombia, Ecuador, Panama, and Venezuela, which was begun as a result of the International Foot-and-Mouth Disease Conference held from 12-18 April 1959 at Bogotá, continued in 1960. A second Conference was held from 20 to 24 June in Maracay, with the collaboration of the Ministry of Agriculture of Venezuela. Representatives of Colombia, Panama, and Venezuela also took part in this meeting; Ecuador, unfortunately, was not represented on this occasion. Reports covering the period since the first conference were presented, an assessment of progress was made, and recommendations for the continuation of the campaign in the area were approved. These two conferences have attracted considerable attention. During the meeting of the directors of animal health held in connection with its fourteenth training course, the Center was requested to arrange a similar type of meeting in 1961 for the countries of the region of the River Plate.

Meetings

Throughout the year, the Center maintained close contact with other organizations concerned with foot-and-mouth disease for the purpose of exchanging information and keeping abreast of new advances in the field. The Director of the Center attended the Ninth Meeting of the Permanent Commission on Foot-and-Mouth Disease and the Twenty-eighth General Session of the Committee of the International Office of Epizootics (OIE), in Paris; the

Chief of Field Service attended the Eighth Meeting of the Regional International Organization for Health in Agriculture and Livestock (OIRSA), in San Salvador, El Salvador; and the Chief of Laboratories attended the First Pan American Congress of Biology and Experimental Pathology, in Caracas. A senior member of the staff of the British Foot-and-Mouth Disease Research Institute visited the Center as a temporary consultant in October.

Scientific Publications

The following papers were prepared for presentation at technical meetings, publication in scientific journals, or as separate publications: (a) Proceedings of the International Foot-and-Mouth Disease Conference (PAHO Miscellaneous Publication No. 55); (b) Epizootiology and Prophylaxis of Foot-and-Mouth Disease in the Americas; (c) Control by Regions of Foot-and-Mouth Disease in the Americas; (d) Minimum Requirements for the Importation of Cattle from a Country Possessing Types of Foot-and-Mouth Disease Virus Different from Those of the Importing Country; (e) A Vaccine Potency Test in Adult Mice; (f) Difference in Pathogenicity of Modified Foot-and-Mouth Disease Virus in Different Hosts; (g) Demonstrations of an Immune Response to Foot-and-Mouth Disease Vaccine in a Protection Test in Young Adult Mice; (h) Investigation of the Prophylactic and Curative Power of Foot-and-Mouth Disease Serum in White Mice; (i) Modified Foot-and-Mouth Disease Virus; (j) Economic Production of Foot-and-Mouth Disease Virus by the Frenkel Method for the Preparation of Vaccine.

Toward the end of the year, the Center began to distribute a monthly bulletin to national and local institutes and laboratories interested in foot-and-mouth disease in the Americas. This bulletin contains bibliographical references to scientific papers published in the journals received by the Center.

Physical Facilities

Physical facilities at the Center still leave much to be desired. The lack of proper accommodation for cattle has been a continued obstacle to the development of the research program, a situation that worsened at the end of the year because certain temporary facilities were no longer available.

Financing of the Center

Since its establishment, the Center has been financed by the Program of Technical Cooperation of the Organization of American States (OAS/PTC). This source of financing was assured up to and including 1962.

In 1959, at a special Meeting of the Inter-American

Economic and Social Council of the OAS, held in Buenos Aires, Argentina, a resolution was passed instructing the Council to expand the present program of the Center. The first step in this expansion was approved by the OAS/PTC in 1960; the budget for 1961 contains provision for the establishment of four new international posts.

Other Zoonoses

During 1960, zoonoses in general, as well as particular zoonoses, were of continuing concern to the countries of the Americas and the Organization. Besides plague, rabies, and brucellosis control activities described elsewhere in this report, many of the countries developed or continued programs against bovine tuberculosis, hydatidosis, leptospirosis, viral encephalitides, salmonellosis, anthrax, trichinosis, taeniasis, and other zoonoses.

Activities would no doubt be intensified if the prevalence and incidence of the zoonoses were adequately reported; for in the light of such knowledge it would be possible to determine which of the diseases should be given primary consideration. Adequate reporting could be promoted by means of official measures requiring notification or making voluntary notification possible, as well as by extending diagnostic facilities to areas at present in need of them.

Reported Cases of Notifiable Diseases in the Americas, 1949-1958 (PAHO Scientific Publication No. 48) contains for the first time data on the number of cases of nine zoonoses in animals (for the years 1956-1958). In a special table, data of reported cases in man and in animals are brought together for four diseases (anthrax, brucellosis, hydatid disease, and rabies). These data furnish evidence of considerable morbidity from some zoonoses as well as of the lack of information about others; for example, one country which

reported 36 cases of human rabies in a year did not report a single case in animals.

Leptospirosis is emerging as a disease problem in practically every country of the Americas. Epidemiological studies show that its prevalence and incidence are greater than was suspected and that of the main sources of human infection, namely cattle, dogs, and rats, cattle are the most important.

The literature on the subject records that of the 60 *Leptospira* serotypes isolated in the world, 7 have been identified in Middle America and 5 in South America; and that certain epidemiological and laboratory techniques currently in use tend to hamper the detection of leptospirosis.

During the year, the Organization again supplied laboratories with its Leptospirosis Training Kit, which consists of a manual on laboratory techniques, a culture of the nonhuman pathogen *Leptospira biflexa* and its specific antiserum. Cultures of various serotypes were also provided upon request. The WHO/FAO Leptospirosis Reference Laboratory (Walter Reed Army Medical Center, Washington, D.C.) and the Pan American Zoonoses Center provided the laboratory items.

In many countries increasing interest is being shown in another zoonosis, histoplasmosis, which further epidemiological evidence has revealed can be just as important to urban as to rural dwellers. While infection in rural areas is often related to exposure to manure or manure-polluted sources, urban infection can be related directly to exposure to sources contaminated with bird excreta, gregarious city-dwelling birds probably being instrumental in creating sites of the causative fungus.

Histoplasmin was supplied to Argentina where skin testing is being included in a tuberculosis prevalence survey conducted with the technical collaboration of consultants of the Organization.

EDUCATION AND TRAINING

Professional Education

The acute shortage of physicians and other health workers imposes a high priority on education and training; no country can have health services fully adapted to its special needs until it is able to train its own health workers. An important part of the Organization's activities has therefore always been devoted to helping countries to strengthen their training facilities for public health and auxiliary workers.

Until such time as the training facilities in the Member Countries reach the desired level, the Organization assists Governments through the provision of consultant services, the recruitment of visiting professors, the supply of books and equipment, and the organization of surveys and seminars. One of the basic procedures, however, is to award fellowships and travel grants to professors and teachers so that they may pass on the knowledge they acquire to both undergraduate and graduate students. In this field in particular, the Organization can also play a useful role as a coordinating agency and a clearinghouse of information and has done so through the Medical Education Information Center.

Medical Education

Every country in Latin America now has one or more medical schools; in 1960 there were 94 schools, six more than in 1959. However, the size of the graduating classes varies greatly, ranging from almost 700 in one school to less than 15 in several. In no country is the annual number of graduates sufficient to meet even current needs.

In its assistance to medical schools, the Organization has given special emphasis during 1960 to the organization and administration of medical schools, including the selection of students, the teaching of the basic sciences, and the place of preventive medicine in the medical curriculum. Various procedures have been used to attain these goals.

Throughout the Continent there is a steadily growing interest in the organization and administration of medical schools. This interest is reflected in the increasing number of requests received by the Organization for assistance in this field. During the year, the Organization provided consultants who, at a meeting held in Mérida, Venezuela, held discussions with the deans and professors of the four medical

schools of the country on a series of topics including the objectives of medical schools, the content of the medical curriculum, teaching methods, internal regulation of medical schools, and the like.

An appraisal of the teaching at the Central University of Venezuela was made under the auspices of the Government by a team of medical educators provided by the Organization. A staff member from the Headquarters Office reviewed the present medical education program in Bolivia. In Honduras, a consultant gave technical advice on the selection of students by the Medical School, which established a Selection Committee and revised the School's entrance examinations after receiving the consultant's report. Assistance in the selection of students was also given to the Medical School of the University of Nicaragua. The consultant provided by the Organization for this purpose gave assistance as well in the organization of the premedical course, which includes the basic sciences.

A special consultant was recruited to complete the preliminary survey of the teaching of the basic sciences in medical schools in Latin America. The data provided by this survey show that half the schools have no full-time teachers in these fields and that the number of hours of teaching devoted to the basic sciences ranges from 1,000 in some to over 3,000 in several.

Special attention continued to be given to the organization of teaching of preventive medicine. A consultant assisted the Medical School of the University of Nicaragua, and a professor of preventive medicine from a Brazilian medical school acted as consultant to the Medical School of the University of Cuyo, Mendoza, Argentina. The Organization provided three consultants who assisted in the preparation of a Round Table on the Teaching of Health Education in Medical Schools held in León, Guanajuato, Mexico. This was the third of a series that has already dealt with the teaching of biostatistics and of environmental sanitation. It was organized by the Ministry of Public Health and Welfare and attended by professors of preventive medicine from most of the 22 medical schools of Mexico.

A tripartite agreement was entered into by the Organization with the University of Chile and the W. K. Kellogg Foundation for the purpose of initiating a training program on the uses and hazards of radioisotopes in clinical medicine.

A member of the faculty of the School of Medicine of the University of Chile was trained in this field in the United States of America.

Among the methods that have been used to help schools and countries resolve their teaching problems and improve medical education are those of the survey and the seminar, the success of which has led to a considerable increase in the number of requests for this type of assistance as well as for advisory visits by the Bureau staff. The Organization also directly assisted schools of medicine by providing long-term visiting professors in the basic sciences and in preventive medicine as well as consultants in such fields as statistics, parasitology, and pediatrics. In many instances, the visiting professor or consultant has participated in the teaching, although his primary function has been to advise and assist his national counterpart. During the year, the Organization recruited a full-time professor of physiology for the School of Medicine and Pharmacy of Haiti.

Assistance has also been given in the form of advice on the organization of medical libraries and the supply of limited amounts of equipment. Finally, fellowships were awarded to faculty members for short-term and long-term studies that would help them make their teaching more effective.

Public Health

Countries in which local health services provide most of the population not only with medical care but also with preventive services perhaps need to train a larger proportion of public health workers. The Organization thus gives special attention to the education and training of personnel who will man the health and medical services, especially since trained personnel represent a long-term investment. The goal is to assist in ensuring that sufficient technical knowledge is imparted to these key personnel to enable them to solve local community problems and to pass on their knowledge to local students.

In Latin America there are at present nine schools of public health. Six of them—one in Caracas, Venezuela, one in Bogotá, Colombia, two in Argentina, and two in Brazil—are intended primarily for the nationals of those countries. The remaining three—in Mexico City, São Paulo, Brazil, and Santiago, Chile—accept students from other countries as well. The Organization has granted senior faculty members of these schools travel grants to permit them to visit the countries from which their students come. The faculty can thus become better acquainted with the health administrations of these countries and with the problems their students will have to face on their return home. These faculty members also visit former students to observe and appraise their performance, which in turn enables the faculty to gauge the effectiveness of the teaching program of the school.

In addition, the Organization has provided schools with



Fig. 17. Schools of Medicine and of Public Health in the Americas, 1960.

visiting professors, in particular in the fields of statistics and health education, and has furnished books and supplies; in some cases, collaboration has also been given to the sanitary engineering departments of these schools.

Veterinary Medical Education

The year 1960 has been significant in that all schools of veterinary medicine in the Americas have been active in developing or expanding the teaching of public health and preventive medicine. Since the Seminar on Teaching Public Health in Schools of Veterinary Medicine (Kansas City, Missouri, U.S.A., August 1959), at which all the deans in attendance agreed that the public health aspects of veterinary medicine should form an important part of the modern curriculum, staff members of the Organization have been

assisting the schools in planning this change and, in some cases, have assisted initially in the teaching. Such teaching assistance is generally requested when a professor is absent because he is taking postgraduate public health studies.

PASB/WHO field staff also aided schools to complete a WHO questionnaire designed to obtain the information necessary for the Organization to publish a World Directory of Schools of Veterinary Medicine.

Technical advisory services in the planning of research projects were furnished to the deans of the national school of veterinary medicine in Guatemala and in Peru. Assistance in arranging and facilitating consultations and interviews concerning research plans was also provided.

Medical Education Information Center

The Medical Education Information Center (MEIC), a clearinghouse of information on the assistance given to medical schools by different agencies in the Region, has been so successful that its functions have been extended to handle information on schools of public health and other disciplines. As of December 1960, the agencies collaborating in MEIC were the "Campanha Nacional de Aperfeiçoamento de Pessoal de Nível Superior" (Campaign for the Advanced Education of Professional Personnel—Brazil); the Institute of International Education; the Pan American Union; the Rockefeller Foundation; the W. K. Kellogg Foundation; the Conference Board of Associated Research Councils (Fulbright Program); the International Cooperation Administration; the U. S. Public Health Service (the Division of International Health, the International Education and Exchange Branch, the National Institutes of Health); U. S.

Children's Bureau; and the Pan American Health Organization.

MEIC prepared and distributed four quarterly reports in 1960. These reports contain information on fellowships awarded to faculty members from Latin American countries in the fields of medical, public health, nursing, and dental education.

A five-year report of MEIC, together with an analysis of the data contained therein, was presented at the Center's Twelfth Meeting held from 16-17 June at Battle Creek, Michigan, headquarters of the W. K. Kellogg Foundation. Representatives of seven MEIC cooperating agencies were present. This meeting was the first that had taken place outside of its Secretariat headquarters, which is the Pan American Sanitary Bureau.

MEIC Directories

Work has started on a series of directories listing names of deans of schools and their addresses. The information contained in these directories is used by WHO in the compilation of its world directories. The following have already been distributed by MEIC to its members:

- (1) Directory of Schools of Public Health in Canada, United States of America, and Latin America.
- (2) Directory of Schools of Medicine in Latin America.
- (3) Directory of Schools of Nursing in Latin America.

The following are in preparation:

- (1) Directory of Schools of Dentistry.
- (2) Directory of Schools of Veterinary Medicine.
- (3) Directory of Schools of Sanitary Engineering.

A revision of each of the directories will be published at least once a year.

Nursing Education

According to a recent survey made by the Organization, only about one third of the instructors in 105 schools of nursing in Latin America have had a high school education or specialized preparation for teaching. Since the quality of nursing education depends primarily upon a competent faculty, the Organization's efforts have begun to shift from direct assistance to schools of nursing to collaboration in programs for the preparation of nurse instructors and supervisors. Five such projects were started during the year, as compared with two new projects in basic nursing education. It is foreseen that this trend will continue until large num-

bers of instructors and administrators have been trained. Consequently, projects for the training of auxiliary personnel will not be emphasized, since national nurses who complete the instructor courses will be fully competent to extend the programs now under way in many countries.

During 1960, 19 nurse advisers served in 16 educational projects; in addition, 39 fellowships were awarded.

Basic Nursing Education

Collaboration was begun with two new schools of nursing: one in Havana, Cuba, the first to be organized along

modern lines in that country; the other in the University of Buenos Aires, Argentina.

There are now 10 basic nursing education projects in Latin America (see Figures 18 and 19), four of which are connected with universities. At present, most of these projects include only one nurse educator, who is giving priority to continued preparation of the faculty through in-service training and fellowships rather than to advice on particular subjects in the curriculum. The present emphasis is thus the reverse of that in the early 1950's, when teams of four and five nurse educators were sent to the same school to assist with the teaching.

This change has come about for several reasons: in some cases schools were not in a position to take advantage of so much assistance at one time; in others, budgetary considerations may have influenced the decision; but in most cases the determining factor was that the faculties of the schools

of nursing with which the Organization was collaborating no longer needed concentrated assistance.

Of special significance for the guidance of basic nursing education in Latin America was the document on the organization and administration of schools of nursing prepared by a group of 18 leaders in the fields of nursing education and nursing service from 12 countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela. Never before in the history of nursing had a group of Spanish-speaking nurses met to establish policies and standards for nursing education in Latin America. This *Guide for Schools of Nursing in Latin America*, in the preparation of which several of the Organization's nursing education advisers collaborated, is undergoing its final editorial revision and will be published early in 1961.

Survey of Schools of Nursing, 1959-1960

In Latin America there are approximately 270 schools of nursing that are officially recognized by the Governments of the countries where they are located. However, since only a few countries have legislation governing schools of nursing, standards vary considerably from one to another, and even within the same country. Therefore when PASB began its survey of schools of nursing in Latin America in 1959, it arbitrarily established minimum criteria for the purpose of determining which schools of nursing should be included in the study. These criteria were as follows: (a) the school was officially recognized by the Government of the country in which it was located; (b) all students were required to have not less than six years' schooling before admission; (c) training was for three years and for full-time students; (d) practical instruction included experience in general hospitals having not less than 50 beds; and (e) the faculty consisted of not less than three nurse instructors.

As can be seen in Table 23, completed questionnaires were received in 1960 from 105 of the 110 schools meeting these requirements. Figure 19 shows their location by country.

Ten of the schools completing the questionnaires have not yet graduated their first class and were therefore not included in the analysis of the results of the survey.

This survey furnished the following information, which will be of special significance for the planning of realistic programs in nursing education:

(1) About one third of the schools are connected in some way with universities; there seems to be a trend toward closer relationship between schools of nursing and universities.

(2) Almost 90 per cent of the schools are directed by nurses.

(3) Approximately two thirds of the schools furnished some information on their budgets, although complete information was provided by only a few.

(4) Of the 5,625 students covered by the survey, 792

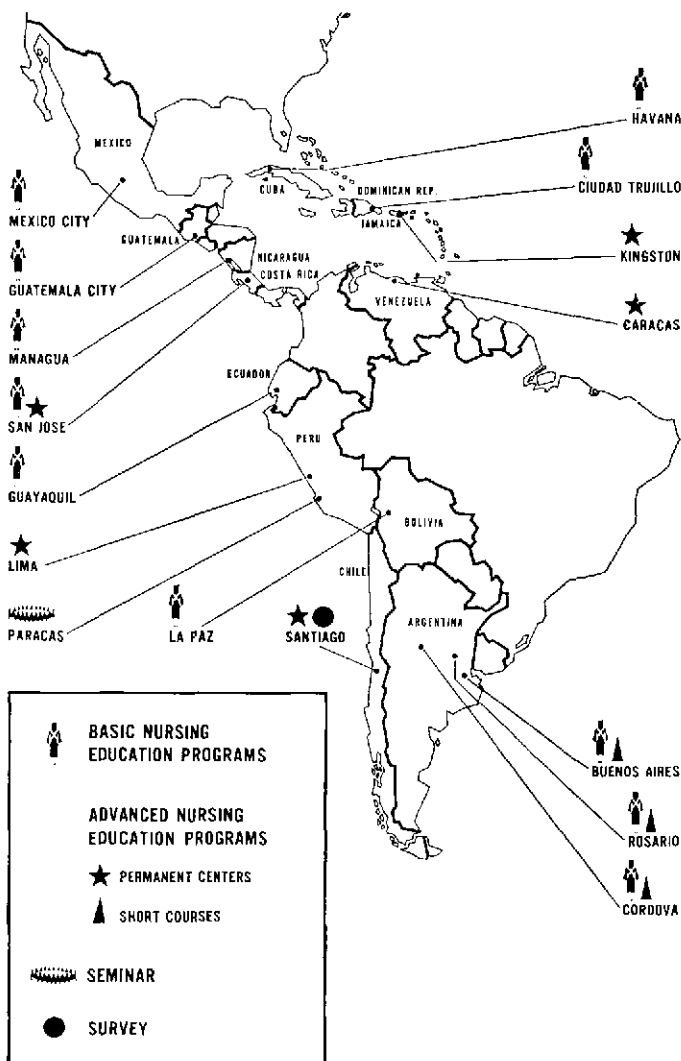


Fig. 18. Nursing Education Programs in which PASB/WHO Collaborated in 1960.

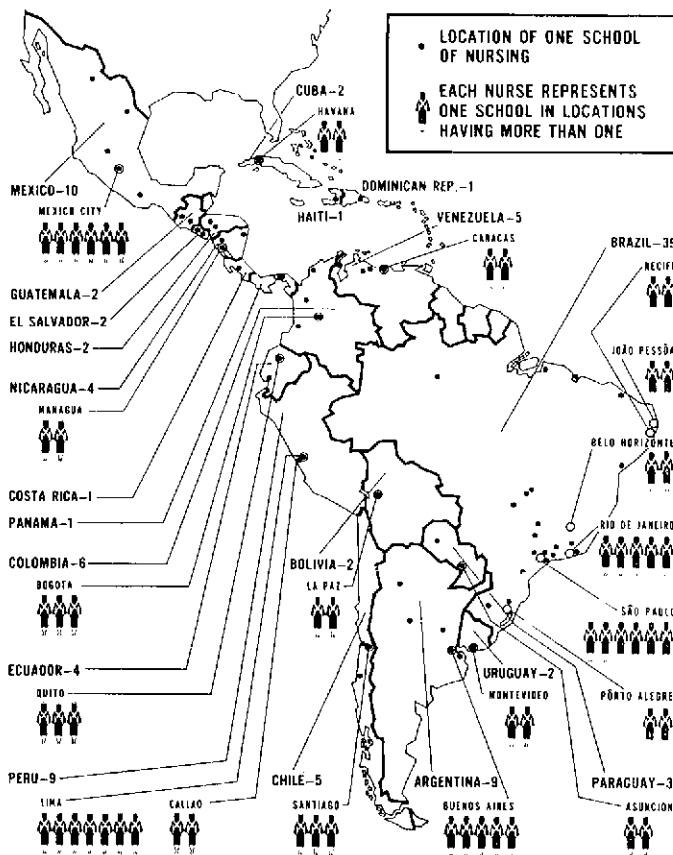


Fig. 19. Location of Schools of Nursing in Latin America Which Meet Certain Minimum Criteria.

had less than 9 years of general education; 3,299, between 9 and 10 years; and 1,534, from 11 to 12 years.

(5) Approximately one third of the nurse instructors had completed their high school education.

(6) Libraries had been established in 73 schools.

(7) All of the schools taught medical, surgical, pediatric, and obstetrical nursing.

(8) The curriculum of about two thirds of the schools did not include practical experience in administration and teaching. No practical experience in communicable disease nursing was provided in 16 per cent of the schools; in public health nursing in 11 per cent; and in psychiatric nursing in 19 per cent.

(9) More hours are now devoted to the teaching of social sciences than in 1949.

A report on the findings of this survey will be issued early in 1961.

Advanced Nursing Education

This has taken two forms: (1) academic courses in permanent centers in which graduate nurses with a complete high school education are prepared for teaching and administration; and (2) short courses to prepare graduate nurses who,

TABLE 23. SCHOOLS OF NURSING WHICH MET REQUIREMENTS ESTABLISHED BY PASB, AND SUMMARY OF THEIR PARTICIPATION IN THE 1959-1960 SURVEY

Country	Schools of nursing			Number of students in the schools	
	Meeting requirements	Answering questionnaire	Included in the analysis	Answering questionnaire	Included in the analysis
Total	110	105	95 ^a	5,770	5,625
Argentina	9 ^b	8	7	418	388
Bolivia	2	2	2	94	94
Brazil	39	39	35	1,516	1,479 ^c
Chile	5	5	5	341	341
Colombia	6	6	6	379	379
Costa Rica	1	1	1	116	116
Cuba	2 ^b	1	1	180	180
Dominican Republic	1	1	—	19	—
Ecuador	4	4	4	190	190
El Salvador	2	2	2	177	177
Guatemala	2	1	1	132	132
Haiti	1	1	1	86	86
Honduras	2	2	2	33	33
Mexico	10 ^b	10	7	522	483
Nicaragua	4	4	4	91	91
Panama	1	1	1	97	97
Paraguay	3	3	3	61	61
Peru	9	9	8	780	760
Uruguay	2	1	1	118	118
Venezuela	5	4	4	420	420 ^c

— None.

^a Ten schools excluded from the analysis had been in operation less than 3 years.

^b Estimate.

^c Number of students not specified by one school.

although employed as supervisors and administrators, have never been trained in these fields and have not completed their high school education. It is hoped that, when the need to prepare the older graduate with less training has been fulfilled, most of these short courses will be changed into regular academic courses in permanent centers.

Whereas in 1959 PASB/WHO was assisting projects in advanced nursing education in only Chile and Peru, in 1960 this type of activity was initiated in the following countries: Costa Rica, in the National School of Nursing; Venezuela, in collaboration with the School of Public Health in Caracas; Federation of the West Indies, in connection with the University College of the West Indies in Mona, St. Andrew, Jamaica; and Argentina, where, al-

though the work began with short courses in teaching and administration, the plans call for the development of centers for postgraduate education in at least two universities. A fifth project—a short training course on nursing supervision and administration in Buenos Aires—was attended by students from Argentina, Bolivia, Paraguay, and Uruguay.

Midwifery Education

In Argentina, Bolivia, Brazil, Chile, Ecuador, Guatemala, Peru, and Uruguay there are many graduate midwives whose services in maternal and child health could be greatly enhanced if they were to receive relatively little additional preparation. At present they are trained mainly in delivery and perinatal care, and generally perform their duties only at the time of actual delivery in hospitals or in the course of their private practice in the homes of their patients.

In order to increase the contribution of these midwives

to maternal and child health, the Organization is collaborating with the National Health Service of Chile in organizing short-term courses designed to give them additional preparation in this field, including nursing, nutrition, public health, child care, anthropology, sociology, and health education. Since these workers are often expected to supervise auxiliary personnel, the course also includes training in teaching and administration. The first of these courses will be given in 1961. It is being organized under the auspices of the Graduate School of the University of Chile and is intended to train graduate midwives already employed by the National Health Service who will serve as instructors in future courses and in schools of midwifery.

Reorganization of the basic curriculum of the School of Midwifery in Santiago was begun before these short courses were planned and is continuing, with a view to ensuring that future graduates of this school will not need such additional training.

Fellowships

As in previous years, the activities of the fellowship program in 1960 continued to be developed in close relation to the interest expressed by the Member Governments in having some of their technical and auxiliary staff receive specialized training abroad. Although all the countries of the Hemisphere are in the process of expanding their national facilities for basic professional training, they still need international cooperation for the education and specialized training of their health and teaching personnel. Fellowships for study abroad awarded to officials who cannot obtain the necessary training in their home countries constitute a real contribution toward the strengthening of national health services and related training centers.

In the period covered by this report, 516 fellowships were awarded in the Americas, a 2 per cent increase over the 505 awarded in 1959. To this number should be added 83 extensions made upon recommendation of various teaching institutions to permit fellows to complete their academic training. These extensions represented 170 fellowship-months, or an average of slightly over two months per extension. The 516 fellowships represented 3,205 fellowship-months, or an average of slightly over six months for each fellowship. The fellowships were awarded to nationals of all the countries of the Hemisphere and essentially in relation to the countries' respective needs for specialized personnel. Such specialized personnel, in addition to strengthening

the national health services, gradually replace the international teams assigned by the Organization to the programs that the Governments are carrying out (see Table 24).

During the period under review 107 fellows referred by other WHO Regional Offices came to study in the Region of the Americas. This number represents a 32 per cent reduction as compared with 159 fellows came from other Regions. This reduction had been anticipated in view of the development and organization of training facilities in the other Regions of the WHO. In this respect it is

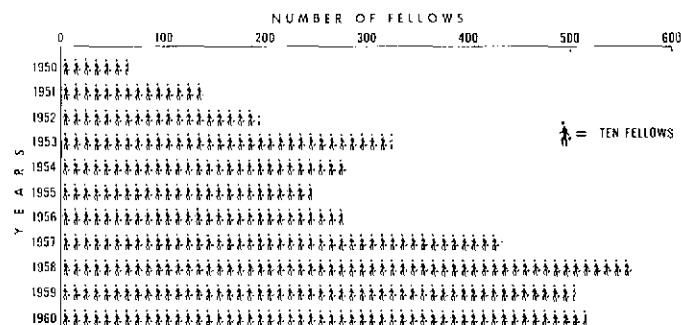


Fig. 20. Fellows from Countries of the Americas Receiving Awards, 1950-1960.

TABLE 24. FELLOWSHIPS AWARDED IN THE AMERICAS,^a BY COUNTRY OF ORIGIN OF FELLOWS AND TYPE OF TRAINING

Country of origin	Fellowships				
	Total	Courses organized or assisted by PAHO/WHO		Other courses of academic character	Travel grants
		Special	Academic		
Total	516	185	73	138	120
Argentina	54	23	10	16	5
Bolivia	28	8	8	8	4
Brazil	33	11	1	4	17
Canada	3	—	—	1	2
Chile	21	3	1	4	13
Colombia	56	30	9	15	2
Costa Rica	8	1	2	3	2
Cuba	34	8	4	12	10
Dominican Republic	1	—	—	—	1
Ecuador	16	7	2	5	2
El Salvador	5	1	1	1	2
Guatemala	16	7	4	4	1
Haiti	10	3	—	5	2
Honduras	5	1	1	3	—
Mexico	28	5	3	5	15
Nicaragua	8	5	—	2	1
Panama	8	—	4	3	1
Paraguay	30	7	7	12	4
Peru	48	19	9	16	4
United States of America ^b	12	2	—	—	10
Uruguay	15	5	4	4	2
Venezuela	22	9	3	5	5
British Territories ^c	45	23	—	10	12
Departments of France in the Americas	4	2	—	—	2
Surinam and the Netherlands Antilles	6	5	—	—	1

— None.

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b Includes 2 fellows from Puerto Rico.

^c Includes 1 fellow from British Honduras.

interesting to note that, whereas in 1959, 44 fellows were sent from the European Region and 43 from the Eastern Mediterranean Region, in 1960 the number fell to 28 and 16, respectively (see Table 25).

The distribution of fellowships according to the nature of studies was similar to that of previous years. For studies

TABLE 25. FELLOWS FROM OTHER REGIONS WHO BEGAN STUDIES IN THE AMERICAS,^a BY TYPE OF TRAINING

Region of origin	Total	Courses organized or assisted by PAHO/WHO	Other academic courses	Travel grants
Total	107	10 ^b	57	40
Europe	28	1	8	19
South East Asia	23	2	19	2
Eastern Mediterranean	16	6	9	1
Western Pacific	18	—	10	8
Africa	22	1	11	10

— None.

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b These fellows attended the Malaria Eradication Training Center (METC) in Jamaica.

leading to a Master's Degree in Public Health, or an equivalent degree, 211 fellowships or 41 per cent of the total, were awarded. Fellowships for studies in public health had the highest priority. For nonacademic or short-term special courses 185 fellowships, or 36 per cent, were awarded. Travel grants totaled 120, or 23 per cent (see Table 24).

Travel grants are intended primarily for staff with broad experience in public health administration or medical education who need to make observation visits to specific places to bring their knowledge up to date. Within this category, awards were made to a group of senior officials in charge of water supply systems in Argentina and Uruguay to enable them to visit other countries in the Americas. The results were highly satisfactory.

The policy of organizing groups of senior officials with a

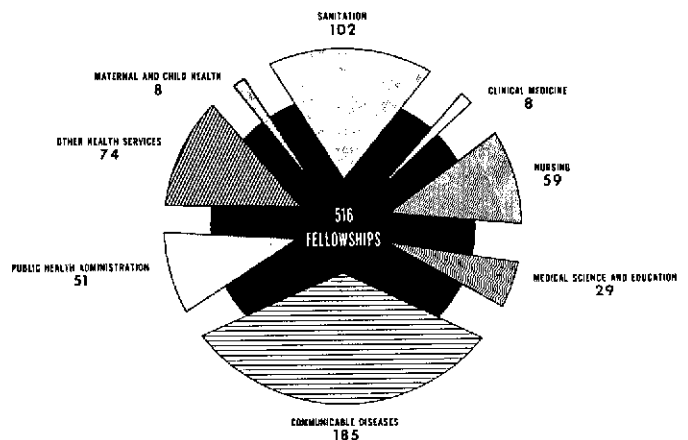


Fig. 21. Field of Study of Fellowships Awarded in the Americas, 1960.

common interest from different countries or from a single country was begun in the Region in 1959, when travel grants were awarded to several deans of medical schools of Argentina. Traveling as a group, these persons constituted a mobile seminar, so to speak, and the favorable comments that were subsequently received encouraged the organization of similar groups. There is no doubt that great care must be exercised in selecting the participants of such groups and in planning their program of observation visits.

A classification of fellowships by subject matter shows that those awarded in the field of communicable diseases again head the list. However, it may be seen from Table 26 that of the 185 fellowships awarded under that title, 91 were for malaria studies and that fellowships for communicable diseases as such formed only 18.2 per cent of the total. The 21 per cent increase over last year in fellowships for malaria studies springs from the need to train the staff necessary to maintain a reserve from which the vacancies that continu-

TABLE 26. FELLOWSHIPS AWARDED IN THE AMERICAS,^a BY COUNTRY OF ORIGIN OF FELLOWS AND FIELD OF STUDY

Field of study	Total	Country of origin																				Arrivals from other Regions						
		Argentina	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	El Salvador	Guatemala	Haiti	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	United States of America ^b		Uruguay	Venezuela	British Territories ^c	Depts. of France in the Americas	Surinam and the Netherlands Antilles	
Total	516	54	28	33	3	21	56	8	34	1	16	5	16	10	5	28	8	8	30	48	12	15	22	45	4	6	107	
Public health administration	51																											9
Hospital and medical administration	8	1														1				5					1			
Other	43	5	2	2			1		12				1	1		4			7	7				1				
Sanitation	102																											12
Sanitary inspection	31	1	6				3				1			1	3			3	6	1				2	4			
Sanitary engineering	71	5	6	1		1	15	1	7		1		4	4	1	6		1	2	6		2	7	1				
Nursing	59	15	3	1		4		2	3				5	1	1				4	5		5	3	4				20
Maternal and child health	8	3				2													2						1			5
Other health services	74																			2								21
Mental health	3																			1	1			1				5
Health education	6	1			1				1							1			1					1				5
Occupational health	3					2																	1					
Nutrition	5			2											2	1												2
Health statistics	31	7		1				1							1			1				1		16		3		2
Dental care	19	2	1		1	1			2		1	1	1	1		1			1	1		3	2					5
Rehabilitation	3	1		1				1																				1
Control of pharmaceutical preparations	4			2		1									1													1
Communicable diseases	185																											24
Malaria	91	4	9	8		1	23	1	7		8	1	2	2		3	3		5	9				1	4			
Tuberculosis	4						1									2									1			
Veterinary public health	6								1		1	1	1	1				1										
Zoonoses	17	3		2		1	2				1									6			1	1				
Leprosy	4			1						2																		1
Rabies	1			1																								
Other communicable diseases	48	4	1	4		2	7	1			2		1			1	1	2	5	2	2	2	3	6	2	2		
Laboratory services ^d	14	1		2						1	2		1			1	1				1	1		4				
Medical science and education ^e	29	1		4	1	8			1						1	2					8	1	1	1				
Clinical medicine	8																											
Radioisotopes	1																											
Other	7			1			2	1																1				

— None.

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b Includes two fellows from Puerto Rico.

^c Includes one fellow from British Honduras.

^d Malacology, public health laboratory, parasitology, bacteriology,

medical entomology, serology, vaccine preparation, microbiology, helminthology, mycology, virology.

^e Of these, eight fellowships were awarded to professors of schools of public health and two to professors of schools of medicine.

ally arise in national malaria eradication services can be filled. To this end, in addition to the yearly international malaria course held at Maracay by the Government of Venezuela, four courses were given in 1960 for physicians and engineers: two in Mexico, one in Jamaica, and another in Brazil. A course for chiefs of malaria sections was also given in Mexico. Fellowships for malaria studies were awarded in all but six of the countries of Latin America. In addition, 10 fellows from other Regions came to the Americas for malaria studies. Thirty of the fellowships in communicable diseases were for studies at the Pan American

Foot-and-Mouth Disease Center and 17 at the Pan American Zoonoses Center.

There was an appreciable increase in the number of fellowships for studies in sanitation, which rose from 88, or 17.4 per cent of all fellowships in 1959, to 102, or 19.7 per cent in 1960. The increase was due especially to courses related to the development of water supplies and to the greater interest of engineers in postgraduate academic studies. Nursing awards increased from 42 (8.3 per cent) in 1959 to 59 (11.4 per cent) in 1960 as shown in Table 27.

There was little change in the awards in other fields. The

TABLE 27. FELLOWSHIPS AWARDED IN THE AMERICAS,^a BY COUNTRY OF ORIGIN OF FELLOWS AND BY FIELD OF STUDY AND TYPE OF TRAINING

Field of study and type of training	Total	Country of origin																									
		Argentina	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	El Salvador	Guatemala	Haiti	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	United States of America ^b	Uruguay	Venezuela	British Territories ^c	Depts. of France in the Americas	Surinam and the Netherlands Antilles	
Total	516	54	28	33	3	21	56	8	34	1	16	5	16	10	5	28	8	8	30	48	12	15	22	45	4	6	
Public health administration	51																										
Courses ^a	34	5	1	1			1		8			1	1						4	11				1			
Other arrangements ^f	17	1	1	1					4						5				3	1					1		
Sanitation	102																										
Courses organized ^d	59	2	6				13	1	5			1	4	2	2	4		3	6	3			7				
Other courses ^e	25	2	3			1	5		1				2		1		1	1	1	2		1	2	3			
Other arrangements ^f	18	2	3	1					1		1				4			1	1	2		1		2			
Nursing	59																										
Courses organized ^d	29	12	3						1			3							4	3		3					
Other courses ^e	16	3						1				1	1	1		2				2		2	1	2			
Other arrangements ^f	14			1		4		1	2			1				1							2	2			
Maternal and child health	8																										
Courses ^a	4	2																	2								
Other arrangements ^f	4	1				2																			1		
Other health services	74																										
Courses organized ^d	49	8	1	2		1		1	2		1	1	1	1		2	1	1	1	1		3	2	16		3	
Other courses ^e	12	2		1	1		1								2				1	1		1	1	1			
Other arrangements ^f	13	1		3	1	1	1	1	1						2						1			1			
Communicable diseases	185																										
Courses organized ^d	117	11	6	9		3	25		4		8		3			2	4		3	20	2	3	3	7	2	2	
Other courses ^e	36	1	4	1		1	7	2	3		5	1	2	1	1			2	4				1				
Other arrangements ^f	32			8			1		1	1	2	1		2		4		1			1		2	7		1	
Medical science and education	29																										
Courses ^a	8	1		1		2									1	2								1			
Other arrangements ^f	21			3	1	6			1												8	1	1				
Clinical medicine	8																										
Courses organized ^d	4			1			1	1												1							
Other courses ^e	3						1																	1	1		
Other arrangements ^f	1																			1							

— None.

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b Includes two fellows from Puerto Rico.

^c Includes one fellow from British Honduras.

^d Those organized or assisted by PAHO/WHO.

^e Those of academic character.

^f Generally travel grants.

apparent reduction in the number of fellowships in public health administration and maternal and child health is in fact due to the difficulty of clearly separating these two study areas; the somewhat arbitrary classifications used sometimes cause overlapping. For example, the recipients of an important number of awards included under communicable diseases actually took general public health courses at schools of public health, but since the principal area of study was communicable diseases, these fellowships are given under that title, even though the fellows received broader training. Similar overlapping occurs in other subject classifications. The figures in Table 26 should therefore be interpreted with these reservations in mind.

Table 28 gives a breakdown of the 1960 awards by category. Most fellowships were again awarded to physicians, who received 164 or 31.7 per cent of the total; however, their share was smaller than in 1959 when they received 38 per cent of all fellowships. Engineers, on the other hand, received only 7.6 per cent in 1959, whereas in 1960 they were awarded 89 fellowships, or 17.2 per cent of the total.

There was also an increase in awards to dentists, from 1.5 per cent in 1959 to 3.6 per cent of the 1960 fellowships. In the other professional or nonprofessional groups there were no major changes.

The selection of the place of study is an important activity of the fellowship program. It requires establishing a balance between offering the fellow stimulation through new ideas and environment and providing a situation sufficiently similar to that in his own country to permit him to adapt and apply his newly-acquired knowledge. Most countries of Latin America have the advantage of a common language as well as many training centers capable of receiving students from other countries. Brazil, which is being increasingly utilized for training purposes, has a language sufficiently similar to that of most of the other countries not to pose too serious a problem. Obviously, an important requisite for a successful fellowship is a command of the language spoken in the country of study. Hence, in accordance with a policy established by the Bureau many years ago, most fellowship studies were made in the countries of Latin America and only 4.6 per cent in countries in other Regions (see Table 29).

All training institutions and authorities continued to provide generous and valuable cooperation which is essential to the effective development of the fellowship program. Naturally, the countries with training centers accepting foreign students received more fellows than countries used for observation trips only. It should be pointed out, however, that travel grants may perhaps entail more work for the national health officials of the country of study than an academic fellowship, since the trips require the preparation of detailed plans for visits and observations.

Mention might also be made of the supervision of each fellow by PASB officers. Personal interviews are held with

TABLE 28. NUMBER OF FELLOWSHIPS AWARDED IN THE AMERICAS,^a BY CATEGORY

Category	Number
Total	516
Physicians	164
Dentists	19
Engineers	89 ^b
Veterinarians	53
Nurses	63 ^c
Other professionals	28
Sanitary inspectors	33
Other nonprofessionals	67

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b Thirteen other fellows, not engineers, also studied sanitation.

^c Four nurses studied in other fields.

fellows to find out how they are adjusting themselves to their new situation, what their living conditions and problems are, how they are applying themselves and the results of tests and examinations. Such personal interviews are supplemented with further interviews with the professors assigned as counselors to each fellow, in order to discuss the fellow's reactions and behavior in classes and the need for adjustments or changes in his or her study program. Experience has shown that such three-way personal contact is extremely useful in solving the problems which often arise.

These interviews have shown that one of the problems affecting most of the fellows is the financial situation they must face on accepting a fellowship, since some Governments suspend the payment of their salaries or only give them "fellowship aid" which usually is no more than a fraction of their salary. Such a situation is clearly damaging to the successful prosecution of the fellowship program. In fact, many candidates have refused a fellowship award at the last moment, when all arrangements have been completed; and when they do accept one and their usual salary is not continued, the resultant family financial difficulties have an unfavorable effect on their studies. This situation has caused some fellows to refuse to complete their studies and to return home without complying with the fellowship requirements. In view of this, the Directing Council of the Pan American Health Organization adopted Resolution III at its VIII Meeting¹ and Resolution XIX at its IX Meeting;² but, unfortunately, in some instances they have not been put into effect.

Another important activity of the fellowship program that is increasing year by year is the provision of advisory

¹ Official Document PAHO 13, 8.

² Official Document PAHO 18, 13-14.

TABLE 29. FELLOWSHIPS AWARDED IN THE AMERICAS BY COUNTRY OF ORIGIN OF FELLOWS AND COUNTRY OR REGION OF STUDY FOR FELLOWS FROM OTHER REGIONS^a

Country of origin of fellows	Total	Country of study in the Americas																			Other Regions of study										
		Argentina	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	El Salvador	Guatemala	Haiti	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	United States of America ^e	Uruguay	Venezuela	British Territories ^d	Depts. of France in the Americas	Surinam and the Netherlands Antilles	AFRO	EURO	EMRO	SEARO	WPRO
Total Region of the Americas	516 ^b	58	4	104	12	68	43	8			5	1	27	3	138	1	4	1	27	103 ^o	2	35	30		3	4	16	5	4	4	
Argentina	54	15		10		14	5	1							4				3	12		2						1			
Bolivia	28	5		5		6	3								8		1		3	1		5									
Brazil	33	6	1	3	2	4	4							2	11				3	7		3						1	2	1	
Canada	3														1				1	2										1	
Chile	21	1		5	1		5	3							1					13		1	3								
Colombia	56	4	2	12		6									1				3	5		9						1	1		
Costa Rica	8					2									1					3		1	1					1			
Cuba	34			6		1	1				1	2			26							2									
Dominican Republic	1																			1											
Ecuador	16	1		6			2							1	1	8						1									
El Salvador	5			2											3																
Guatemala	16	1		2		4		1							6		1			2		1									
Haiti	10			1	2										7	1						1									
Honduras	5			1		2									1					1											
Mexico	28	3		7	1	5	4			1	1								5	18		1					1	2	1		
Nicaragua	8	1				1	1	2							3				1	2			1								
Panama	8			3		1	1								1					2		1									
Paraguay	30	4		12		7								2	6					3		4									
Peru	48	9		12		7	2	1		2	1				15		1			8									1		
United States of America	12	1	1	2	1	4	4			2					1		1		3		1	1	2				1	4	4	3	4
Uruguay	15	3		7		1	1				1				1				1	5		1									
Venezuela	22	4		7		3	1					1			7				2	4											
British Territories	45					5	5								1					14			21		1			2			
Departments of France in the Americas	4			1			2													1											
Surinam and the Netherlands Antilles	6						2													1		1	3								
Total, all other regions	107	1		7	26						1	2			12					78 ^f		6	16								

— None.

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b The total for each country is of the actual number of fellows; it does not include repetition when a fellow studied in more than one country or Region.

^o Includes two fellows from Puerto Rico.

^d Includes one fellow from British Honduras.

^e Twenty-nine studied in Puerto Rico.

^f Two studied in Puerto Rico.

services and collaboration to Member Countries to help them develop their own fellowship programs. During the period covered by this report, 105 fellowships were awarded by the Government of Venezuela. Of these, 71 were for studies in the United States of America and 34 for studies in Latin American countries. Programs of visits were also pre-

pared for officials of the Ministry of Health of Venezuela who came to the U.S.A. on duty travel. In addition, the Government of Cuba made a special contribution of \$25,000 for the sole purpose of awarding eight fellowships to Cuban public health officials, for whose study programs and supervision the Bureau was responsible.

Assistance and cooperation continued to be given to the OAS fellowship program in the selection of candidates for studies in health and related fields. A total of 217 applications were examined and reported on during 1960.

The financing of the fellowship program is more flexible than that of other activities of the Organization, and it is possible to utilize at any moment surpluses appearing when the periodic revisions of the budget are made. Thus, the funds for fellowships from all sources amounted to \$977,165 during the year, even though the amount budgeted for fellowships and participants in seminars for 1960 was only \$860,852 (see Table 30).

TABLE 30. FELLOWSHIP FUNDS IN THE AMERICAS FOR 1959 AND 1960

Year	PAHO			WHO		Total all funds
	Regular	Special Malaria Fund (SMF)	Other	Regular	Technical Assistance	
1959	\$330,773	\$110,811	\$24,375	\$374,676	\$82,060	\$922,695
1960	325,830	105,125	54,989	370,101	121,120	977,165

TABLE 31. FELLOWSHIPS AWARDED FOR COURSES ORGANIZED OR ASSISTED BY PAHO/WHO IN THE AMERICAS,^a BY FIELD OF STUDY AND PROJECT,^b AND BY COUNTRY OF ORIGIN OF FELLOWS

Field of study and project	Country of origin of fellows																										
	Total	Argentina	Bolivia	Brazil	Canada	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	El Salvador	Guatemala	Haiti	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	United States of America ^c	Uruguay	Venezuela	British Territories ^d	Depts. of France in the Americas	Surinam and the Netherlands Antilles	
Total	258	33	16	12	—	4	39	3	12	—	9	2	11	3	2	8	5	4	14	28	2	9	12	23	2	5	
Sanitation																											
AMRO-1	29	2	6	—	—	—	6	—	1	—	—	—	—	—	1	—	—	3	6	3	—	—	1	—	—	—	—
AMRO-219	26	—	—	—	—	—	7	1	4	—	—	1	4	2	1	—	—	—	—	—	—	—	6	—	—	—	—
AMRO-249	4	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—
Nursing																											
Chile-29	7	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	1	—	—	—	—	—
AMRO-100	19	10	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	2	—	—	—	—	—
Colombia-4	3	2	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other health services																											
AMRO-10	6	4	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
AMRO-18	5	2	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AMRO-54	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
AMRO-72	17	2	1	—	—	1	—	—	2	—	1	1	—	1	1	—	—	—	1	1	—	3	2	—	—	—	—
AMRO-85	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16	—	—	3
Communicable diseases																											
AMRO-77	30	4	1	2	—	2	2	—	—	1	—	—	—	—	—	—	—	—	1	2	2	2	2	5	2	2	
AMRO-81	26	3	—	4	—	1	4	—	—	1	—	1	—	—	—	1	—	—	—	9	—	1	1	—	—	—	
AMRO-114	46	4	4	3	—	—	13	—	4	—	5	—	1	—	—	2	—	—	2	8	—	—	—	—	—	—	
AMRO-134	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	—	—	
AMRO-137	12	—	1	—	—	—	6	—	—	1	—	1	—	—	2	—	—	—	—	1	—	—	—	—	—	—	
Clinical medicine																											
Anesthesiology Course	4	—	—	1	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	

— None.

^a Corresponds to the period 1 December 1959 to 30 November 1960.

^b See Table 32 for description of courses organized or assisted by PAHO/WHO.

^c Includes two fellows from Puerto Rico.

^d Includes one fellow from British Honduras.

TABLE 32. FIELD OF STUDY, PROJECT NUMBER, NAMES, PLACES, AND DATES OF COURSES AND VISITS ORGANIZED OR ASSISTED BY PAHO/WHO^a

Field of study and project number	Course or Visit	Place	Date
Sanitation AMRO-1	Environmental sanitation training Course for sanitary engineers	University of São Paulo School of Public Health, São Paulo, Brazil	Jan.-Dec. 1960
	Two courses for sanitary inspectors	University of Chile School of Public Health, Santiago, Chile University of São Paulo School of Public Health, São Paulo, Brazil	June-Dec. 1960 Jan.-Dec. 1961
AMRO-219	Course on administration, management, and financing of water supplies	Mexico City	14 Nov.-2 Dec. 1960
AMRO-249	Vector control	U.S.A./Mexico Border	19-27 Sept. 1960
Nursing AMRO-28 (for Chile-29)	Advance nursing education	University of Chile School of Public Health, Santiago, Chile	Jan.-Dec. 1960
Colombia-4	Course on public health nursing	National University School of Public Health, Bogotá, Colombia	March 1960-Feb. 1961
AMRO-100	Course on nursing supervision and administration	Buenos Aires, Argentina	May-Nov. 1960
Other health services AMRO-10	Vital statistics course	University of Chile School of Public Health, Santiago, Chile	March-Dec. 1960
AMRO-18	Biological evaluation course	University of Chile School of Public Health, Santiago, Chile	11-29 July 1960
AMRO-54	Two visits to INCAP	Guatemala City	Jan.-Sept. 1960
AMRO-72	Short course in public health dentistry	University of São Paulo School of Public Health, São Paulo, Brazil	April-June 1960
	Regular course in public health dentistry	University of São Paulo School of Public Health, São Paulo, Brazil	Jan.-Dec. 1961
AMRO-85	Classification of causes of death course	Kingston, Jamaica, W. I. F.	8-29 Aug. 1960
Communicable diseases AMRO-77	XIII course on foot-and-mouth disease One visit to the Pan American Foot-and-Mouth Disease Center	Bogotá, Colombia Rio de Janeiro, Brazil	5-18 June 1960 May-July 1960
AMRO-81	Zoonoses course Two visits to PAZC	PAZC, Azul, Argentina Azul, Argentina	4-23 Jan. 1960 Aug. 1960-Oct. 1961
AMRO-114	VII malaria course for sector chiefs	Mexico City	June-Sept. 1960
	VII malaria course for physicians and engineers	Mexico City	Feb.-May 1960
	VIII malaria course for physicians and engineers	Mexico City	Sept.-Dec. 1960
AMRO-134	VIII malaria course for physicians and engineers	Kingston, Jamaica, W. I. F.	June-Sept. 1960
AMRO-137	One visit to METC	Kingston, Jamaica, W. I. F.	June-Sept. 1960
	V malaria course for senior officials	University of São Paulo School of Public Health, São Paulo, Brazil	April-July 1960
	Medical entomology course oriented towards malaria	University of São Paulo School of Public Health, São Paulo, Brazil	July-Nov. 1960
Clinical medicine Anesthesiology	Anesthesiology course	Denmark	Jan.-Dec. 1960

^a Corresponds to the period 1 December 1959 to 30 November 1960.

TABLE 33. FELLOWSHIPS AWARDED,^a BY SOURCE OF FUNDS

Country of origin	Total	PAHO			WHO	
		Reg-ular	SMF	Others	Reg-ular	TA
Total	516	175	91	56	160	34
Argentina	54	23	4	5	21	1
Bolivia	28	7	9	1	11	—
Brazil	33	12	8	5	7	1
Canada	3	—	—	—	3	—
Chile	21	3	1	3	10	4
Colombia	56	14	23	5	6	8
Costa Rica	8	4	1	—	—	3
Cuba	34	12	7	8 ^b	7	—
Dominican Republic	1	—	—	—	1	—
Ecuador	16	3	8	2	3	—
El Salvador	5	2	2	—	—	1
Guatemala	16	12	2	—	1	1
Haiti	10	6	2	—	2	—
Honduras	5	3	—	—	2	—
Mexico	28	14	3	—	10	1
Nicaragua	8	4	3	—	1	—
Panama	8	1	—	1	3	3
Paraguay	30	3	5	1	19	2
Peru	48	12	9	8	13	6
United States of America	12	5	—	2	5	—
Uruguay	15	7	—	3	3	2
Venezuela	22	14	1	3	4	—
British Territories	45	12	3	5	24	1
Departments of France in the Americas	4	1	—	2	1	—
Surinam and the Netherlands Antilles	6	1	—	2	3	—

— None.

^a Corresponds to the period from 1 December 1959 to 30 November 1960.

^b Awarded with funds specifically provided by the Government of Cuba, funds to be administered by PAHO.

TABLE 34. PARTICIPANTS IN SEMINARS AND CONFERENCES ORGANIZED BY PAHO, BY REGION, COUNTRY OR AREA OF ORIGIN, 1960

Region, Country or Area of Origin	Seminar on Alcoholism (AMRO-9.3)	Seminar of Directors of Schools of Nursing (AMRO-46.6)	Conference on Live Poliovirus Vaccines (AMRO-200.2)	Study Group on Chagas' Disease (AMRO-215)	Seminar on Water Rates (AMRO-244)
Total	32	18	85	12	55
Argentina	4	1	—	1	2
Bolivia	—	—	—	—	2
Brazil	1	3	—	3	4
Canada	—	—	3	—	—
Chile	6	3	—	2	2
Colombia	2	2	1	—	2
Costa Rica	2	1	3	—	2
Cuba	2	—	1	—	1
Dominican Republic	—	—	—	—	—
Ecuador	1	1	—	—	3
El Salvador	1	—	—	—	2
Guatemala	2	1	—	—	3
Haiti	—	—	—	—	—
Honduras	—	—	—	—	2
Mexico	3	—	1	1	4
Nicaragua	—	1	—	—	2
Panama	1	—	—	—	2
Paraguay	1	1	—	—	2
Peru	3	2	—	1	2
United States of America	—	—	52	2	—
Uruguay	1	1	—	1	10
Venezuela	2	1	—	1	4
West Indies Federation	—	—	—	—	2
Surinam and the Netherlands Antilles	—	—	—	—	2
Other Regions:					
Africa	—	—	3	—	—
Eastern Mediterranean	—	—	1	—	—
Europe	—	—	18	—	—
Western Pacific	—	—	2	—	—

Publications and Reference Services

Publications

The program of PAHO publications is planned each year with a view to making known and furthering the aims and work of the Organization. The scope of the program can be measured by the wide range of topics and types of publications issued. Broadly, they fall into the two categories: Periodical Publications and Special Publications. Their content reflects not only the international public health activities in which PAHO is engaged, but also the progress and advances achieved in public health, medicine, and related sciences in all countries. The publications are distributed regularly to the health authorities of Member Governments and their official services, institutions, and national libraries; they also reach universities, schools of medicine and public health, other organizations, services, and associations connected with medicine and public health, as well as individual specialists, field workers, and students in all parts of the Americas.

A portion of the program is directed to the general public, for the purpose of promoting wide interest in PAHO's work through pamphlets and other material, this being an activity that falls in the public information field.

Periodical Publications

The monthly *Boletín de la Oficina Sanitaria Panamericana*, created in 1920 by the Sixth International Sanitary Conference, continued its long record of service to public health in the Americas through the dissemination of current information in the medical sciences and the new techniques developed in public health. Completing its 39th year in 1960, the journal reached a record pressrun of 9,700 copies per month, with four regular main sections devoted to original technical and scientific articles, abstracts from other national and international medical and public health journals and reports, general information, and bibliographical announcements and reviews; plus a special section for editorials by public health authorities and experts. The *Calendar of Selected International Meetings* has been incorporated in the *Boletín* as a monthly feature, and an up-to-date list of the national health authorities of the American republics also appears each month. Volumes XLVIII and XLIX, each consisting of six monthly issues, were published in 1960. Each of the two volumes has its own index, printed separately.

During the year, close collaboration was maintained with other scientific publications and organizations in order to obtain important current literature for translation and

simultaneous or exclusive publication in Spanish for the benefit of public health workers throughout Latin America. The *Boletín* also continued its program of selecting and publishing scientific and technical papers received from specialists and field workers in all the American republics. The articles for each issue are selected with a view to covering the broadest possible range of topics of interest to public health; a few issues in 1960, such as the July number featuring tuberculosis, were devoted almost exclusively to one subject.

Information and summary reports on the work of the Governing Bodies of PAHO are also disseminated through the *Boletín*. The activities of the XII Meeting of the Directing Council (Havana, August 1960) were reported in the December issue, and the Technical Discussions held at that meeting will be featured subsequently. The findings and recommendations of working groups, seminars, and other international technical meetings are also reported regularly for the information of health workers throughout the Americas.

Examples of such features were the report of the Second Meeting of the Advisory Committee on Environmental Sanitation (August issue), the technical papers presented at the XVIII Annual Meeting of the United States-Mexico Border Public Health Association (November and subsequent issues), and the Spanish translation of selected papers of the Second International Conference on Live Poliovirus Vaccines (in press). Another important monthly feature of the *Boletín* is the status report on the continent-wide *Aedes aegypti* eradication campaign.

The periodical statistical publications—the *Weekly Epidemiological Report* and the quarterly *Health Statistics*—appeared regularly during the year. Details on these publications are given under Health Statistics.

The bimonthly bulletin *Erradicación de la malaria* was issued regularly (Nos. 13-18) with a pressrun of 550 copies, for the purpose of providing up-to-date reports on technical and administrative developments in the malaria eradication campaign, for the benefit of the interested national services and of Bureau staff engaged in anti-malaria work. Beginning in 1960, an English translation of this periodical was also prepared, in editions of 60 copies for distribution to field workers.

Special Publications

During 1960 the Special Publications series included a total of 43 publications, with 4,459 pages and a total of

107,070 copies printed. Of these, the summary breakdown for the three series was:

	Number of Publications	Pages	Copies Printed
Scientific Publications	10	2,097	27,420
Miscellaneous Publications	25	917	72,200
Official Documents	8	1,445	7,450

The list of all the publications printed in the three series is given in Table 35.

The Scientific Publications series, designed to meet the ever-increasing need for up-to-date technical and scientific literature on activities and advances in the public health field, included in 1960 a number of publications of special importance to the work of PAHO. Notable among them was the volume *Live Poliovirus Vaccines—Papers Presented and Discussions Held at the Second International Conference on Live Poliovirus Vaccines* (6–10 June 1960, Washington, D. C.). The printing of this volume—a compilation of the 45 formal papers presented, the discussions held, and the Summary of the Conference—was made possible through the generous cooperation of the Sister Elizabeth Kenny Foundation, with whose assistance the Conference was held. A selection of the technical papers has been translated for distribution to public health workers in Latin America in the *Boletín* of PASB.

Another of the highlights was the undertaking of the Spanish translation and printing of the 9th edition of *Control of Communicable Diseases in Man*, published by the American Public Health Association. Five previous editions of this valuable handbook have already been published in Spanish by PASB with the authorization of the Association (in 1929, 1934, 1945, 1950, and 1955). The Bureau has also published two previous editions in Portuguese (1952, 1955) and the Portuguese version of the 9th edition, now in preparation, is scheduled for publication in 1961.

Other technical publications during the year included the *Manual of the Microscopic Diagnosis of Malaria*, prepared and published in both English and Spanish, and the Spanish edition of the 1959 manual of *Serologic Tests for Syphilis*, translated and published with the authorization of the United States Public Health Service. Also prepared and published was the Spanish manual on health factors in the construction and operation of slaughterhouses.

Of special statistical value was the volume *Reported Cases of Notifiable Diseases in the Americas, 1949–1958*, as were the two publications *Guide for the Reports on the Aedes aegypti Eradication Campaign in the Americas* and the *Advisory Committee on Statistics, First Report*, issued in Spanish and English editions. These publications are discussed elsewhere in this report.

Other publications included the annual reports of the Pan American Foot-and-Mouth Disease Center, prepared in

English, Spanish, and Portuguese; the report on the International Course on Malaria and Other Arthropod-Borne Diseases; and the reports of the Conference on Schools of Public Health and of the 1959 International Foot-and-Mouth Disease Conference. Informational pamphlets covered a variety of subjects, including child mortality in the Americas, yellow fever, the work of the Pan American Zoonoses Center, and the aims and work of PAHO.

An important project of PASB during the year was the volume *Health in the Americas and the Pan American Health Organization*, prepared by the Bureau at the specific request of the Subcommittee on Reorganization and International Organizations of the United States Senate. Its purpose was to bring together the most up-to-date information on major health problems in the Americas and the quality and quantity of existing resources for their solution, and to estimate future needs. The Senate Subcommittee printed the volume in English, and Spanish and Portuguese editions were published simultaneously by the Bureau.

The Official Documents series, prepared and published in English and Spanish, constitutes an integral part of the meetings of the Governing Bodies, furnishing essential background material for the Representatives of Member Governments and giving a complete record of the deliberations of the meetings. The volumes issued in 1960 were: *Proposed Program and Budget Estimates, 1961–1962*; the *Annual Report of the Director, 1959*; the *Financial Report of the Director and Report of the External Auditor, 1959*; and the *Proceedings of the XI Meeting of the Directing Council* (Washington, D. C., September 1959).

Reference Services

Library

The Library continued to fulfill its primary purpose of providing reference services to the Organization's staff at Headquarters and in the field.

In 1960 the Library was transferred to the Professional Education Branch. The Library Committee was reconstituted and met frequently to review the needs of Headquarters and field staff, and of national health authorities for reference services. Present holdings and library practices were reviewed, and recommendations were made to the Director.

The collection needs to be kept continually under review, especially since the present restricted physical facilities demand that what is no longer useful be discarded. This year, the collection of pamphlets and reprints was completely overhauled. Material no longer needed or not germane was offered to medical libraries in Latin America, the United States Book Exchange Center, and the Medical Library Exchange.

TABLE 35. SPECIAL PUBLICATIONS ISSUED IN 1960

Serial No.	Title	Pages	Press-run
<i>Scientific Publications</i>			
44	Principios de administración sanitaria, J. J. Hanlon	590	500
45	Aspectos sanitarios a considerar en la construcción y operación de mataderos	68	3,920
46	Manual del diagnóstico microscópico de la malaria	83	2,000
46	Manual of the Microscopic Diagnosis of Malaria	77	1,500
47	Manual de reacciones serológicas para el diagnóstico de la sífilis	159	2,000
48	Casos notificados de enfermedades de declaración obligatoria en las Américas, 1949-1958	84	2,000
48	Reported Cases of Notifiable Diseases in the Americas, 1949-1958	83	1,000
49	Conferencia sobre escuelas de salud pública (2-7 noviembre, 1959, San Miguel Regla, Hidalgo, México)	18	500
50	Live Poliovirus Vaccines—Papers Presented and Discussions Held at the Second International Conference on Live Poliovirus Vaccines (6-10 June 1960, Washington, D. C.)	634	2,000
51	El control de las enfermedades transmisibles en el hombre (Informe oficial, Asociación Americana de Salud Pública) Novena edición	301	12,000
<i>Miscellaneous Publications</i>			
36	Child Mortality in the Americas (reprint)	24	5,000
49	Guía de los informes de la campaña de erradicación del <i>Aedes aegypti</i> en las Américas	17	1,000
49	Guide for the Reports on the <i>Aedes aegypti</i> Eradication Campaign in the Americas	17	1,000
50	The Pan American Zoonoses Center (reprint)	12	5,000
50	O Centro Pan-Americano de Zoonoses	12	5,000
50	El Centro Panamericano de Zoonosis (reprint)	12	5,000
53	La salud en las Américas y la Organización Panamericana de la Salud	112	10,000
53	A Saúde na América e a Organização Pan-Americana da Saúde	112	2,000
	Health in the Americas and the Pan American Health Organization*	105	1,000
54	PAHO, What It Is . . . What It Does . . . How It Works	24	10,000
54	La OPS, su finalidad . . . sus actividades . . . su estructura	24	5,000
54	OPAS, o que é . . . o que faz . . . como funciona	24	2,000
55	Conferencia Internacional Antiaftosa (12-18 abril 1959, Bogotá, Colombia)	158	1,000
56	Informe anual del Centro Panamericano de Fiebre Aftosa, 1958	30 (est.)	500
		in press	
56	Annual Report of the Pan American Foot-and-Mouth Disease Center, 1958	30 (est.)	500
		in press	
56	O Relatório Anual do Centro Pan-Americano de Febre Aftosa, 1958	30 (est.)	500
		in press	
57	On Health and Wealth	16	5,000
57	La salud y el bienestar económico	20	5,000
58	Yellow Fever—Unfinished Business	8	5,000
59	XVIII curso internacional de malaria y otras enfermedades meraxénicas (16 de enero-27 de junio de 1960, Maracay, Aragua, Venezuela)	13	600
60	Informe anual del Centro Panamericano de Fiebre Aftosa, 1959	30 (est.)	500
		in press	
60	Annual Report of the Pan American Foot-and-Mouth Disease Center, 1959	30 (est.)	500
		in press	
60	O Relatório Anual do Centro Pan-Americano de Febre Aftosa, 1959	30 (est.)	500
		in press	
61	Advisory Committee on Statistics, First Report (20-21 June 1960, Washington, D. C.)	19	300
61	Comité asesor en estadística, primer informe (20-21 junio 1960, Washington, D. C.)	8	300
<i>Official Documents</i>			
31	Proposed Program and Budget of the Pan American Health Organization, 1961-1962	269	350
31	Proyecto de Programa y Presupuesto de la Organización Panamericana de la Salud, 1961-1962	269	350
32	Proceedings, XI Meeting, Directing Council of the PAHO, XI Meeting, Regional Committee of the WHO for the Americas	248	1,000
32	Actas, XI Reunión del Consejo Directivo de la OPS, XI Reunión del Comité Regional de la OMS para las Américas	263	1,050
33	Financial Report of the Director and Report of the External Auditor, 1959	63	350
33	Informe Financiero del Director e Informe del Auditor Externo, 1959	63	350
34	Annual Report of the Director of the Pan American Sanitary Bureau, 1959	132	2,000
34	Informe Anual del Director de la Oficina Sanitaria Panamericana, 1959	138	2,000

* U. S. Government Printing Office, 1960.

The archives of the Organization, comprising the originals of agreements signed with Member Governments and nongovernmental organizations, were transferred to the Library for safe-keeping and maintenance.

The Headquarters Library continued to provide the six Zone Offices and one Field Office with bibliographical material, including books, periodicals, and photocopies. Answers to a questionnaire sent to each Zone Representative during the year to find out the value of the Library's services to field staff indicated that no major change was required for the time being.

The Library continued to furnish copy for the "Biblioteca" section of the *Boletín de la Oficina Sanitaria Panamericana* as well as for the section on medicine and public health of the *Inter-American Review of Bibliography*, a publication of the Department of Cultural Affairs of the Pan American Union.

Consideration was given to the future expansion of library services, and estimates of space requirements for the next

20 years were prepared in connection with the plans for the new building.

Five medical librarians visited the Library during the year; two from Japan, and one each from Thailand, Peru, and the Territory of Papua and New Guinea. A program of visits to other medical libraries in Washington, D. C., was arranged for the librarian from Thailand.

During the year, 1,231 books were classified and catalogued and 551 pamphlets were classified. Of the 8,834 catalogue cards prepared, 702 were sent to the WHO Library in Geneva and 538 to the Union Catalogue at the Library of Congress in order to keep libraries fully informed of what is available in the Bureau Library. Five thousand three hundred and seventy-four WHO documents and publications and 4,532 issues of serial publications were received.

During 1960, 4,173 requests for information were answered; 2,535 loans were made; and 2,613 pages of photocopy were supplied.

Public Information

As a result of further contacts with the press throughout the Hemisphere and the initiation of new projects the Organization enjoyed more and better publicity in 1960 than in any previous year.

Public Relations

One hundred and two films about the work of WHO were loaned to educational institutions and civic organizations and additional copies of many of them were placed with the Zone Offices to enable the increasing number of requests from Latin America to be satisfied. About 300,000 pieces of PASB/WHO information material and nearly 500 information kits were distributed. Some 3,000 inquiries were answered.

Lectures on the work of PASB/WHO were given to interested groups in the United States of America, Canada, and, to a lesser extent, Latin America by PASB staff and members of WHO Expert Committees.

Mass Communications Media

In order to reach the largest possible audience throughout the Hemisphere, the Office of Public Information devotes a great part of its efforts to placing news material with the press, radio, and television.

Press

The Organization issued 54 spot news and feature releases during the year, and the three main "movers" of PASB/WHO news—the Associated Press, the United Press International, and the United States Information Agency (USIA)—filed more stories on the work of the Organization in the Member Countries than during any previous year. This increase in the movement of PASB/WHO news was chiefly due to advance planning and closer contacts with journalists. Major interest in PASB/WHO activities was stimulated by the extensive press and radio coverage given to the Second International Conference on Live Poliovirus Vaccines, held in Washington, D. C., 6-10 June.

Publicity in Latin America was particularly good during the year. A contract signed the second part of 1959 with a Brazilian firm for the translation and distribution of PASB/WHO press releases resulted in greatly increased publicity in Brazil.

One of the services initiated in 1960 was the distribution to newspapers of illustrated features, each of which consists of a text of 200-400 words, together with a photograph mounted on a two-column "mat." This mat service enables newspapers to use both photo and text immediately and at very little cost. Seven such mats were produced, and all received an exceptionally enthusiastic reception throughout the Hemisphere. Another innovation was the

institution of a photo-feature service. This service differs from the mat service in that the text is generally longer—500–800 words—and therefore more detailed, and may include as many as three glossy prints. An explanation of the significance of the particular photo-feature is part of the service.

This year, the usual kit distributed on the occasion of World Health Day, 7 April, included, as an experiment, a letter with a “suggested topic for editorial comment” and a fact or background sheet. The “suggested topic” letter prompted local and national newspapers throughout the Hemisphere to print editorials advocating increased support of the world-wide malaria eradication campaign, the theme for the 1960 World Health Day. Among the many important newspapers that published editorials were *O Globo* of Rio de Janeiro; *El Mercurio* of Santiago, Chile; *El Comercio* of Lima, Peru; the *Richmond Times-Dispatch*; *The New York Times*, and the three leading daily newspapers of Washington, D. C.

During 1960 the Organization also had its best coverage in magazine journalism. Among many others, *Time*, *Life*, *Life en Español*, *The Saturday Evening Post*, *Visión-Visão*, *U. S. News and World Report*, *Newsweek*, *Americas*, and the English, Spanish, and Portuguese editions of the *Reader's Digest* published one or more stories about the Organization and its role in improving international health.

Radio

Efforts in this field were significant, though limited. Through the facilities of the Voice of America, the radio service of the Organization of American States, and the United Nations Radio, more than a dozen interviews with Organization officials were taped for direct distribution to radio stations throughout Latin America. On several occasions shortwave broadcasts of such interviews were beamed directly to the countries.

A “timed radio release” service was launched during the year. The information is condensed to mere essentials and each release is clearly marked with the number of minutes and/or seconds necessary for the average announcer to read it. This type of service is proving to be an effective means of disseminating PASB/WHO information.

Television

Activities in this field, although limited, were important. The public information staff worked with several dozen television stations in both North and Latin America in preparing programs on international public health. In some instances, PASB/WHO officials participated in “live” television shows.

The organization's best TV coverage, however, was the result of cooperation with private and major network stations. The stations were provided with films and whatever

technical and other information was needed to present an adequate program on the work of the World Health Organization. In every case the Offices of Public Information in Washington and Geneva assisted in producing the programs, which were carried by a number of nation-wide television networks in the United States of America during 1960.

A video mat service, similar to that already mentioned for newspapers, was introduced during the year. This service consists of 100–300 words of text and a wide, especially treated photograph that can be reproduced on the television screen. A great boon to the PASB/WHO public information staff TV efforts during 1960 was the launching by the USIA of a program in Spanish and Portuguese entitled “Panorama Americano.” This show, which is produced weekly and sent to 15 of the Latin American countries, reaches an audience of about seven million viewers. The program has used all available PASB/WHO television stories and has expressed willingness to use as much material as the Organization can provide.

Lack of especially trained staff for radio and television work, as well as lack of funds for production of film footage, are the main obstacles to increasing the TV-radio publicity program.

Exhibits

For the first time, attractive literature describing some of the PASB/WHO activities was prepared to accompany exhibits, and 31,000 pieces were distributed from the Organization's exhibit stands during the course of the year.

Exhibits were shown at 17 meetings and conventions, at two schools of medicine, and at four schools of veterinary medicine in the United States of America. Spanish-language exhibits were displayed during meetings in Mexico City, Havana, and Montevideo.

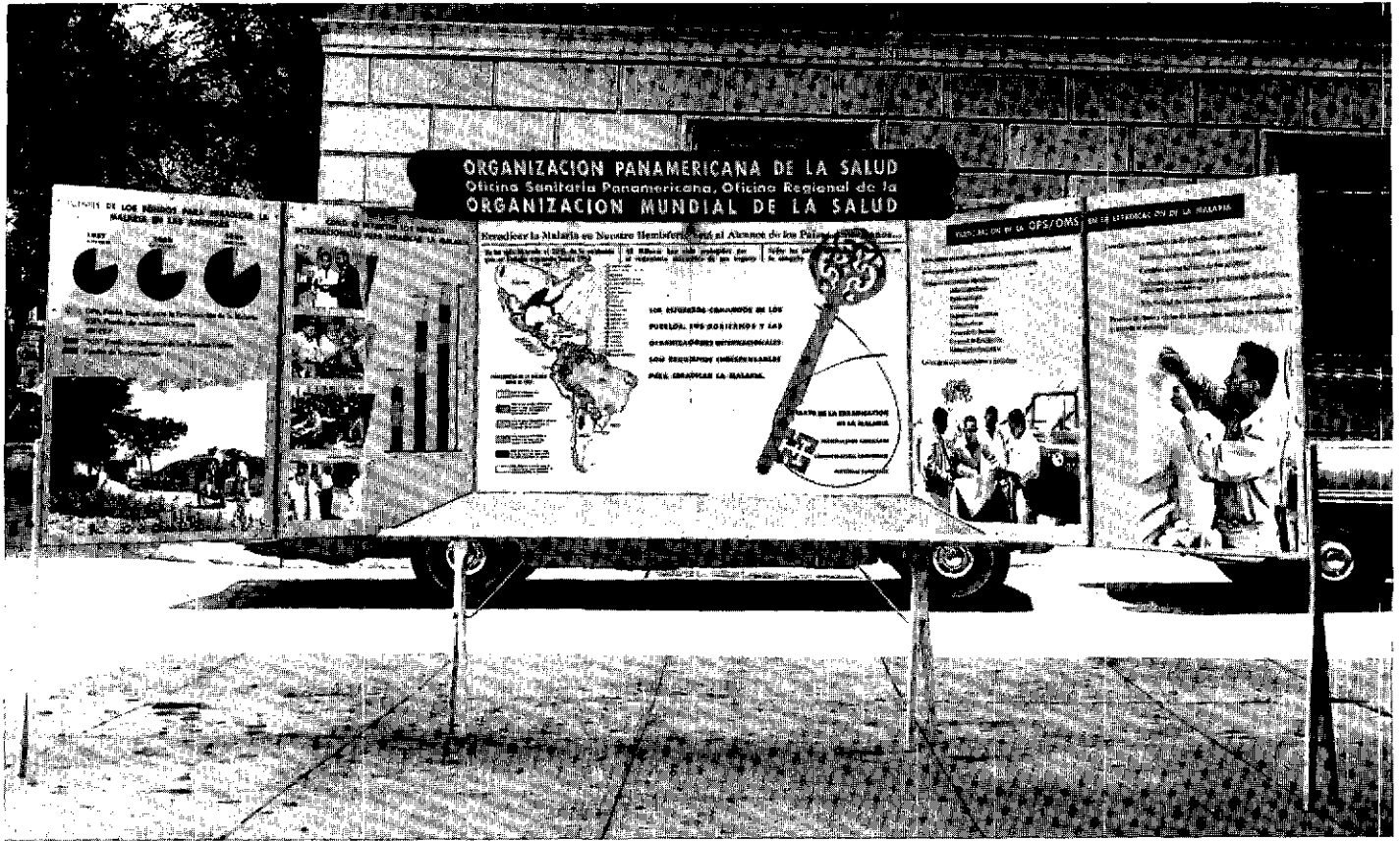
An innovation during the year was the incorporation of message-repeating devices in PAHO/WHO exhibits. Scripts describing the Bureau's work in the fields of child health, rehabilitation, and urban water supply were prepared and recorded by the staff of the Visual Aids Section.

The PAHO/WHO exhibit displayed at the annual meeting of the American Public Health Association in San Francisco, California, was awarded a Certificate of Merit.

Photographic Services

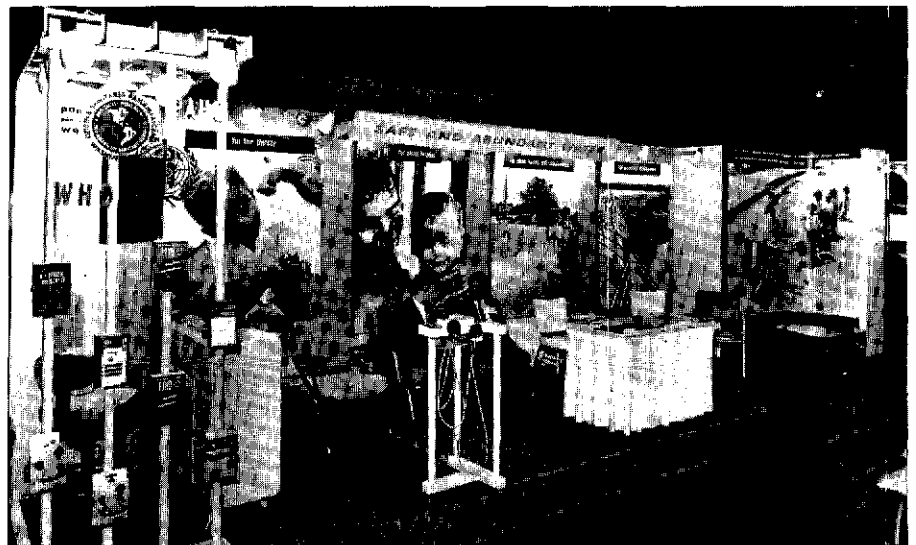
More than 4,000 captioned prints—excluding those used in mats and photo-feature releases—were supplied to freelance writers, publishing houses, civic groups, photo-wire services, and nontechnical and medical magazines, teachers, health educators, and other interested persons and groups, as well as to the Zone Offices for use in connection with programs.

During the year, 264 negatives were added to the Bureau's



Malaria exhibit supplied to the Spanish-speaking Zone Offices

Award-winning exhibit displayed at the 1960 Annual Meeting of the American Public Health Association in San Francisco, California



photographic files, which now contain some 7,000 negatives.

In addition, 264 projection slides were prepared and furnished to the Bureau's professional staff for use in lectures on the work of PASB/WHO.

Graphic Services

Nearly 600 maps, charts, and graphs were prepared by the Visual Aids Section during the year. These included illustrations for 17 articles published in the *Boletín*, and for 30 publications—11 of which were designed by the

Section—including the report on *Health in the Americas and the Pan American Health Organization, Reported Cases of Notifiable Diseases in the Americas, 1949-1958*, and the *Annual Report of the Director, 1959*.

Nearly 1,500 drawings were made for different sections of the Bureau, and color separation plates of a poster, of which 30,000 copies were distributed to the national malaria eradication campaigns, were designed and prepared.

Other Activities

PAHO Information Series

A PAHO Information Series, consisting of flyers on specific subjects, was initiated during 1960. The first two are *Then and Now—Past and Present in the Fight for Better Inter-American Public Health* and *Malaria Eradication in the Americas—The First Six Years in the Hemisphere-Wide Campaign*. These two flyers, already being distributed in English, Portuguese, and Spanish, will be brought up to date every two years.

The Office of Public Information also prepared the text of the booklet *The Pan American Health Organization—What It Is, What It Does, How It Works*.

Staff Information Program

Seeing that its staff is the Organization's internal public, that a well-informed staff works with more enthusiasm, and that each staff member can make a personal contribution by disseminating information of a general nature on the work of the Organization, the Office of Public Information initiated in 1960 the first information program for staff members in the history of the Bureau. Thus far this program consists in the preparation and distribution to each staff member of memoranda on significant PAHO/-WHO developments; the mailing of *World Health* to their homes for the benefit of family and friends; the display on small bulletin boards of pictures relating to a national or Regional program; and the circulation of information on special events such as the showing of films, World Health Day, and Pan American Week.

RESEARCH ACTIVITIES

The year 1960 may be considered noteworthy for the initiation of the expansion of research in the Americas by the Organization. The most important development was the "statement of arrangements" between the United States Public Health Service and the Pan American Health Organization, announced jointly in mid-December. The agreement brings into focus three primary points: staff collaboration between the PAHO and the USPHS; development of PAHO research activities; and definitions of the forms of the USPHS aid that may be applied to the PAHO research activities.

The Organization will provide moderate support to certain research projects and programs, conduct some research through its own staff, coordinate research projects involving several countries, and aid in the development of medical research activities throughout the Hemisphere. The USPHS will consider proposals for grants to investigators who wish to participate in research programs coordinated by the Organization, and applications for support of research conducted by staff members of the Organization. The National Institutes of Health will continue to provide grants to investigators doing research work in the fields related to the objectives of its several institutes and directed toward the solution of health and disease problems of major importance in the United States of America.

The Organization, as an international agency, has pioneered with research programs at the Institute of Nutrition of Central America and Panama, the Pan American Foot-and-Mouth Disease Center in Brazil and the Pan American Zoonoses Center in Argentina. The funds for these research programs have been obtained from many sources, and the countries in which these centers are located have made significant contributions through provision of facilities. As is reported elsewhere, the most important feature of the research program at the Foot-and-Mouth Disease Center continues to be the development of a modified live virus vaccine, while several different research programs in nutrition are in operation at INCAP. Activities and research in the fields of brucellosis, hydatidosis, rabies, tuberculosis, leptospirosis, anthrax, trichinosis, and salmonellosis were continued at PAZC.

The Inter-American Atherosclerosis Study, which is supported by an NIH grant, was initiated during the year. This is the first geographical study of disease undertaken

in the Hemisphere and 13 pathologists from Brazil, Chile, Colombia, Costa Rica, Guatemala, Jamaica, Peru, Puerto Rico, the United States of America, and Venezuela are participating in it. A protocol planning conference was held in January 1960, and the collection of specimens of aortas, coronary arteries and other arterial specimens, was started in the first half of the year. An epidemiological study of cancer, and of cardiovascular and other chronic diseases was planned, and the development of comparable mortality statistics will be an important step in the geographical study of these diseases.

A research project on infantile diarrhea and malnutrition, which is financed by NIH, is being carried on in Lima. Work is directed toward elucidating the nature of the alterations in water and electrolyte metabolism in malnourished infants suffering with diarrhea. These findings, together with the knowledge already available, will be applied to the development of methods for treatment in areas where laboratory and hospital facilities are minimal or nonexistent.

A variety of research was undertaken within the framework of the Organization's malaria eradication activities. A research officer was appointed for malaria eradication work; a statistical analysis of the nature and degree of insecticide resistance of *A. albimanus* was undertaken; field trials of insecticide sprayers of new design were conducted in El Salvador; special studies on the resistance of anophelines to insecticides were carried out in Bolivia and El Salvador; and a grant was made to the School of Hygiene and Public Health of Johns Hopkins University to provide for the maintenance of separate colonies of resistant and susceptible anophelines. A special team undertook epidemiological research on the causes of persisting malaria transmission in Costa Rica and El Salvador. Other research topics of current interest are the studies of the resistance of *P. falciparum* to chloroquine in the Magdalena Valley of Colombia and the chemotherapy of malaria with chloroquinated salt in the Amazon Valley of Brazil.

In response to the growing interest in the economic implications of malaria eradication and a specific recommendation of the Directing Council, the Organization encouraged the Bureau of Public Health Economics of the School of Public Health, University of Michigan, to undertake research on this subject. In addition, the Organization not

only supported the principal investigator in his application to the NIH for a research grant but also agreed to back the program with a sum equal to 10 per cent of the grant. The NIH provided \$95,000 to be spent over a three-year period on research into the economic impact of malaria eradication and, consequently, the Organization has allotted \$9,500 to the project. Further assistance will be given in selecting appropriate areas for field operations in the Americas.

The Organization has actively promoted the teaching of medical statistics, and at a meeting in 1958, attended by consultants who participated in the South American Conference on Teaching of Medical Statistics, plans were made for developing this activity which included the provision of an intensive short course in this subject. When the Advisory Committee on Statistics met in June 1960, it recommended that an application be made to the NIH for funds to finance such a course. As a result, the professor of biostatistics of the School of Public Health of the University of São Paulo submitted an application for a graduate training grant entitled Training in Statistics in Medical Sciences. A grant was awarded which provides for a six-week course to be given in two consecutive years for the members of the faculties of medical schools who are interested in statistics and have ability to further the statistical activities among their colleagues. This is the first grant of this type to be awarded to a school of public health outside the United States of America, and the school will be pioneering in this field. The Organization will render assistance to the São Paulo School of Public Health by disseminating information about the course, selecting the persons to be

awarded fellowships and providing the services of a short-term consultant.

Staff members of the Organization participated in the planning of several research projects including the renewal of the NIH grant to the Department of Zoology, University of Mexico, for research on the ecology of rabid bats; the renewal of the grant to the Ontario Veterinary College of Canada for the study of atherosclerosis in pigs; and a study of laboratory animal resources and training facilities for personnel engaged in the production, in the maintenance, and in the use of laboratory animals in Canada. The last two projects are financed by Canadian research funds. A staff member also participated in the U. S. National Research Council's planning for a study of the laboratory animal resources in this country and for a Zoonosis Research Center at the University of Illinois. Plans are being drawn up for the establishment of medical research stations in the Andes, a project of the University of San Marcos, Peru, and will be submitted to the United Nations Special Fund with a request for a grant. A research project, Mexico-United States Border Rabies Field Epidemiological Studies, has been prepared, and an application for a research grant made to the NIH.

Research activities in the field of poliomyelitis are reported in the relevant section.

Thus research is emerging as a specific activity of the Organization, and the expansion which began in 1960 will probably result in a major increase in understanding of the epidemiology of diseases in the Americas.

ADMINISTRATIVE DEVELOPMENTS

The year 1960 saw a number of important advances in the administrative work of the Organization. On 28 March 1960 the President of the United States of America signed Public Law 86-395 authorizing the donation of a site for the permanent Headquarters building of the Pan American Health Organization; and on 31 August 1960 his signature of Public Law 86-678 appropriated the money to purchase a building lot at Virginia Avenue and 23rd Street in Washington, D. C. This lot is in the Northwest section of the Capital and has an area of 45,644 square feet.

At its XII Meeting (Havana, August 1960) the Directing Council approved (1) the methods of selecting architects, engineers, and contractors; (2) the estimated space requirements; (3) the facilities to be included; (4) the estimated costs; and (5) the methods of financing. With respect to the first item, the Council specifically approved the holding of an international competition for the design of the new building. The competition would be open to qualified architects of the Western Hemisphere, and would be held in accordance with the rules of the International Union of Architects and the American Institute of Architects (AIA). In December the Organization entered into a contract with Mr. Leon Chatelain, Jr., past President of the AIA, who was to prepare the conditions of and direct the competition.

The new Headquarters building will come none too soon; in 1960 it became necessary to rent an additional 3,000 square feet of office space to alleviate the serious overcrowding in the three buildings that house the Headquarters staff.

Collaboration in Administrative Practices

The staff of the Division of Administration continued and expanded activities designed to improve administration in the health agencies of the Member Governments. The work was concentrated in Zones VI and III. In Zone VI the Organization's Administrative Methods Consultant assisted in the development of an improved budget for the Ministry of Health of Paraguay. He also aided in the establishment of systems and procedures for the Ministry's automobile maintenance facility. In addition, the groundwork was laid for the initiation of projects to improve supply management and personnel administration in the Ministry of Health of Chile.

A Seminar on the Management and Organization of Public Health Services in Central America and Panama was held from 14-25 November 1960 in San José, Costa Rica. It was attended by the directors general and directors of administration of the public health services of the Governments within the Organization's Zone III, the Deputy Minister of Labor, Social Welfare, and Health of Panama, and technical specialists from cooperating international organizations. Discussions were held on the organization of the public health services and administrative services in each participating country, and special technical papers on a variety of administrative topics were presented. A report on the proceedings was published by the *Escuela Superior de Administración Pública de América Central* (ESAPAC), which cooperated with the Organization in preparing the seminar.

The participants suggested that the report, because of its importance, should be discussed at the Meeting of Ministers of Public Health of Central America and Panama to be held in Tegucigalpa, Honduras, in 1961.

The staff of the Division also continued to assist in the administrative sections of general training programs organized by technical branches of the Bureau. They presented to PASB/WHO and ICA sanitary engineers certain parts of the Training Course on Administration, Management, and Financing of Water Supplies. This course was held at the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio, from 28 March to 13 April 1960. Division staff also presented the section on administration in several courses held at the Training Center for Malaria Eradication in Kingston, Jamaica, and organized a complete training course for all PASB/WHO administrative methods consultants assigned to the malaria eradication program.

Other Developments

The Subcommittee on Basic Documents of the Pan American Health Organization, with the assistance of the Division of Administration, continued the work of revising the texts of the Constitution and of the Rules of Procedure of the Governing Bodies.

A new staff health insurance plan was inaugurated in January 1960. During the first year of operation claims amounted to 51.5 per cent of contributions. Many important



AERIAL PHOTO LOOKING SOUTHEAST

policy and procedural problems were solved with the help of the Surveillance Committee, which is composed of representatives of the Director and of the staff.

This was also the first full year of the operation of the Conference and Publications services as part of the Division of Administration. The transfer of this Branch from the Office of the Director has both lightened the load of that office and facilitated the coordination of administrative services for meetings.

Management Services

The Management staff completed its survey of the organization, staffing, and procedures of the Finance Section. It also completed a study of the administrative activities within the Fellowships Branch.

The Management staff continued work on the *PASB/WHO Procedural Manual* and issued approximately 700 new or revised pages during the year. An index to the *Manual* was also prepared. The *Manual*, which consists of three volumes, now contains 1,200 pages.

Personnel

At the end of 1960 the regular staff of the Organization numbered 837, of whom 407 were international staff and 430 locally recruited. There were 229 persons at Washington Headquarters and 608 in Zone Offices and field projects. The percentage increase in the total PASB/WHO staff was 7.58 over that in 1959. Staff at Headquarters, however, increased by only 3.15 per cent, whereas project staff increased by 11.08 per cent.

The staff of the Personnel Section assisted in the preparation of documentation for the review by the Consultative Committee on Administrative Questions (CCAQ) of the international salary scale and the UN Joint Staff Pension Fund.

The new plan for the Pension Fund approved by the Fifth Committee of the UN will become effective on 1 April 1961, on approval by the UN General Assembly. The new scheme makes provision, among other things, for increased pensionable remuneration; limited withdrawal rights after a six-year transitional period, during which present withdrawal rights will be retained; liberalized widows' benefits; increased children's benefits; increased disability benefits; and secondary dependent's benefits where there is no widow or child.

As a result of surveys carried out in coordination with the United Nations, local wage scales were revised for four PASB/WHO duty stations. Post adjustment rates, which take into account cost of living differentials for international staff members, were revised at 21 duty stations.

Budget and Finance

The PAHO regular budget approved for 1960 exceeded that of 1959 by 9.8 per cent. Table 37 summarizes the funds budgeted for 1960 and their sources.

TABLE 36. COMPARATIVE STAFF STRENGTH, 1959-1960*

Location	1959	1960	Per cent increase
Total	778	837	7.58
Headquarters	222	229	3.15
Zone and Field Offices	105	107	1.91
Projects	451	501	11.08

* As of 31 December 1959 and 31 December 1960; excludes temporary personnel and short-term consultants.

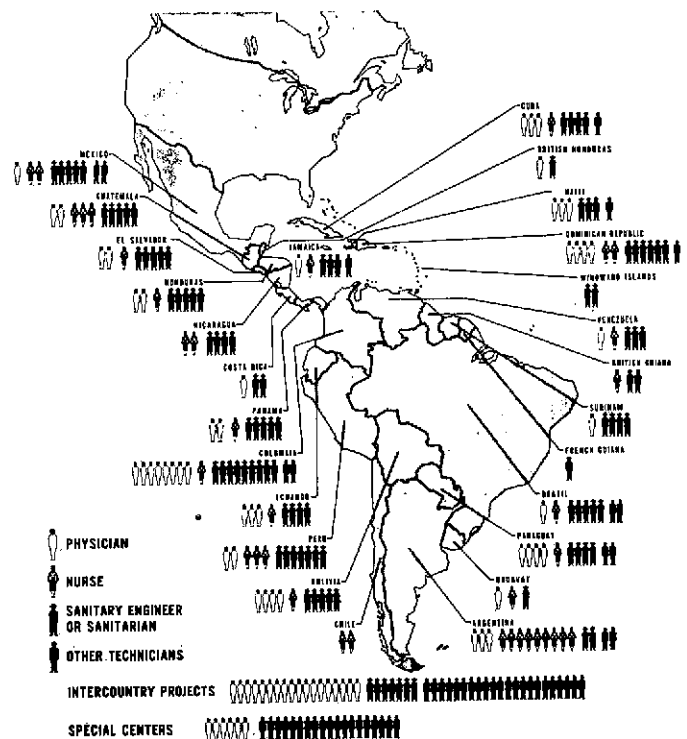


Fig. 22. International Professional Personnel Assigned to Projects in the Americas, December 1960.

The total funds administered by the Organization in 1960 exceeded those of 1959 by 7.2 per cent. These funds came from a variety of sources, but were administered as financial support for a unified plan. The expenditure of funds from the several sources administered by the Organization in 1960 is shown in Table 38.

Quota payments were considerably lower in 1960 than in 1959. Receipts of current quotas amounted to 76.3 per cent of the assessed budget, as compared with 81.4 per cent in 1959. Receipts of arrears due at the beginning of the year were 45.9 per cent, whereas in 1959 they were 66.1 per cent. In 1960 the total receipts of current quotas and

TABLE 37. FUNDS BUDGETED FOR PASB/WHO IN 1960

PAHO Regular Budget	\$4,100,000
PAHO/SMF	3,120,600
PAHO Special Community Water-Supply Fund	200,000
Grants and other contributions to PAHO OAS/PTC	261,234
INCAP Regular Budget	403,600
Grants and other contributions to INCAP	105,000
	270,400
PAHO total	\$8,460,834
WHO Regular Budget	1,805,884
WHO Malaria Eradication Special Account	11,600
WHO Technical Assistance	915,350
WHO total	\$2,732,834
Total PAHO/WHO	\$11,193,668

arrears for previous years was 70.5 per cent of the amounts due; in 1959 it was 78.4 per cent.

In 1960, expenditures exceeded income from quotas and other sources for the PAHO Regular Budget by \$38,150. This deficit was covered by withdrawal from the Working Capital Fund. In 1959 there was a cash surplus of \$207,173, which was transferred to the Working Capital Fund. In accordance with the policy recommended by the Executive Committee and approved by the Directing Council, the budget appropriation for 1961 includes an allocation of \$300,000 to the Working Capital Fund. The annual allocation of this amount will gradually raise the Working Capital Fund to its authorized level.

The Directing Council at its XII Meeting approved a PAHO Regular Budget of \$4,800,000 for 1961, which, if the amount of \$300,000 for the Working Capital Fund is excluded, represents an increase of 9.76 per cent over that for 1960. The WHO Regular Budget approved for 1961 included \$1,805,884 for the Region of the Americas, an increase of 4.1 per cent over 1960.

A number of procedural improvements in financial management were made at Headquarters and field establishments. The Division made further progress in the preparation of a new program budget and accounting system and established the major activity classifications and summaries needed in order to present a functional budget. The budgetary and financial controls at PAZC were completely revised. At INCAP, budgetary and financial analyses and controls were improved, and plans call for the transfer to INCAP during 1961 of the allotment controls and financial reporting on grant funds.

TABLE 38. EXPENDITURE OF FUNDS ADMINISTERED BY PASB/WHO IN 1960

PAHO Regular Budget	\$3,679,395
PAHO/SMF	1,979,550
PAHO Special Community Water-Supply Fund	142,411
PAHO Fire Settlement Fund	20,630
Grants and other contributions to PAHO OAS/PTC	292,921
INCAP Regular Budget	378,614
Grants and other contributions to INCAP	104,829
	366,304
PAHO total	\$6,964,654
WHO Regular Budget	1,757,148
WHO Malaria Eradication Special Account	11,791
WHO Technical Assistance	961,012
WHO total	\$2,729,951
PAHO/WHO total	\$9,694,605
Procurement services in the Americas for Government administrations, public institutions, etc.	331,202
Grand total	\$10,025,807

Supply

The Division of Administration continued procurement services on behalf of PAHO Member Governments and WHO Headquarters in Geneva, as well as for the regular operating needs of the Bureau.

Emergency purchases were made during 1960 for Cuba, Mexico, Nicaragua, and Venezuela under the Organization's Emergency Procurement Revolving Fund.

A number of drug-producing laboratories donated pharmaceuticals to several countries to enable them to meet local emergencies.

During this period negotiations were completed with the Communicable Disease Center of the USPHS for the purchase of filmstrips on health subjects at a reduced cost.

Conference and Publications

In 1960, conference and documents service, as well as language and editorial services were provided for the 40th Meeting of the Executive Committee, in Washington, D. C., and for the XII Meeting of the Directing Council and the 41st and 42nd Meetings of the Executive Committee, held in August in Havana, Cuba.

Similar services were provided for other conferences, seminars and meetings convened or sponsored by PASB/WHO. Staff of the Branch also provided translating and editorial services for the preparation and printing of PAHO's periodicals and special publications.

The number of pages translated during the year, excluding translations at meetings, were as follows:

<i>Language</i>	<i>Pages</i>
Spanish	7,322
English	1,713
Portuguese	913
Total	9,948 (1,989,600 words)

The coordination of distribution of publications was carried out during the year as a general responsibility of

the Conference and Publications Branch. The Distribution Unit operated under the administrative control of the General Services Office. Receipts from the sale of publications in 1960 amounted to \$5,262.06, an increase of \$4,316.06 over 1959. Table 39 shows the publications distributed in 1960 and in 1959.

TABLE 39. DISTRIBUTION OF PUBLICATIONS

General Distribution	1959	1960
Total	187,016	201,139
<i>Boletín de la Oficina Sanitaria Panamericana</i>	107,573	108,394
Special Publications	33,909	40,323
Other Publications	45,534	52,422

ORGANIZATIONAL MEETINGS AND TRANSACTIONS

The meetings of the Governing Bodies of the Pan American Health Organization held during 1960 were the 40th Meeting of the Executive Committee, 25-29 April, in Washington, D. C.; the XII Meeting of the Directing Council and the 41st and 42nd Meetings of the Executive Committee, 12-26 August, in Havana, Cuba.

Directing Council

The XII Meeting of the Directing Council, XII Meeting of the Regional Committee of the World Health Organization for the Americas, was attended by representatives of the Governments of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, France, Haiti, Honduras, Kingdom of the Netherlands, Mexico, Panama, Peru, United Kingdom, United States of America, Uruguay, and Venezuela. The Government of Canada designated an observer. Present also were observers from the OAS, UNICEF, UNESCO, the International Committee of Military Medicine and Pharmacy, seven nongovernmental organizations in official relationship with WHO, the Pan American Medical Confederation, and the Cuban Society of Public Health.

The Directing Council held 16 plenary sessions, an inaugural and a closing session, six sessions of the General Committee, and three sessions of the Committee on Credentials. It also devoted an entire day to the Technical Discussions.

Among the more important matters considered by the Council at this meeting, besides the report on accomplishments in 1959, were the program and budget of the Pan American Health Organization for 1961; the status of malaria eradication; the economic aspects of malaria eradication; *Aedes aegypti* eradication; smallpox eradication; development and utilization of INCAPARINA; progress report on community water-supply programs; economic aspects of health activities; training of health personnel in the Americas; advertising of medicinal products; secondment of officials to international health organizations by Member Governments; PASB collaboration in administrative practices of national health services; and General Program of Work of PAHO/WHO for the period 1962-1965.

The Council examined in detail the proposed program and budget of PAHO for 1961 and decided to establish the budget level for that year at \$4,800,000 as recommended by the Executive Committee at its 40th Meeting.

After examining the report on the status of malaria eradication presented by the Director, the Council reaffirmed its interest in the program and requested Member Governments to continue their efforts to complete the eradication campaigns in their respective territories. It expressed its thanks to the Governments that have contributed to the Special Malaria Fund, as well as to UNICEF and ICA for their collaboration in the program. The Council also gave special attention to the economic aspects of malaria eradication because of the influence of this disease on the economy of the countries affected.

With regard to the status of *A. aegypti* eradication, the Council declared the Republic of El Salvador free of the vector and called on countries and territories that were still infested to initiate eradication activities, if they had not already done so, or to intensify those under way, in accordance with the decisions taken at the XI Pan American Sanitary Conference.

The Council expressed its satisfaction with the success achieved by several Member Governments in eradicating smallpox from their territories, and with the development of nation-wide vaccination campaigns in other countries. It also recommended that Member Governments give special attention to the maintenance of adequate levels of immunity in the population in order to consolidate the gains already achieved.

With respect to the report on Vegetable Mixture No. 9, developed by the Institute of Nutrition of Central America and Panama under the name of INCAPARINA, the Council emphasized that the utilization of this product by certain countries would contribute greatly to the success of the campaign against malnutrition, especially in children. It recommended that the Member Governments, through their public health and related departments, study the potential value and the possibilities of producing INCAPARINA or similar local products, and the means of promoting the consumption of these products by the public.

Regarding the community water-supply programs, the

Council recommended that Member Governments include rural water programs in their total public health programs and that, when distributing funds for water-supply works in rural areas, they give due importance to health conditions in such areas. It asked the Director to continue his efforts to obtain additional voluntary contributions from every source possible, public and private, national and international, as well as his efforts with national and international financial institutions to have high priority accorded to requests for loans for water-supply programs. The Council also thanked the Governments of the United States of America and of Venezuela for their generous contributions to the Special Community Water-Supply Fund.

The Council considered the significance of the economic aspects of health activities and asked the Director to consult with the appropriate officers of the OAS and other organizations interested in or connected with public health, in order to study how the joint interests of these organizations in the economic field could be further developed.

Regarding the need for adequately trained health personnel in the Americas, the Council emphasized the importance of all efforts to expand the Organization's work in the field of education, and urged the Director to intensify his efforts to find extrabudgetary funds for expanding the educational program to the degree required.

After examination of the document on advertising of medicinal products, the Council instructed the Director to continue the study of the present situation with respect to the control of advertising of such products, and to report the results to the XIII Meeting of the Directing Council; and reiterated its recommendation that Member Governments adopt measures to prohibit false or misleading advertising of medicinal products.

In connection with the secondment of staff from Member Governments, the Council noted the difficulties being encountered in the recruitment of personnel for international public health work, and specifically in the secondment of staff from national health services; it therefore deemed it advisable for Member Countries to introduce into their legislation the provisions necessary to protect the rights acquired in their respective national services by officers seconded to international public health organizations.

The Council took note of the report presented by the Director on the collaboration of PASB in administrative practices of national health services and instructed him to report further on the progress of this program to the XIII Meeting of the Council.

After a detailed study of the Third General Program of Work of the WHO, as presented in Official Records No. 102, the Directing Council instructed the Director of PASB to prepare and submit to the XIII Meeting a General Program of Work for the PAHO for the period 1962-1965,

taking into account the comments made by delegations during the discussion of this topic.

Among the administrative and financial matters examined by the Council were the Financial Report of the Director and Report of the External Auditor for 1959 (Official Document No. 33), which it approved; the Emergency Revolving Fund; the collection of quota contributions; and the proposed program and budget of the WHO for the Region of the Americas for 1962, which was transmitted to the Director-General so that he might take it into consideration when preparing the WHO budget for that year. It also took note of the provisional draft of the proposed program and budget of the PAHO for 1962 and instructed the Director to give due consideration, in preparing the proposed program and budget for 1962 and in his consultations with the Governments on this matter, to the recommendations and comments made by several delegations.

After examining the report on buildings and installations for Headquarters, the Council again expressed its sincere thanks to the Government of the United States of America for the measures it had taken with respect to the donation of a site for the new Headquarters building of the Pan American Health Organization; authorized the Director of the Pan American Sanitary Bureau to accept, on behalf of the Organization, title to the land donated; approved the proposals of the Permanent Subcommittee on Buildings and Installations regarding the construction and financing of the new Headquarters building; and authorized the Executive Committee to act on behalf of the Organization in all matters relating to the construction of the building, and to redelegate this authorization to the Permanent Subcommittee on Buildings and Installations.

The report of the Subcommittee on Basic Documents of PAHO was also examined by the Council, which took note of the report, thanked the members of the Subcommittee for their work, and requested the Executive Committee to report further on the Subcommittee's activities to the XIII Meeting of the Directing Council.

The Council also devoted one day to the Technical Discussions on the topic "Technical, Administrative, Legal, and Financial Aspects of Garbage and Refuse Disposal." The Representative of Chile served as Moderator, an adviser to the Cuban Delegation as Rapporteur, and the Chief of the Environmental Sanitation Branch, PASB, as Technical Secretary. The preliminary statement on the Technical Discussions had been prepared by the special consultants the PASB Director had designated for the purpose. During the discussions, the Representatives of Cuba, El Salvador, and Venezuela also presented papers on garbage and refuse disposal in their countries. Subsequently, at a plenary session of the Council, the Moderator presented the report on the Technical Discussions, which summarized the views of the participants. The Council expressed its satisfaction with the manner in which the

discussions were conducted; recommended that health ministries adopt measures to promote and strengthen sound refuse-disposal practices in their countries and to provide adequately trained personnel for the management and operation of such services; and instructed PASB to furnish technical advice on refuse disposal and give every assistance practicable, within budgetary limitations, to Governments requesting programs in this field.

For the Technical Discussions of the XIII Meeting of the Directing Council, the topic selected was "Methods of Evaluation of the Contribution of Health Programs to Economic Development."

The Directing Council unanimously approved the Annual Report of the Chairman of the Executive Committee, presented by the Representative of Brazil, Chairman of the 39th and 40th Meetings, and congratulated the Chairman and Executive Committee members on the work performed. The report covered the activities of that Governing Body from September 1959 to August 1960 and included all topics examined and resolutions adopted during that period.

In electing the Governments of Argentina and Chile to fill the vacancies created in the Executive Committee on the termination of the terms of office of Mexico and Venezuela, the Council thanked the Governments of the latter countries for the services rendered to the Organization by their Representatives on the Committee. In addition to the newly elected Member Countries, the Committee is composed of Brazil, Colombia, El Salvador, Honduras, and the United States of America.

Executive Committee

The 40th Meeting of the Executive Committee was held in Washington, D. C., from 25 to 29 April 1960, and the 41st and 42nd Meetings of the Committee, in Havana, Cuba, on 12 and 17 August, and on 26 August 1960, respectively.

The Chairman of the 40th Meeting of the Committee was the Representative of Brazil, and the Representative of Colombia was Vice-Chairman. The meeting was also attended by the Representatives of El Salvador, Honduras, Mexico, the United States of America, and Venezuela, as well as by observers from Chile, Cuba, France, Guatemala, Kingdom of the Netherlands, and the Organization of American States.

The Committee examined in detail the proposed program and budget for 1961, prepared by the Director, and decided to submit it to the XII Meeting of the Directing Council, together with the report containing the Committee's observations and recommendations thereon. It recommended that the Directing Council establish the budget level for 1961 at \$4,800,000. The meeting's agenda included a series of other important technical, financial and administrative matters, to which reference is made under the respective

TABLE 40. INTERNATIONAL MEETINGS CONVOKED BY PASB/WHO OR HELD WITH ITS ASSISTANCE

Study Group on Chagas' Disease—Washington, D.C.—7-11 March
III Meeting of the PAHO Advisory Committee on Malaria Eradication—Washington, D. C.—14-16 March
XVIII Annual Meeting of the U. S.-Mexico Border Public Health Association—Hermosillo, Sonora, Mexico—4-8 April
40th Meeting of the Executive Committee of PAHO—Washington, D. C.—25-29 April
VIII Meeting of Directors of Malaria Eradication Services of Central America, Panama, and Mexico—San Salvador, El Salvador—16-21 May
Second International Conference on Live Poliovirus Vaccines—Washington, D. C.—6-10 June
Third Meeting of the WHO Expert Committee on Poliomyelitis—Washington, D. C.—13-16 June
Seminar on Nutrition Education—Quitandinha, Petropolis, Brazil—15-24 June
First Meeting of the PAHO Advisory Committee on Statistics—Washington, D. C.—20-21 June
Second International Foot-and-Mouth Disease Conference—Maracay, Venezuela—20-24 June
Seminar on Pollution of Sources of Water Supplies—Rio de Janeiro, Brazil—11-18 July and São Paulo, Brazil—19-23 July
XI Meeting of the Council of INCAP—Panama City, Panama—8-10 August
41st Meeting of the Executive Committee of PAHO—Havana, Cuba—12 and 17 August
XII Meeting of the Directing Council of PAHO—Havana, Cuba—14-26 August
42nd Meeting of the Executive Committee of PAHO—Havana, Cuba—26 August
Conference on Malnutrition and Food Habits—Cuernavaca, Mexico—9-14 September
Seminar on Water Rates—Montevideo, Uruguay—26 September-1 October
Seminar of Directors of Schools of Nursing—Paracas, Peru—3-19 November
Seminar on the Management and Organization of Public Health Services in Central America and Panama—San José, Costa Rica—14-25 November
Latin American Seminar on Alcoholism—Viña del Mar, Chile—21-26 November

topics of this report. Among them were the decentralization of PASB activities to the Zone Offices; the possibility of establishing a "Register of Areas Where Malaria is Eradicated" at the Pan American Sanitary Bureau; and the

TABLE 41. SELECTED LIST OF INTERNATIONAL OR NATIONAL MEETINGS TO WHICH PASB WAS INVITED DURING 1960

Twenty-fifth Session of the WHO Executive Board— Geneva, Switzerland—19 January—1 February	New York, N. Y.—25—29 July
VI Pan American Congress of Ophthalmology—Caracas, Venezuela—31 January—7 February	Fifth International Poliomyelitis Conference—Copen- hagen, Denmark—26—28 July
First Assembly of the Board of Governors of the Inter- American Development Bank—San Salvador, El Salvador—3—10 February	Fifth Inter-American Conference on Agriculture—Mexico City, Mexico—8—20 August
Water Resources Meeting on Ground Water Develop- ment—United Nations, New York, N.Y.—15—20 February	Sixth FAO Regional Conference for Latin America— Mexico City, Mexico—8—20 August
International Conference on Asian Influenza—National Institutes of Health, Bethesda, Maryland—17—19 February	VI Inter-American Congress of Cardiology—Rio de Janeiro, Brazil—14—20 August
IX Meeting of the Inter-American Committee on Social Security—Mexico City, Mexico—24—26 March	III International Congress of Physical Medicine— Washington, D. C.—21—26 August
Fourteenth Session of the U. N. Commission on the Status of Women—Buenos Aires, Argentina—28 March—14 April	VIII World Congress of the International Society for the Welfare of Cripples—New York, N. Y.—28 August—2 September
67th International Health Congress—Torquay, Devon, England—25—29 April	Fifth International Congress on Nutrition—Washington, D. C.—1—7 September
FAO International Meeting on Veterinary Education— London, England—25—30 April	Third Conference of the International Association of Universities—Mexico City, Mexico—6—12 September
Second Meeting of the Special Committee of Experts to Consider the Financial Requirements Arising from the Execution of Agrarian Reform Plans—Washing- ton, D. C.—25—30 April	North American Conference on the Social Implications of Industrialization and Technological Changes— Chicago, Illinois—15—22 September
Pan American Medical Association Congress—Mexico City, Mexico—2—11 May	First Pan American Congress of Biology and Exper- imental Pathology—Caracas, Venezuela—24 Septem- ber—1 October
Ninth Meeting of the Permanent Commission on Foot- and-Mouth Disease—Paris, France—3—5 May	<i>Aedes aegypti</i> Eradication Conference—Pensacola, Florida —27—28 September
Thirteenth World Health Assembly—Geneva, Switzer- land—3—20 May	VII Congress of the Inter-American Association of Sanitary Engineering—Montevideo, Uruguay—2—8 October
28th General Session of the Committee of the Inter- national Office of Epizootics—Paris, France—9—14 May	Meeting of the Representatives of Latin American Scientific Institutions—Caracas, Venezuela—3—7 October
VIII Pan American Highway Congress—Bogotá, Colom- bia—20—29 May	Twenty-sixth Session of the WHO Executive Board— Geneva, Switzerland—25 October—4 November
Meeting of Regional Malaria Advisers—Geneva, Switzer- land—30 May—4 June	Fifth Pan American Congress of Pharmacy and Bio- chemistry—Santiago, Chile—12—19 November
Inter-American Seminar on the Strengthening of the Family Institutions—Caracas, Venezuela—11—18 June	WHO Technical Committee on Chemotherapy—Geneva, Switzerland—14—19 November
2nd Meeting of the Inter-American Nuclear Energy Commission—Petropolis, Brazil—11—15 July	Second Conference of Latin American Schools of Medi- cine—Montevideo, Uruguay—28 November—2 December
VIII Meeting of the Regional International Organization for Health in Agriculture and Livestock (OIRSA)— San Salvador, El Salvador—18—21 July	International Atomic Energy Agency (IAEA) Panel on Disposal of Radioactive Wastes into Fresh Water— Vienna, Austria—28 November—2 December
Third Inter-American Symposium on the Peaceful Application of Nuclear Energy—Petropolis, Brazil— 18—23 July	First Regional Seminar on Housing Cooperatives— Guampaní, Peru—30 November—7 December
International Conference on Mental Deficiency—London, England—24—31 July	I Mexican Congress of Public Health—Mexico City, Mexico—4—9 December
XIII International Congress on Occupational Health—	IV Latin American Congress on Mental Health— Santiago, Chile—4—10 December
	Meeting of the UN/UNESCO Group of Experts on Social Aspects of Economic Development in Latin America—Mexico City, Mexico—12—21 December

secondment of staff from national health services and other agencies to the PAHO and the WHO.

The Representative of Colombia acted as Chairman of the 41st Meeting of the Committee, which was attended by the Representatives of El Salvador, Honduras, Mexico, the United States of America, and Venezuela; the Representative of Brazil was absent. Also present were observers from Cuba, Ecuador, the Kingdom of the Netherlands, and the United Kingdom. The meeting considered a number of matters that were to be submitted to the XII Meeting of the Directing Council. In connection with the topics on decentralization of activities of the PASB, the Committee asked the Director to continue the study under way on that subject, so as to present the fullest report possible to the 43rd Meeting of the Executive Committee for consideration, and to put into effect any measures that in the course of the study might be found to be logically applicable.

At the 42nd Meeting of the Executive Committee, the Representative of the United States of America was elected Chairman and the Representative of Colombia, Vice-Chairman. The Representatives of Brazil, Chile, El Salvador, and Honduras also attended the meeting. The Representative of Argentina was absent.

Argentina and Chile were designated to take the place of Mexico and Venezuela on the Permanent Subcommittee on Buildings and Installations.

El Salvador was designated to take the place of Mexico as a member of the Subcommittee on Basic Documents of the PAHO.

Other Meetings and Conferences

The international meetings in 1960 called by PASB/WHO or held with PASB/WHO assistance, as well as those to which the Organization was officially invited to send a representative, were announced regularly in the *Calendar of Selected International Meetings*, which is now published monthly in the *Boletín* of PASB. Summary lists of those meetings appear as Tables 40 and 41.

In addition to the meetings of the Organization's Governing Bodies, the Conference and Publications Branch also gave assistance to the meetings that follow.

The Second International Conference on Live Poliovirus Vaccines (6-10 June 1960, Washington, D. C.), held under the sponsorship of PAHO/WHO with the generous cooperation of the Sister Elizabeth Kenny Foundation, brought together 85 distinguished scientists from 20 nations and afforded them the opportunity to evaluate further the new data accumulated on the use of attenuated live polioviruses as immunizing agents against poliomyelitis. The papers presented and discussions held were published in August 1960 in PAHO Scientific Publication No. 50, and a selection of the articles were translated into Spanish and published in the PASB *Boletín* so as to make them available to public health workers in Latin America. Georgetown University generously provided the premises for the meeting and gave assistance to PASB in organizing some of the secretariat services.

As in the past, the Bureau provided assistance for holding the Annual Meeting of the Council of INCAP (XI Meeting, 8-10 August 1960, Panama, Republic of Panama). All the member countries of INCAP were represented at the meeting, which reviewed financial and budgetary matters and the technical activities of the Institute and adopted the program of work for 1961. The final report, containing the decisions of the Council and a summary of its discussions, was prepared for approval at the closing session.

Other meetings to which PASB gave assistance included the XVIII Annual Meeting of the United States-Mexico Border Public Health Association (4-8 April 1960, Hermosillo, Sonora, Mexico), and the VIII Meeting of Directors of Malaria Eradication Services of Central America, Panama, and Mexico (San Salvador, El Salvador, 16-21 May 1960). Special arrangements were also made at Washington Headquarters for the meeting of the Study Group on Chagas' Disease (7-11 March 1960), and the III Meeting of the Advisory Committee on Malaria Eradication (14-16 March 1960).

ZONE AND FIELD OFFICES

Field Office, El Paso

In 1960, the El Paso Field Office (FEP), which helps to coordinate public health efforts along the United States-Mexico Border, was strengthened by the addition of a sanitary engineer and a public health veterinarian to the existing staff, which comprised a medical officer, an administrative officer, and two stenographers.

The United States-Mexico Border Public Health Association, of which the Chief of the Field Office is the Permanent Secretary, held its XVIII Annual Meeting from 4 to 8 April at Hermosillo, Sonora, Mexico. Among those present to discuss health problems along the frontier common to both countries were the Secretary of Public Health and Welfare of Mexico, the Surgeon General of the United States of America, and the Director of the Pan American Sanitary Bureau.

During the year special attention was given to rabies control, tuberculosis, epidemiological information, and venereal disease control. Rabies control activities were concentrated in Mexicali-Calexico, Brownsville-Matamoros, and El Paso-Juárez. A Tuberculosis Control Committee was established in El Paso-Juárez.

As a result of his visits to slaughterhouses in Hermosillo and in Nogales, State of Sonora, and his recommendations to the local health authorities, the public health veterinarian was able to promote better meat hygiene. The sanitary engineer has been giving assistance on the development of water supply and garbage collection and disposal systems.

In the field of education and training 11 PAHO/WHO and 4 ICA fellows received training in sundry aspects of environmental sanitation; the Vector Control Training Course for the Mexico-U. S. Border Area was held in El Paso, 19-27 September; and assistance was given in the acquisition of audio-visual material to supplement the regular programs.

Zone I

Zone I includes Venezuela, the British Territories and Departments of France in the Americas, Surinam and the Netherlands Antilles. The Zone Office is in Caracas, Venezuela.

Malaria eradication activities in the malarious areas of Zone I continued during 1960. Spraying operations were

completed in Grenada, Jamaica, and in the coastal areas of Surinam. As the spraying work was completed, surveillance programs involving intensive case finding and epidemiological education were initiated. There was a steady decrease in the number of cases reported in most areas. Two training centers for malaria eradication personnel continued to operate in Zone I. The Malaria Eradication Training Center in Kingston, supported jointly by Jamaica and PASB/WHO, provided instruction in English for personnel from outside of the Americas; and the School of the Division of Malariology in Maracay, Aragua, maintained by the Government of Venezuela, provided training for persons from other Latin American countries.

During 1960 important progress was made in the yaws eradication and venereal disease control programs in the Caribbean area. Plans were developed for the eradication of yaws in British Guiana, for which international assistance has been sought, and for more effective control of venereal diseases in other countries. Local laboratory techniques were standardized, and the British and Dutch laboratories in the area adopted the VDRL as the standard diagnostic test for syphilis.

Advisory services were furnished on water-supply problems in Venezuela and on general sanitation programs in several islands in the Caribbean.

The efforts of the newly appointed consultants in public health nursing, nutrition, and health statistics have led to a greater awareness of the problems in these fields and to the development of plans to improve and expand program activities in the Zone.

During the year, fellowships for specialized study were awarded to 61 public health workers from countries in the Zone.

In December 1960, the staff numbered 59 persons, of whom 16 were in the Zone Office and 43 were project staff.

Zone II

The Zone II Office, which is in the Capital of Mexico, serves that country as well as Cuba, the Dominican Republic, and Haiti.

By means of 49 national projects and 13 intercountry projects, the Zone Office provided technical advisory services in malaria, yaws, *Aedes aegypti*, and smallpox eradication, tuberculosis, leprosy, and rabies control, and

public health laboratories. Emphasis was placed on integrated health projects and, in them, on sanitation programs that promote the development or improvement of community water supplies.

Technical advice was also given on the development of the departments of preventive medicine in four schools of medicine in the State of Guanajuato, Mexico, and collaboration was continued with other schools of medicine and the schools of public health, nursing, sanitary engineering, and veterinary medicine. The newly established National School of Nursing in Cuba began with an initial enrollment of 104 students, each of whom had not less than 11 years schooling. Various seminars, round tables, and short courses were organized or sponsored by the Organization. In addition, 75 fellowships were awarded in the Zone.

The I Mexican Congress of Public Health, which was held from 4 to 9 December in Mexico City, was attended by the Director-General of WHO and the Director of PASB. During the Congress, the Mexico-Guatemala Public Health Association was established.

At the end of the year there were 63 staff members on duty in the Zone, 19 in Mexico City and 44 assigned to project activities in the field.

Zone III

The Zone III Office, whose headquarters is in Guatemala City, is responsible for program development in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and British Honduras.

Through 18 country and 10 intercountry projects the Zone Office continued to collaborate in the improvement and expansion of health services, in particular sanitation, professional education and training, and communicable diseases eradication and control service. During 1960 special attention was given to malaria eradication, oral vaccination against poliomyelitis, public health administration, dental hygiene, nutrition, water supply, medical education, and laboratory services. In the field of environmental sanitation, priority was given to the financing, construction, and maintenance of water supply systems, including improved methods of utilizing the international technical and economic resources available. Costa Rica, the only country in the Zone which had *A. aegypti* at the beginning of the year, declared itself free of the vector.

The Office continued to stimulate the establishment, reorganization, and improvement of national epidemiological services and public health laboratories, and the implementation of modern sanitary codes.

Collaboration with INCAP was continued. INCAPARINA, the vegetable mixture developed by the Institute, was being produced in two countries in the Zone by the end of the year.

In education and training, the Zone Office collaborated with the schools of nursing, medicine, veterinary medicine,

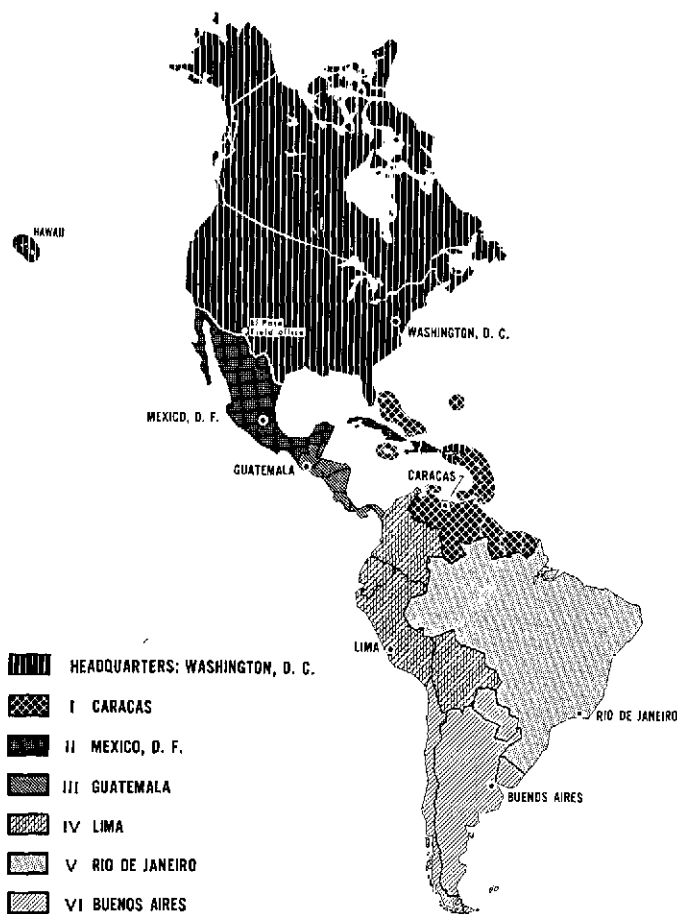


Fig. 23. Zones and Zone Offices of the Pan American Sanitary Bureau.

engineering, and dentistry. It also gave assistance in short courses for the training of doctors, nurses, laboratory technicians, sanitary inspectors, nursing auxiliaries, and midwives. During the year, 55 fellowships were awarded in the Zone.

As of 31 December, there were 78 staff members on duty in the Zone—21 in Guatemala City and 57 in field activities. This number does not include INCAP personnel.

Zone IV

The Zone IV Office, which serves Bolivia, Colombia, Ecuador, and Peru, is in Lima.

The Organization's efforts in the promotion of potable water supplies have been warmly received in the countries of the Zone.

Major activities during 1960 included the eradication of malaria and of *A. aegypti* and the control of leprosy, tuberculosis, and plague. By the end of December, Colombia—the only country in the Zone which still had *A. aegypti* at the

beginning of the year--was ready to declare itself free of the vector.

During the year Bolivia and Colombia reorganized their ministries of health.

Technical advisory services were given to Ecuador and to Peru in connection with their National Institutes of Nutrition; and to the Samper Martínez Institute in Colombia for the organization of a virus laboratory.

A project covering public health statistics throughout the Zone was initiated this year.

With regards to education and training, the Zone Office concentrated on the teaching of basic nursing and the organization of schools of nursing.

As of 31 December there were 17 staff members in Lima and 59 assigned to project activities.

Zone V

The consultative services that the Organization makes available to Brazil are channeled through the Zone V Office in Rio de Janeiro.

The house-spraying phase of the malaria eradication program was begun in five of the six states comprised in Area III (Northeast); the chloroquinated-salt program was continued in Area I (the Amazon); and geographical reconnaissance was completed in Area V.

In the State of São Paulo, a large-scale malaria eradication program was also begun early in 1960. In the course of the first cycle of house-spraying 451,497 houses were treated. The second cycle was started in September.

Assistance was provided in the improvement of local public health services in the Northeast area and in Mato Grosso.

The Zone veterinarian gave assistance to the National School of Public Health in the development of a new course for veterinarians and also as a part-time professor at the school. Assistance in course preparation was also provided to the Department of Parasitology of the Faculty of Hygiene, University of São Paulo.

A survey made in the Northeastern States of Brazil indicated that rabies is a serious problem in both humans and animals. In Recife alone, 793 persons were undergoing rabies treatment in the month of October. Bat-transmitted rabies is also a serious problem in the Northeast. Supplies and equipment were obtained through PASB/WHO for the new Rabies Laboratory at the Oswaldo Cruz Institute.

The first assignment of a public health nurse to the Zone Office led to substantial progress in surveying nursing resources and needs, in establishing contacts with national nursing officials, and in giving assistance to schools for

the expansion of their educational facilities. A questionnaire designed to obtain data for the Survey of Nursing Schools in Latin America was completed by all the 39 schools to which it was sent. Visits were made to a number of the schools of nursing and to nine schools for the training of nursing auxiliaries. Studies were made at the Recife School of Nursing and at the Midwifery Course at the Faculty of Medicine of the University of São Paulo with a view to strengthening and improving the curriculum.

During 1960, fellowships were awarded to 24 persons from Zone V for study abroad, and 95 fellows from other countries studied in Brazil.

At the end of the year the staff numbered 125, including 12 at the Zone Office, 10 on field projects, and 103 at the Pan American Foot-and-Mouth Disease Center.

Zone VI

The Zone VI Office, with headquarters in Buenos Aires, provides services to Argentina, Chile, Paraguay and Uruguay.

Efforts during 1960 were directed toward the strengthening of public health services, the training of professional and auxiliary public health workers, and the development of communicable disease control and eradication programs. During 1960 smallpox, malaria, and *A. aegypti* eradication, as well as leprosy control work, was emphasized. By the end of the year Chile was ready for the final verification to declare it free of *A. aegypti*. The promotion of community water supply and garbage disposal programs also received special attention.

In the field of public health and vital statistics, work was continued on the improvement of statistical offices, the establishment of work systems and methods, the coordination of available resources, and the training of statisticians.

Immediate assistance was rendered to the public health authorities of Chile after the earthquake in May and in the plans for the reconstruction of the devastated area.

Education and training efforts were directed toward improvements in schools of medicine, sanitary engineering, and nursing; intensification of local training courses—28 courses with 723 participants; and seminars on hospital administration. One hundred and thirty-nine fellowships were awarded in the Zone.

As of 31 December, the 79 staff members on duty in the Zone were assigned as follows: 16 to the Office in Buenos Aires, 32 to project activities in the field, and 31 to the Pan American Zoonoses Center.

APPENDIX

Project List

The Project List presents alphabetically a brief summary of work done during the year in each country, and description of work carried out under the intercountry and interzone projects.

At the end of each summary, the reader will find the source of funds on the left, and the cooperating agency, if any, on the right.

In addition to the projects listed, the Organization also provided advice of its staff to several projects which operated without PAHO/WHO funds.

Fellowship awards given in the Appendix correspond to 1 January–31 December 1960 and because of the difference in periods covered do not coincide with information given in text and tables under Fellowships.

Abbreviations used in the Appendix:

CNEP	National Malaria Eradication Commission (Mexico)	PAHO/CWSF	PAHO-Special Community Water-Supply Fund
CREFAL	Latin American Regional Fundamental Education Center	PAHO/SMF	PAHO-Special Malaria Fund
EKF	Sister Elizabeth Kenny Foundation	PAU	Pan American Union
FAO	Food and Agriculture Organization	SCISP	Inter-American Cooperative Health Service
ICA	International Cooperation Administration	SESP	Special Public Health Service Foundation (Brazil)
ILO	International Labor Organization	UN	United Nations
INCAP	Institute of Nutrition of Central America and Panama	UNESCO	United Nations Educational, Scientific, and Cultural Organization
INOS	National Institute of Public Works (Venezuela)	UNICEF	United Nations Children's Fund
KF	W. K. Kellogg Foundation	UN/TAO	United Nations Bureau of Technical Assistance Operations
NIH	National Institutes of Health	USPHS	U. S. Public Health Service
OAS	Organization of American States	WHO	World Health Organization
OAS/PTC	OAS—Program of Technical Cooperation	WHO/TA	WHO-Technical Assistance
PAHO	Pan American Health Organization		

ARGENTINA-3—Nursing Education (Buenos Aires, Córdoba, El Chaco)

Twenty students were admitted in April to the School of Nursing in Córdoba and four students graduated in December 1960. Two fellows returned from their studies abroad and the instructor in obstetrical nursing left in February to study for 12 months in Colombia.

The School of Nursing in Resistencia, El Chaco, was discontinued, and 12 of its students, together with two instructors, were transferred to the school in Córdoba and the rest of the students to the school in Rosario. On graduation, both groups of students and the two instructors will return to El Chaco to reopen and teach in the school in Resistencia; in the meantime, its facilities are being used for training auxiliary personnel.

Collaboration with the School of Nursing of the University of Buenos Aires was begun in November. This new school started its first year class with 10 students.

(WHO/TA)

ARGENTINA-4—National Institute of Microbiology

Technical advisory services and two six-month fellowships were provided.

(WHO)

ARGENTINA-6—Public Health Administration—Fellowships

Public Health Administration—one two-month fellowship for study in Chile, Colombia, and Puerto Rico, and two 10-month fellowships for study in Chile.

Hospital Administration—one 10-month fellowship for study in Chile.

Sanitary Engineering—one fellowship of 11 and a half months' duration for study in Brazil.

Nursing Education—one 12-month fellowship for study in Costa Rica.

(WHO)

ARGENTINA-7—Public Health Services

The transfer of services from the national to the provincial level was almost completed by the end of the year.

The agreement for the extension of the water distribution systems for the city of Resistencia, capital of the Province of El Chaco, was signed between the City, the Ministry of Health, and "Obras Sanitarias de la Nación." The program of construction of small water supplies was continued; the 95 units built provide water to 15,000 people. The installation of latrines was also continued, and 1,600 units were in service at the end of the year. A successful sanitary fill for the disposal of garbage in Resistencia was in operation during the year. Food sanitation activities included the survey of barns, stables, and slaughterhouses.

A third course for the preparation of sanitary inspectors

was held during the year and the first course to train nursing auxiliaries began in June. Steps are being taken to obtain approval of the Sanitary Code by the Congress of the El Chaco Province.

(WHO/TA)

(UNICEF)

ARGENTINA-8—Malaria Eradication

The first year of the attack phase was completed in July in the remaining malarious areas. Large areas were in the maintenance phase. Transmission has been interrupted in Tucumán and Misiones since the last outbreak, 1958/1959. A total of 88,000 houses were sprayed, and 332,000 persons protected. Scattered foci in the south of Salta and Jujuy produced 269 reported cases in the first 10 months of 1960. There were also two areas of active transmission, one in the northern part of Salta and the other in El Chaco and Formosa. In these two regions, 614 and 871 cases were reported, respectively. In nine months of 1960, surveillance produced 62,298 slides, of which 635 were positive; voluntary collaborators produced 5,239 slides, of which 1,063 were positive. Special problems include the temporary labor camps of forestry and petroleum workers (camp movements are now required to be reported by law) large areas rendered inaccessible by heavy rains for part of the year, and periodic reinvasion of *A. darlingi* in favorable seasons. During the year, two fellowships each of two and a half months' duration and two others of three months and one week's duration were awarded, all for study in Mexico.

(PAHO/SMF)

(UNICEF)

ARGENTINA-13—Public Health Administration—Fellowships

Maternal and Child Health—one 10-month fellowship for study in Chile.

Public Health Administration—one 10-month fellowship for study in Brazil; one 10-month fellowship for study in Chile; and one 12-month fellowship for study in the United States.

Health Education—one 12-month fellowship for study in Chile.

Nursing Education—one 12-month fellowship for study in the United States.

Health Statistics—one one-month fellowship for study in Chile.

(PAHO)

ARGENTINA-17—School of Public Health

Two short-term consultants, one on maternal and child health and the other on epidemiology, were assigned to the School. Another short-term consultant visited the School and made suggestions regarding its organization and administration.

(WHO)

ARGENTINA-18—Medical Education

A short-term consultant assisted in the reorganization of the Department of Preventive Medicine of the Medical School of the National University of Cuyo at Mendoza.

This project included the following award:

Organization of Medical Education with emphasis on Bacteriology—one 12-month fellowship for study in the United States.

(WHO)

ARGENTINA-20—Tuberculosis Control

Personnel were trained in the techniques of prevalence surveys and tuberculosis control. In the fourth quarter of 1960 those public health workers began a survey to determine the prevalence and other epidemiological characteristics of tuberculosis in the northeast and Patagonian regions.

(WHO) (UNICEF)

ARGENTINA-23—Nursing Education (Rosario)

The School of Nursing of the National University of the Litoral had an enrollment of 37 students (32 women and 5 men) and, in addition to its Director and Assistant Director, a full-time faculty of seven, two of whom were abroad on fellowships. The two international consultants concentrated on in-service training of the faculty, the planning of the curriculum, and the improvement of the services used for the students' practical experience. Efforts were continued to transfer to the University School the course for training auxiliaries which is presently operated as a separate school by the University authorities.

(PAHO)

ARGENTINA-24—Planning and Organization of Hospital Services

The consultant continued his assistance to the National as well as to the Provincial Health Ministries in the development of hospital services, including medical records and hospital statistics. The Provinces of Buenos Aires, El Chaco, Córdoba, Misiones, Mendoza, San Juan, and Tucumán, were in the process of building and organizing their hospital services. Assistance was also given to the Universities of Buenos Aires and Córdoba in the planning and building of their teaching hospitals. Assistance was given as well in the preparation and conduct of three seminars in hospital administration held in La Plata, Bahía Blanca, and San Juan.

(PAHO)

ARGENTINA-25—Training of Nursing Personnel

This project was initiated in September 1960. The primary objective is to train instructors and supervisors

of auxiliary nursing personnel. The main training center is in the National School of Public Health, but it is proposed that all schools of nursing attached to universities should also set up training centers for auxiliary personnel. The main center will establish standards and coordinate the activities of the other schools.

(PAHO) (UNICEF)

ARGENTINA-26—National Institute of Rehabilitation

Rehabilitation—one six-month fellowship for study in the United States and in Brazil.

(PAHO) (EKF)

ARGENTINA-28—Leprosy Control

A staff member and a consultant of the Organization helped to plan a leprosy control program that was put into operation during the fourth quarter of 1960.

(WHO) (UNICEF)

ARGENTINA-29—Promotion of Community Water Supplies

Environmental Sanitation—two fellowships each of two and a half months' duration to study water supply operations in Peru, Colombia, Guatemala, Mexico, United States of America, Puerto Rico, and Venezuela; and one fellowship of three and a half months' duration to study ground water development in the United States.

(PAHO/CWSF)

ARGENTINA-32—Health Statistics (Province of Buenos Aires)

Consultant services were given on the use of the new certificates of birth, death, fetal death, and marriage. The section will be used as a demonstration area for practical training in vital statistics.

(PAHO)

ARGENTINA-51—*Aedes aegypti* Eradication

Surveys were made in 375 localities and verifications were carried out in 21 of them, which were found free of the vector. Among the 2,894 localities inspected since the beginning of the campaign, 162 were found to be infested with *A. aegypti*; 156 of them are now considered free of the vector.

(PAHO)

BOLIVIA-4—Malaria Eradication

The second year of the proposed four years of total coverage was completed. Epidemiological operations were increased. A number of administrative changes were carried out in order to strengthen the service.

The fourth cycle of DDT and second cycle of dieldrin were completed in August 1960. The fifth DDT cycle will cover the entire malarious area. No resistance was found to any species of anophelines in 47 tests performed in Bolivia. 142,000 houses were sprayed in the fourth cycle of DDT, and 12,255 were sprayed with dieldrin. Of the total sprayable houses 96.2 per cent were treated; the remainder were found closed or spraying was refused. 97,000 pounds of DDT and 3,220 pounds of dieldrin were applied. 673,810 inhabitants were protected.

Evaluation was carried on by 30 workers and 1,462 notification posts. They obtained 43,538 slides and covered 6.5 per cent of the inhabitants directly protected, in six months. The positivity rates for the third and fourth cycles were 1.1 per cent and 1.4 per cent, or about one third of those for the second cycle.

This project included the following awards during the calendar year:

Malaria Eradication—three six-month fellowships for study in Venezuela and Mexico; and four fellowships each of two and a half months' duration for study in Mexico.

Medical Entomology—one fellowship of four and a half months' duration for study in Brazil.

(PAHO/SMF, WHO/TA) (UNICEF, ICA)

BOLIVIA-5—Nursing Education

A nurse was appointed director of the National School of Nursing after a nation-wide competition, and three new instructors were appointed and their salaries brought more in line with those of nurses in other agencies. Negotiations were initiated in an effort to attach the school to the University through the School of Medicine, a step which would help to consolidate the gains so far made. In 1960 there were 58 students in the school; and 50 candidates applied for admission but only 25 can be accommodated.

(WHO)

BOLIVIA-10—Public Health Services

The new organizational structure of the Ministry of Health came into operation with the creation of the National Health Service and a Nursing Department.

Public Health Administration—one four-month fellowship for study in Chile, Peru, Guatemala, Puerto Rico, and Venezuela.

Environmental Sanitation—three one-month fellowships for study in Colombia and in Peru.

(PAHO) (UNICEF, ICA)

BOLIVIA-11—Joint Field Mission on Indigenous Populations

The medical officer gave assistance to this program in the four health centers and in the preparation of a new plan of supplies and equipment to be presented to UNICEF. A program for environmental sanitation for the

area was developed, and training of local voluntary health workers was initiated.

(WHO/TA) (ILO, UNESCO, UN, FAO)

BOLIVIA-12—Leprosy Control

A consultant visited the country for two months and cooperated with the public health authorities in appraising the problem and in planning the operation of the control program.

(PAHO)

BOLIVIA-15—Promotion of Community Water Supplies

Assistance was given in the training of well-drillers and in the study of water rates.

This project included the following award during the calendar year:

Environmental Sanitation with emphasis on Sanitary Engineering—one fellowship of three and a half months' duration for study in the United States.

(PAHO/CWSF)

BOLIVIA-16—Public Health Administration—Fellowships

Health Education—two 12-month fellowships for study in Chile.

Veterinary Public Health—one 10-month fellowship for study in Chile.

(WHO)

BRAZIL-3—Public Health Services (Northeast)

This project, under the direct supervision of SESP technical staff, operated in 22 municipalities through the services offered by 23 health units, two district hospitals, and nine maternity centers. Zone V Office personnel provided technical advisory services.

(WHO)

(UNICEF)

BRAZIL-7—Nutrition

A seminar attended by representatives of all the professional groups involved in community services in the State of Rio Grande do Norte was held in December. Methods of coordination and basic nutrition policies were discussed.

(WHO)

(UNICEF, FAO)

BRAZIL-8—National Virus Laboratory Services

Consultant services were provided on the planning, selection of equipment and materials, and provision of supply of strains and reagents for the virological laboratory of the Oswaldo Cruz Institute. This project was in operation by the end of the year.

(WHO/TA)

BRAZIL-24—Malaria Eradication

The attack phase scheduled to begin early in 1960 was delayed owing to lack of funds. The program began in Northeastern Brazil, but the originally projected schedule was set back several times. In the first semester three states were completely sprayed, 4,685 localities with 1,015,381 persons were directly protected, and 250,000 pounds of DDT were used. In the second semester, the program was extended to five states, 423,446 houses, and 1,470,227 inhabitants. Chloroquinated salt was progressively introduced throughout the year into the Amazon Valley. Lack of funds prevented epidemiological evaluation of the results of both programs, but steps were taken to form a special study group to measure the effects of the chloroquinated salt program. Active search for cases in six states resulted in the examination of 34,756 slides in 10 months; 2,828 were found positive (8.1 per cent), mainly for *P. vivax*.

This project included the following awards during the calendar year:

Malaria Eradication—one six-month fellowship for study in Venezuela and Mexico; and three fellowships each of two and a half months' duration for study in Mexico.

(PAHO/SMF)

(ICA)

BRAZIL-28—Public Health Administration—Fellowships

Nutrition—one three-month fellowship for study in Guatemala and Mexico.

Rehabilitation—one 12-month fellowship for study in the United States.

Organization of Medical Education—one 12-month fellowship for study in the United States.

(PAHO)

BRAZIL-31—Rehabilitation Training Center

The medical officer assigned to the Rehabilitation Institute of the University of São Paulo gave assistance in the training of personnel in the field of medical rehabilitation. Courses begun in 1960 included a third course for physical therapists, with 11 students; a third course for occupational therapists, with eight students; and a second course for prosthetics technicians, with two students. These courses are of two years' duration.

The consultant also assisted the medical faculties of Bahia, Recife, Belo Horizonte, Curitiba, and Porto Alegre.

(WHO/TA)

(ILO, UN/TAO)

BRAZIL-33—Training Course for Laboratory Technicians

A consultant assisted in the development of a course outline and of a training manual, and in the conduct of a

practical training course for 20 technicians from national and state laboratories. Teaching aids were also provided to this first formal course for laboratory technicians in Brazil.

(PAHO)

BRAZIL-35—School of Public Health (São Paulo)

General consultation was given to the School of Hygiene and Public Health and direct assistance was provided to the Araraquara Health Unit that also serves as a field training center under the University of São Paulo. Supplies and equipment, and a grant to cover administrative expenses incurred by the School because of PAHO/WHO fellows, were also provided.

This project included the following awards during the calendar year:

Public Health Teaching—one fellowship of four months and three weeks' duration for study in the United States.

Public Health Teaching with emphasis on Veterinary Public Health—one one-month fellowship for study in Argentina and Chile; and one three-month fellowship for study in the United States.

(WHO)

BRAZIL-37—Dental Health Education

The Regional Dental Health Adviser continued to provide consultation and assistance to the Dental Public Health Training Center at the School of Hygiene and Public Health of the University of São Paulo. An intensive nine-week course on orientation in public health dentistry was held for 16 dental clinicians working at local levels.

(PAHO)

(KF)

BRAZIL-38—Smallpox Eradication

A new agreement was signed at the beginning of the year. State funds were made available for the completion and installation of the Pernambuco laboratory. The vaccine production laboratory in Rio Grande do Sul moved into its new premises and began production of lyophilized chick embryo vaccine.

(PAHO)

BRAZIL-39—Public Health Services

Training of nursing and sanitation auxiliaries was begun as well as a course for lay midwives. The health center at Dourados, base of the project, extended and improved its services to the community.

This project included the following award:

Public Health Administration—one 10-month fellowship for study in Chile.

(PAHO)

(UNICEF)

BRAZIL-41—Malaria Eradication (São Paulo)

The first cycle of DDT was completed and the second cycle begun in September 1960, with 475,121 houses to be sprayed. Of these, 340,681 houses were treated in the fourth quarter of the year, with 300,000 pounds of DDT. The 40 per cent active posts of the 1,900 which have been installed produced about 3,500 slides per month, with an average positivity of 22.5 per cent. Active search produced about 11,500 slides per month, of which 1.6 per cent were positive.

This project included the following awards:

Malaria Eradication—one one-month fellowship for study in Mexico, Venezuela, and Colombia; and three fellowships, each of five weeks' duration, for study in Mexico, Guatemala, and Peru.

(PAHO/SMF)

(ICA)

BRAZIL-42—Rabies Control

Technical consultation was furnished by the Veterinary Public Health Adviser assigned to the Zone V Office for the rabies control program. Some special technical supplies and two short-term fellowships were also provided. Preliminary plans were prepared for a national antirabies institute.

This project included the following award:

Rabies Control—one fellowship of three months and one week's duration for study in Venezuela, Mexico, Guatemala, Peru, Chile, and Argentina.

(WHO)

BRAZIL-43—Teaching of Preventive Dentistry

Advisory services were provided to two selected schools in reviewing their methods of teaching preventive dentistry, as well as in incorporating it into the regular educational program.

(PAHO)

BRAZIL-44—Teaching of Public Health in Schools of Veterinary Medicine

The Veterinary Public Health Adviser assigned to the Zone Office gave assistance to the National School of Public Health in Rio de Janeiro and to the University of São Paulo in the preparation of their public health course for veterinarians, and in revising their curricula to include more teaching of public health and preventive medicine, with emphasis on the principles involved. Lecturing and part-time teaching services were also provided.

(PAHO)

BRAZIL-48—Leprosy Control

A PASB/WHO staff member assisted in the preparation of a national leprosy control program designed to modify and expand the Government's previous work in this field. In December a short-term consultant was as-

signed to the Leprology Institute in Rio de Janeiro for the purpose of making a study of its research activities. After a two-months' stay there, he will submit recommendations for transmittal to the Government of Brazil.

This project included the following award:

Bacteriology—one three-month fellowship for study in the United Kingdom, Italy, and France.

(WIO)

(UNICEF)

BRAZIL-50—Seminar on Pollution of Sources of Water Supplies

Three consultants were provided to the Government to assist in presentations and discussions at the Brazilian seminar on stream pollution held in Rio de Janeiro and São Paulo.

(PAHO)

BRAZIL-51—Yellow Fever Laboratory

The Organization continued to collaborate with the Oswaldo Cruz Institute which answered, free of charge, 170 requests for vaccine and diagnostic services from other American countries. During 1960 the Institute prepared 4,667,200 doses of yellow fever vaccine, of which the following amounts were supplied through the Organization: Portugal, 40,000 doses; Venezuela, 300,000 doses; and Bolivia, 50,000 doses. In Brazil, 2,574,400 doses were used. The stock on hand at the end of the year was 3,594,200 doses.

(PAHO)

BRAZIL-55—Tuberculosis Control

Plans were completed for a tuberculosis prevalence survey to be carried out in Rio Grande do Norte as a basis for the preparation of a tuberculosis control project in that state.

(WHO)

(UNICEF)

BRITISH GUIANA-5—Malaria Eradication

Malaria has been eradicated from the coastal region (population 494,000), and now exists only in the sparsely populated interior region (population 65,000). Preparations were made for the start of the distribution of medicated salt in the three districts of the interior.

(PAHO/SMF)

(UNICEF)

BRITISH GUIANA AND WEST INDIES-1—*Aegypti* Eradication

The 95 localities previously infested in British Guiana remained negative and are under surveillance; negative results have also been obtained in Grenada, the Grenadines (with the exception of Carriacou), Nevis, St. Kitts, the St. Vincent group, Antigua, Barbados, Trinidad and Tobago, which are under surveillance. Reinfestation, promptly followed by a successful intensive treatment, occurred in Montserrat and St. Lucia. A survey is being

carried out in Dominica before the start of eradication work. Shortage of personnel limited activities in the Bahamas. Work in the Virgin Islands was very intensive. (WHO/T.A)

BRITISH GUIANA AND WEST INDIES-3—Public Health Nursing

Technical advisory services were provided to Barbados, Trinidad, and British Guiana. A plan for an integrated health services project in British Guiana was prepared as a result of a visit by technical staff from the Zone I and Washington Offices and of deliberations with the local public health officers and the PASB/WHO nursing consultant for the area. This new project, scheduled to begin operations early in 1961, provides for a complete reorganization of all medical and nursing services, and the establishment of 33 rural health centers, a public health laboratory, and environmental services. A formal request for supplies and equipment was presented to UNICEF.

This project included the following award:

Public Health Nursing—one three-month fellowship for study in the United States.

(WHO/T.A)

BRITISH GUIANA AND WEST INDIES-4—Public Health Administration—Fellowships

Administration of Nursing Services—one ten-week fellowship for study in the United Kingdom, the Netherlands, and Denmark.

Laboratory Services—one six-month fellowship for study in the United States; and one six-month fellowship for study in Canada.

Environmental Sanitation—one fellowship of eight months and six weeks' duration for study in the United States and Puerto Rico, respectively; and one 12-month fellowship for study in the United States.

A. aegypti Eradication—one three-week fellowship for study in Jamaica, British Virgin Islands, and Barbados.

Insecticides Control—one six-week fellowship for study in the United States.

Public Health Nursing—one 12-month fellowship for study in the United States, and one 12-month fellowship for study in Canada.

Sanitary Engineering—One 12-month fellowship for study in the United States.

(PAHO)

BRITISH GUIANA AND WEST INDIES-5—Public Health Administration—Fellowships

Public Health Administration—one 12-month fellowship for study in Canada.

Health Education—one 12-month fellowship for study in the United States.

Mental Health—one five-month fellowship for study in the United States and Canada.

(WHO)

BRITISH GUIANA AND WEST INDIES-12—Nursing Education

The nursing education consultant and her national counterpart visited representative hospitals and health agencies in various parts of Jamaica to gain first-hand knowledge of the nursing situation and to determine the location best suited for the program to train nursing auxiliaries. A program plan and course outline were discussed with the nursing officers of the Ministry of Health. A preliminary plan of operations for the postbasic nursing education program was prepared.

(PAHO)

BRITISH GUIANA AND WEST INDIES-14—Malaria Eradication

Both malaria and the vector mosquito *A. darlingi* have been eradicated from the coastal region where 90 per cent of the people live, and more recently from the near interior areas, where most of the remainder live. Barrier spraying of the river routes was maintained to protect the consolidated areas from visitors from the interior where 38,000 persons live in areas still in the attack phase. Preparations for a chloroquinated salt program in the interior were fully developed during the last half of 1960, and this program will begin in January 1961.

(PAHO/SMF)

(UNICEF)

BRITISH GUIANA AND WEST INDIES-18—Promotion of Community Water Supplies

Assistance was given in the training of well-drillers in British Guiana, and a consultant on problems of water supplies and sewage disposal was provided to Grenada.

This project included the following awards:

Environmental Sanitation with emphasis on Sanitary Engineering—two fellowships each of three and a half months' duration for study in the United States.

(PAHO/CWSF)

BRITISH HONDURAS-1—Malaria Eradication

The third year of the total coverage was completed in June 1960. Since the change to DDT, two complete cycles have been applied, and the reduction in malaria cases has been very marked. *Falciparum* cases decreased from 200 in May 1959 to 0 in October 1960, with only 9 cases in the June–October period. Many of the *vivax* cases now appear to be relapses; new cases, wherever studied, were traced to unsprayed or partially sprayed houses. Susceptibility tests demonstrated no DDT resistance. The effort to obtain complete coverage was intensified by means of a supplementary squad. 18,014 houses were sprayed (only 224 sprayable houses were not sprayed), 91,000 persons were protected. 17,600 pounds of DDT were used in the third cycle, which ended in May; 18,200 in the fourth cycle. During the period

through October, the target of slides taken was maintained (1 per cent of the population per month); positive slides dropped from 37 (4.4 per cent) in January to 2 in October, 9 in November, and 0 in December. The Government began paying two dollars to all volunteer collaborators who obtained a positive slide, which greatly stimulated their efforts.

This project included the following award:

Malaria Eradication—one fellowship of three months and three weeks' duration for study in Jamaica and in Mexico.

(*PAHO/SMF*)

(*UNICEF*)

BRITISH HONDURAS-5—Public Health Services

This project consisted of the following awards:

Laboratory Services with emphasis on Bacteriology—one 12-month fellowship for study in Canada.

Public Health Nursing—one 12-month fellowship for study in Colombia and Guatemala.

(*WHO*)

(*UNICEF*)

CANADA-1—Public Health Administration—Fellowships

Health Education—one fellowship of three months and one week's duration for study in the United States, Mexico, Guatemala, and Peru.

Organization of Public Health Teaching—one fellowship of four months and one week's duration for study in the United Kingdom, Denmark, Sweden, Norway, India, Ceylon, Japan, and the Union of Soviet Socialist Republics.

Public Health Dentistry—one 11-month fellowship for study in the United States.

(*WHO*)

CHILE-18—Public Health Administration—Fellowships

Medical Education—one three-month fellowship for study in the United States.

Pediatrics—one eleven-month fellowship for study in the United States.

Organization of Medical Education—One five-month fellowship for study in the United States.

(*WHO/TA*)

CHILE-19—Food and Drug Control

This project consisted of the following award:

Control of Pharmaceutical Preparations—one six-month fellowship for study in Canada and in the United States.

(*WHO/TA*)

CHILE-20—Midwifery Education

Special attention was given in the School of Midwifery toward improving coordination between theory and

practice, and to a program of in-service training for midwife instructors. The report on the study of midwives' functions in the Maternal and Child Health Service was completed. This will serve as a basis for improvements in the School of Midwifery and for additional preparation of graduate midwives for their functions in the health services. A refresher course was given in the School of Nursing of the University of Chile for nurses and midwives, and the content of the course in obstetrical nursing was revised.

This project included the following awards:

Midwifery—three fellowships of ten weeks' duration for study in Colombia, Costa Rica, and Jamaica.

(*WHO*)

CHILE-21—Rehabilitation Center

Late in the year a consultant in prosthetics was provided to assist in the training of local technicians.

(*PAHO*)

CHILE-24—Malaria Eradication

This project consisted of the following award:

Malaria Eradication—one six-month fellowship for study in Venezuela and Mexico.

(*PAHO/SMF*)

CHILE-25—Public Health Administration—Fellowships

Nursing Education—one three-month fellowship for study in the United States, Guatemala, Brazil, and Uruguay.

(*WHO*)

CHILE-26—Public Health Administration—Fellowships

Medical Education with emphasis on Parasitology—one 10-month fellowship for study in the United States.

(*PAHO*)

CHILE-29—Advanced Nursing Education

After an evaluation of the project late in 1959, it was decided that the national group was sufficiently prepared to carry on the program; full-time advisory services were therefore terminated. The final report prepared by the nurse adviser was presented in March 1960.

One fellowship student returned to her post as instructor after studying in the United States, and another left for a year's study abroad.

(*WHO*)

CHILE-31—School of Public Health

A short-term consultant assisted in the teaching program of the School. He also gave assistance in the preventive medicine teaching programs of the School of

Medicine of the University of Chile and of the School of Medicine in Concepción.

This project included the following awards:

Organization of Public Health Teaching with emphasis on Maternal and Child Health—one four-month fellowship for study in the United States, England, and Scotland.

Nutrition—one one-month fellowship for study in the United States.

(WHO)

CHILE-36—*A. aegypti* Eradication

Early in 1960, surveys were made in 289 localities, 2 of which were found to be positive and were treated in February. The final verification is planned for February 1961.

(PAHO)

CHILE-39—Training in the Medical Use of Radioisotopes

The Kellogg Foundation made a grant to provide for advisory assistance and for the purchase of equipment and supplies which will be used to train international fellows in the medical use of radioisotopes. Training will be given at the *Hospital de El Salvador*, School of Medicine of the University of Chile.

(PAHO)

CHILE-40—Promotion of Community Water Supplies

A consultant was provided for seven months to assist in the study of the national water works planning. Provision was also made for training of personnel in ground water development and in the study of water rates.

This project included the following award:

Environmental Sanitation with emphasis on Sanitary Engineering—one fellowship of three and a half months' duration for study in the United States.

(PAHO/CWSF)

CHILE-41—Nursing Survey

A national nurse was appointed director of the survey, the limits of which were established; survey questionnaires were also drawn up. By the end of December, most of the questionnaires for the census of nurses, nursing auxiliaries, and health establishments, had been returned.

(WHO)

CHILE-48—Emergency Health Services

Emergency assistance was given to the areas affected by the May earthquake, with special attention to the

reconstruction of hospitals and regionalization of services within the country.

(WHO/TA)

(UNICEF)

COLOMBIA-4—Public Health Services

The plan for the reorganization of the Ministry of Public Health was completed with technical advisory services furnished by PASB/WHO consultants. It provides for a Division of Environmental Sanitation which will be responsible for sanitary engineering, occupational hygiene, and general sanitation including milk and food in general.

Noteworthy among the accomplishments is the report produced by the Department of Sanitary Engineering of the Ministry for the expansion of the project to six of the country's departments. The expansion contemplates a thorough and complete program of sanitation and training. The year's training activities included a course in public health nursing, with special emphasis on maternal and child health. They also included courses for sanitary inspectors, and a short course for administrators and other personnel of the nine workshops which, as part of the project, in 1960 produced 4,400 slabs for latrine construction.

Activities in the field of food sanitation included inspection and improvement of slaughterhouses and the organization of several food-handler training courses. The PASB/WHO Sanitary Engineer assigned to the project also collaborated with the national authorities in the implementation of the national water supply program.

This project included the following awards:

Epidemiology—one 10-month fellowship for study in Chile.

Sanitary Engineering—one fellowship of 10 and a half months' duration for study in Mexico; and one 10-month fellowship for study in Chile.

Public Health Administration—one fellowship of 10 and a half months' duration for study in Mexico; and one 10-month fellowship for study in Chile.

Public Health Administration with emphasis on Statistics—one 15-month fellowship for study in Chile.

Public Health Administration with emphasis on Tuberculosis—one fellowship of 10 and a half months' duration for study in Mexico.

Public Health Administration with emphasis on Sanitary Engineering—one 10-month fellowship for study in Chile.

Public Health Administration with emphasis on Maternal and Child Health—one 10-month fellowship for study in Chile.

Hospital Administration—one 16-month fellowship for study in Chile.

(WHO/TA)

(UNICEF, ICA)

COLOMBIA-5—Malaria Eradication

The third and fourth cycles of DDT were completed during the year, spraying an average of 1,180,000 houses and protecting some 6,350,800 inhabitants (4.6 per cent of houses were not sprayed). 2,045,300 pounds of DDT were used. Vectors remained susceptible to DDT, and for the most part, to dieldrin. Resistance of bedbugs to DDT was said to have turned some householders against spraying with DDT. Information posts were reorganized and a staff of post inspectors were retrained. An epidemiologist was established in each of 10 zones. Evaluation service has been built up by rapid expansion of notification posts, 300–400 new posts per month. Of 7,170 slides obtained in July, 217 (3.0 per cent) were positive; in the same month 300 rural inspectors produced 45,200 slides, of which 679 (1.5 per cent) were positive. One potentially serious problem, so far limited to a very few cases, is the appearance of *P. falciparum* malaria which has proved to be only slightly affected by chloroquine. It has either high tolerance or a moderate degree of resistance to the drug, and is under intensive study both in Colombia and the United States of America.

This project included the following awards:

Malaria Eradication—one fellowship of four and a half months' duration for study in Mexico and Venezuela; four fellowships each of four and a half months' duration for study in Mexico; two fellowships each of three months and one week's duration for study in Brazil and Peru; two fellowships each of three months and one week's duration for study in Brazil and Bolivia; eight fellowships each of three months and one week's duration for study in Mexico; and two six-month fellowships for study in Venezuela and Mexico.

Medical Entomology—two fellowships each of four and a half months' duration for study in Brazil.

(PAHO/SMP)

(UNICEF, ICA)

COLOMBIA-17—Smallpox Eradication

By October 1960, 9,500,143 persons had been vaccinated, and eight departments with a population of 1,323,559 were still to be vaccinated. A careful case-reporting service has been organized, and efforts are being made to have the regular public health services assume responsibility for maintaining the level of immunity obtained in the places already vaccinated. The Samper Martínez Institute continued to produce dried vaccine in sufficient quantities for the needs of the country. The services of both a full-time consultant and a temporary consultant were provided to collaborate with the Government in the development of this program.

(PAHO)

(UNICEF)

COLOMBIA-18—Public Health Administration—Fellowships

Hospital Administration—one 13-month fellowship for study in Brazil.

Public Health Administration—one 15-month fellowship for study in Chile.

(WHO)

COLOMBIA-19—Leprosy Control

A PASB/WHO consultant specialized in leprosy collaborated with the Government in the development of a plan of operations that calls for the reorganization and expansion of the existing services. The plan was submitted to UNICEF for consideration.

(WHO/TA)

(UNICEF)

COLOMBIA-21—Public Health Administration—Fellowships

Occupational Health—one six-month fellowship for study in Peru; and a 12-month fellowship for study in the United States.

Sanitary Engineering—one two-month fellowship for study in the United States.

Public Health Administration—one fellowship of ten and a half months' duration for study in Mexico.

(PAHO)

COLOMBIA-22—*A. aegypti* Eradication

Recent verifications confirm the eradication of *A. aegypti* from Colombia. From the beginning of the campaign up to December 1960, 3,801 localities were inspected; all 354 initially found positive are now negative.

(WHO/TA)

COLOMBIA-24—School of Public Health

The professor of microbiology assigned by PASB/WHO in 1959 to this project continued to assist in the teaching and research activities of the School. He also participated in the teaching of medical students at the National University of Colombia.

(WHO)

COLOMBIA-25—Promotion of Community Water Supplies

A full-time consultant was provided to assist the Government in the study of water supply systems at Cúcuta, Tunja, and Pamplona. A visiting consultant provided advisory services on the financing of water systems and certain technical problems of national concern. Assistance was also given for training personnel in well-drilling and ground water development, as well as in water rates and water supply administration.

(PAHO/CWSF)

COLOMBIA-52—Yellow Fever, Carlos Finlay Institute

Field studies in San Vicente de Chucurí, Santander, were continued during 1960. Up to December, 22 strains of virus had been isolated from mosquitoes. As of 31 October, 493,940 doses of yellow fever vaccine had been prepared at the Institute; 294,680 of which were sent to the following countries and territories: Aruba, 750; Cuba, 5,000; Chile, 2,200; Curaçao, 1,050; Ecuador, 10,000; British Guiana, 6,060; Jamaica, 500; Mexico, 62,000; Panama, 3,300; Peru, 80,510; and Venezuela, 123,310. Vaccinations administered in Colombia in the same period were 110,003.

(PAHO)

COSTA RICA-2—Malaria Eradication

The third year of coverage, which was completed in 1960, concluded the fifth and sixth cycles of DDT spraying. The vectors remain susceptible to both insecticides. 185,000 pounds of DDT were used. 72,174 houses were sprayed, an increase of 15 per cent over the first cycle. Many new houses were built or old ones modified. 393,560 inhabitants were protected directly or indirectly. Epidemiological activities were intensified through a field laboratory and a team of evaluators. 66,721 slides were examined, or 17.4 per 100 residents in the malarious zone. 1,980 were found positive, or 3 per cent, a reduction of 19 per cent in comparison with the previous year. Of the positive slides, only 103 were from the Atlantic side of the country (5.4 per cent of the total). Even on the Pacific side of the country marked improvement has occurred, although evaluation was somewhat incomplete and only some 28 per cent of the posts produced slides each month. A special study of the cause of persistence of transmission was done on the Pacific coast and showed that unsprayed new houses were the most important factor. Outdoor biting and migration of workers were also considered possible factors.

(PAHO/SMF)

(UNICEF)

COSTA RICA-14—Expansion of Local Public Health Services

Nursing Education—one 12-month fellowship for study in Puerto Rico; and one three-month fellowship for study in Uruguay and Chile.

Rehabilitation—one six-month fellowship for study in Puerto Rico.

(PAHO)

COSTA RICA-16—Public Health Administration—Fellowships

Epidemiology—one 12-month fellowship for study in the United States.

(WHO/TA)

COSTA RICA-18—Advanced Nursing Education

The international consultant arrived in October. After acquiring first-hand knowledge of the available nursing services, personnel, and educational facilities in the country, preliminary plans were laid to begin the advanced program with a course for nurse anesthetists, in view of a pressing need for a limited number of this type of personnel.

(PAHO)

COSTA RICA-21—Nutrition

Assistance was given in the preparation of a nutrition program.

(WHO)

(UNICEF, FAO)

COSTA RICA-22—Promotion of Community Water Supplies

A consultant aided the Government, which has been giving consideration to the creation of a national water authority, in the review of the legal draft of the proposed law.

(PAHO/CWSF)

CUBA-1—*A. aegypti* Eradication

The program of eradication of *A. aegypti* continued actively, as the campaign now has all the necessary resources. Of the 109 localities inspected by the end of December, 90 were found to be infested; post-treatment verification made in 68 of the latter revealed that 32 were still positive. The mosquito has shown decreased susceptibility to DDT in several districts of Havana.

(PAHO)

CUBA-3—Public Health Services

The team of consultants was completed and the plan of operations signed. The plan calls for a reorganization of two regional health services in the Province of Pinar del Río and one in each of the other five provinces. Decentralization of services was begun with initial activities at Pinar del Río, where a sanitary engineer assigned to the project in May worked on a sanitary survey of the Province in order to determine the main sanitation problems, and budgetary needs for 1960 and 1961. Work was also done on a survey and preparation of a water supply project for the city of Ovas, as well as in connection with the garbage collection and disposal of the city of Pinar del Río. Attention was also given to accommodation for a sanitary workshop, and for the storage of the equipment and materials supplied by UNICEF and the Government. A first course for the training of sanitary inspectors was completed during the year. Fellowships for training in

the country and abroad are considered decisive for the success of the project.

(WHO/TA)

(UNICEF)

CUBA-4—Nursing Education

A short-term consultant visited Cuba on two occasions for a total of approximately 13 weeks. Surprising progress was obtained in planning the new National School of Nursing. All of the 94 students who began their training on 1 October had at least 11 years of general education. The School is organized on modern lines, a marked contrast with previous nursing training in Cuba, which up to then had been carried out under laws passed in 1904.

(WHO)

CUBA-5—Malaria Eradication

Work on the preparatory phase was presented but, owing to delays, geographical reconnaissance was not started. A new agreement signed in August with the Government calls for initiation of the eradication program in July 1961. Progress was made in preparatory organizational activities. 712 notification posts were established during 1960, chiefly at clinics and with many doctors in health services assuming responsibility for notifying cases. In the first 10 months, these posts produced 22,699 slides, of which 1,236 (5.5 per cent) were positive (84 per cent *vivax*, 16 per cent *falciparum*). Active search for fever cases and investigation of outbreaks were initiated under the four Regional Malariologists. Studies of resistance of vectors to insecticide in 16 municipalities (19 localities) showed normal susceptibility to DDT in all localities, but resistance to dieldrin in eight. DDT will be employed for total coverage in Oriente Province only, which will start on 1 July. The other provinces will remain under surveillance, since in them malaria appears only sporadically.

This project included the following awards:

Malaria Eradication—one six-month fellowship for study in Venezuela and Mexico; two fellowships, each of two and a half months' duration for study in Mexico; two fellowships, each of three months and one week's duration for study in Mexico; and one three-week fellowship for study in Mexico.

(PAHO/SMF)

CUBA-6—Public Health Administration—Fellowships

Public Health Administration—one 11-month fellowship for study in Brazil; two fellowships, each of 10 and a half months' duration for study in Mexico; and one 12-month fellowship for study in Brazil and Puerto Rico.

Public Health Nursing—one two-month fellowship for study in Colombia.

(PAHO)

CUBA-7—Public Health Administration—Fellowships

Veterinary Public Health—one fellowship of 11 and a half months' duration for study in Brazil.

Public Health Administration—two fellowships each of 10 and a half months' duration for study in Mexico.

Sanitary Engineering—one 10-month fellowship for study in Chile.

(WHO)

CUBA-10—Promotion of Community Water Supplies

A consultant provided advisory services to the "Comisión Nacional de Acueductos y Alcantarillados," and to the Ministries of Public Health and of Public Works, with the specific task of cooperating in the drafting of technical regulations and specifications for design and construction of water supply systems. Advice was also given on the study and design of water treatment plants for the main urban centers in Cuba.

(PAHO/CWSF)

CUBA-11—Fellowships Sponsored by the Government of Cuba

This project consisted of the following awards during the calendar year:

Public Health Administration—seven three-month fellowships for study in Mexico; and one two-month fellowship for study in Mexico and Guatemala. These fellowships were financed by the Government of Cuba and administered by PASB/WHO.

(Government of Cuba)

DOMINICAN REPUBLIC-2—Malaria Eradication

The second cycle of dieldrin was interrupted after resistance appeared in September 1959. The first cycle of DDT, which was begun in March 1960, is scheduled for completion in 9 months. Owing to shortage of funds, 17 per cent of the malarious area was left unprotected. From March through October, 211,719 houses out of 273,140 were sprayed. 7,582 were found closed or refused spraying. In seven months, 217,650 pounds of DDT were used. The vector was susceptible to DDT in the 19 localities tested. Shortage of funds also severely hindered the evaluation service. Only 12 notification posts were established during the year. The 341 total posts could not be visited regularly, and production was reduced. The percentage of positive slides varied from 16 to 36 during eight of the first 10 months of 1960.

(PAHO/SMF)

(UNICEF)

DOMINICAN REPUBLIC-3—Nursing Education

The nursing adviser worked with the faculty of the National School of Nursing, which now consists of seven instructors, on an in-service program of teaching and supervision. Some work was also carried out on revising the curriculum with a view to strengthening the teaching of public health nursing. With the admission of its third class, the School now has 28 students.

(WHO)

DOMINICAN REPUBLIC-4—Public Health Services

Sanitation activities were reduced after May, when the sanitary engineer consultant was transferred. When another consultant was assigned to the project, it was gratifying to observe that as a result of the work of sanitary inspectors trained in the project in previous years, activities continued in the improvement of water supplies, installation of latrines, garbage collection and disposal, and training of food handlers. The health centers at San Cristóbal and Ciudad Trujillo continued to provide services to the population they cover, and it is proposed to extend activities to the whole country. A further public laundry-bath unit, the second, was inaugurated in the rural area of upper Najaro, Trujillo Province, on 26 December 1960. These public installations constitute what is considered a minimum unit of rural sanitation and consist of one drinking-water tap and sink; four sinks for washing laundry; two shower stalls (one for men, one for women); and, adjacent to these, two sanitary latrines. This second unit was built with funds contributed by the community and with the cooperation of the environmental sanitation service of the San Cristóbal health center.

This project included the following awards:

Environmental Sanitation—one 14-month fellowship for study in the United States; and one fellowship of 12 months and one week's duration, also for study in the United States.

(PAHO)

(UNICEF)

DOMINICAN REPUBLIC-8—*A. aegypti* Eradication

The work was continued, but at a slow pace, owing to the limited budget, which has not permitted the initiation of activities in Ciudad Trujillo.

(PAHO, WHO/TA)

DOMINICAN REPUBLIC-9—Public Health Administration—Fellowships

Laboratory Services—one two-month fellowship for study in the United States.

(WHO)

DOMINICAN REPUBLIC-13—Smallpox Vaccination

A national vaccination program was prepared in collaboration with personnel assigned to project Dominican Republic-52.

(PAHO)

DOMINICAN REPUBLIC-52—Yaws Eradication and Venereal Disease Control

By February 1960 the case-finding and initial treatment phase were completed throughout the whole country. These phases were followed by a surveillance phase during which any residual cases and their contacts will be ascertained and treated. In a survey covering 390,819 persons, 248 cases of infectious forms of yaws were found. The training of professional and auxiliary personnel for the venereal disease control program was continued. Attempts were made to bring into uniformity the operations of all venereal diseases clinics in the country's hospitals and to coordinate the efforts of the various medical care and public health agencies engaged in venereal disease control. Two full-time consultants have been collaborating with the Government of the Dominican Republic in developing these two programs.

(PAHO)

ECUADOR-4—Public Health Services

Consultants continued their assistance to the health authorities at the national and local levels; efforts were made to overcome the difficulties caused by the separation of the Health Department from the Ministry of Welfare, Labor, Health, and Hygiene. The Department is in Guayaquil and the Ministry in Quito.

This project included the following awards:

Laboratory Services—one three-month fellowship for study in Mexico and in Colombia.

Nutrition—two four-month fellowships for study in Guatemala and in Mexico.

Public Health Administration with emphasis on Leprosy—one eleven-month fellowship for study in Brazil.

(WHO)

(UNICEF)

ECUADOR-14—Malaria Eradication

The third year of total coverage was completed in March 1960. Owing to resistance of the principal vector, it was necessary to revise the entire program, to change from dieldrin to DDT, and to provide for two annual cycles. The reduction of spraying in almost all zones from April through December led to an increase of malaria. A new agreement, which transferred the direction and administration of the program to the Inter-American

Cooperative Health Service (SCISP), was signed and an emergency spraying program was put into effect in most of the country. In the third year, 378,377 houses were sprayed, many of them twice. 58 per cent were sprayed with dieldrin before resistance was found in some areas. Only 1.2 per cent were not sprayed. In all, 2,219,144 inhabitants were protected, directly and indirectly. 6 per cent more houses had to be sprayed in the third year, mainly because of the movement of the population into new agricultural areas where health conditions needed to be improved. The notification network is in the process of being expanded. In 10 months, 101,000 slides were examined, 70 per cent of which were obtained by passive case-finding. 2,534 voluntary collaborators produced 43 per cent of all slides; of these 9.4 per cent were positive as compared with 7.2 per cent for the service as a whole. Slide production increased in 1960 over 1959, part of the credit for which must go to voluntary collaborators.

This project included the following awards:

Malaria Eradication—one one-month fellowship for study in Guatemala, Honduras, and Mexico; four fellowships, each of two and a half months' duration, for study in Mexico; one fellowship of three months and one week's duration for study in Mexico; and one six-month fellowship for study in Venezuela and in Mexico.

Malaria Eradication with emphasis on Medical Entomology—one fellowship of four and a half months' duration for study in Brazil.

(PAHO/SMF, WHO/TA) (UNICEF, ICA)

ECUADOR-16—Nursing Education

In April the School of Nursing of the University of Guayaquil graduated its first class of 10 nurses under the reorganized curriculum. The total student body, including students admitted in 1960, numbers 17; the faculty seven. Since the entrance requirements were raised to completion of high school, the last two classes have been rather small; however, the number of students is expected to increase since more young women are becoming interested in nursing. In 1960 the advisers worked on an in-service education program for the faculty and assisted in the improvement of clinical practice areas.

(WHO)

ECUADOR-18—Leprosy Control

A consultant visited the country for two months and collaborated with the public health authorities in appraising the problem and in planning the operation of the control program.

(PAHO)

ECUADOR-20—Smallpox Eradication

The smallpox vaccination program continued to develop in an irregular fashion. From its beginning in 1958

to December 1960, 1,355,140 persons were vaccinated. The number of vaccinations given was less than expected, owing to lack of funds for salaries, per diem, and maintenance of vehicles to transport campaign personnel. The National Institute of Health "Leopoldo Izquieta Pérez" continued to produce a sufficient quantity of dried vaccine to cover the needs of the country.

(PAHO)

ECUADOR-22—Joint Field Mission on Indigenous Populations

Assistance was given in the preparation of the plan of operation of the project.

(WHO) (UN, ILO, FAO, UNESCO, UNICEF)

ECUADOR-53^a—National Institute of Nutrition

INNE has been evaluating the surveys of endemic goiter carried out in 1959. The teaching of nutrition in the secondary schools of Quito was revised. An investigation of the teaching of nutrition in schools of nursing was undertaken. The study on the standard curves of height and weight for people of the mountain and coastal areas was continued.

(WHO/TA)

(KF)

EL SALVADOR-2—Malaria Eradication

The change from dieldrin to DDT was begun in 1958, but coverage was irregular until a revised plan was put into effect in August 1959. After this change, there was a marked and steady improvement until July 1960, when unusually heavy rains produced an abnormal increase of the mosquito population. In spite of the adverse weather, positivity rates were lower in each month of 1960 than in the corresponding month of 1959. The second year and fourth cycle of coverage with DDT were completed in July 1960. A total of 281,430 houses are scheduled for treatment in the fifth cycle; of these, 196,180 were sprayed in the four months ending November 26, with a missed rate of 0.2 per cent. There are 1,250,000 inhabitants in the area to be sprayed. The 575 notification posts produced over 7,000 slides a month in the peak malaria season, when positivity varied between 15 per cent and 20 per cent, as compared with 25 per cent to 35 per cent in 1959. In November 1960, the rate was 12.7 per cent positive. Although the degree of DDT resistance of the vectors varies in much of the Pacific coastal plain, sufficient mortality is produced by wall spraying to justify the continuation of DDT until more effective insecticides

^a Grants received in 1960 from:
E. I. du Pont de Nemours and Co.
National Institutes of Health
Williams-Waterman Fund
W. K. Kellogg Foundation

are discovered. While it will be more difficult than in many other areas, the eventual eradication of malaria is believed to be feasible.

This project included the following awards:

Malaria Eradication—two one-month fellowships, one for study in Guatemala and in Mexico, and the other one for study in Mexico.
(PAHO/SMF) (UNICEF)

EL SALVADOR-5—Health Demonstration Area

After more than a decade of collaborating with the Government this project was completed in 1960. The project engineer devoted most of his time during the year to the evaluation of the project, and to the transfer of activities, personnel, and equipment to the regular health program of the country. A reorganization of the sanitary engineering services was planned; the project engineer also collaborated in the promotion of a national water supply program and participated in an additional 10-month training course for 16 sanitary inspectors. The evaluation of sanitation activities in this project confirmed its influence and benefit to the national program. Fourteen nurses completed a nine-month course.

This project included the following award:

Veterinary Public Health—one fellowship of 11 and a half months' duration for study in Brazil.
(WHO/TA) (ILO, FAO, UNESCO)

EL SALVADOR-9—Public Health Administration—Fellowships

Public Health Administration—one fellowship of two and a half months' duration for study in Mexico, Puerto Rico, Venezuela, and Brazil.
(PAHO)

EL SALVADOR-10—Planning and Organization of Hospital Services

In order to prepare a plan for the reorganization of hospital services, a study of the existing hospital resources was begun during the year. A National Hospital Services Committee was also established.
(PAHO)

FRENCH ANTILLES and GUIANA-2—*A. aegypti* Eradication

A. aegypti, which had been eradicated from French Guiana, reappeared in 1959 in several localities of the northwest. Those areas were treated and are negative at present. Progress is still slow in Martinique and Guadeloupe. Negative results in St. Martin have not yet been followed by the verification survey.
(WHO/TA)

FRENCH ANTILLES and GUIANA-3—Public Health Administration—Fellowships

Maternal and Child Health—one three-month fellowship for study in Brazil.
(PAHO)

FRENCH ANTILLES and GUIANA-5—Public Health Administration—Fellowships

Hospital Administration—one fellowship of nine and a half months' duration for study in the United States.
(WHO)

GUATEMALA-1—Malaria Eradication

The second year and fourth cycle of DDT spraying was completed in November 1960. 368,269 houses were sprayed in the third cycle and 374,430 in the fourth, with only 0.8 per cent missed. 438,500 pounds of DDT were used. The United Fruit Company sprayed 13,000 houses. Approximately 1,600,000 persons were directly protected. Serious DDT resistance was encountered in only two areas. In two localities, Sanarate and Finca Mocá, where conditions were favorable, larviciding with chlorthion was used with good results. Heavy rains, much movement of population, and a few large localized outbreaks caused a temporary increase in the number of cases during the summer and fall, but marked progress toward eradication was made in 1960. 2,000 notification posts produced an average of 7,000 slides per month, 3.2 per cent of which were positive during the height of the season. Active search for cases produced 21,555 slides of which 2.7 per cent were positive. The percentage of positive slides was 20.5 in 1958. It should be noted that more than half the positives were obtained from two epidemic localities. In an area in which there was considerable malaria transmission owing to high DDT resistance a pilot project which included mass treatment with drugs once a month was not completely successful, but the use of drugs together with antimosquito measures proved to be effective in preventing relapses in a large single outbreak.

This project included the following awards:

Malaria Eradication—one fellowship of three months and one week's duration for study in Mexico; and one fellowship of five months and three weeks' duration for study in Venezuela.

Medical Entomology—one fellowship of five months and one week's duration for study in Brazil, Peru, and Panama.
(PAHO/SMF) (UNICEF)

GUATEMALA-6—Nursing Education

Since the original program for the preparation of instructors of auxiliary nursing personnel is now being carried out by a well-prepared national instructor, greater

emphasis was placed on assistance to the Guatemala City National School of Nursing which provides basic nursing training. The enrollment at the School was 118 students. An in-service program in supervision and administration for graduate nurses was completed in the general hospital. Special attention was given to providing continuous advisory services to the extension programs for training auxiliaries in two hospitals of the interior.

This project included the following awards:

Nursing Education—two 11-month fellowships for study in Chile; and one six-month fellowship for study in the United States, Costa Rica, and Panama.
(*PAHO, WHO/TA*)

GUATEMALA-7—Public Health Administration—Fellowships

Veterinary Public Health—one fellowship of 11 and a half months' duration for study in Brazil.
(*WHO/TA*)

GUATEMALA-8—Public Health Services

The Organization's activities in environmental sanitation in this project were reduced with the transfer of responsibilities, personnel, equipment, and budget to SCISP. The training center was transferred from Amatitlán to Guatemala City, and an urban and a suburban health centers are being organized to be used as practice areas by the medical students. A recompilation and elaboration of sanitary codes was proposed. The National Department of Health was reorganized and now includes five main divisions; and a national health plan for 1961-1966 was almost completed. Ten new health centers and nine sanitary posts were created in rural areas. Nineteen physicians, 12 nurses, 16 sanitary inspectors, 38 nursing auxiliaries, and 8 laboratory auxiliaries were trained.

This project included the following award:

Public Health Administration—one fellowship of 10 and a half months' duration for study in Mexico.
(*WHO*) (UNICEF)

GUATEMALA-11—Tuberculosis Control

The pilot program in the Department of Escuintla, which is testing the efficacy of isoniazid in the domiciliary and ambulatory treatment of tuberculosis, was continued and extended to the Department of Santa Rosa. Methods of evaluating the administration of the drug to patients and contacts are under study.

(*WHO/TA*) (UNICEF)

GUATEMALA-12—Public Health Administration—Fellowships

Public Health Nursing—one 12-month fellowship for study in Puerto Rico.
(*PAHO*)

HAITI-1—Yaws Eradication

The surveillance phase covered an area with 2,350,000 inhabitants, among which 751 presumed cases of infectious yaws were detected and treated. However, only 1.5 per cent of the suspect ulcers were of yaws etiology. In the area surveyed, the incidence of infectious yaws per 10,000 was reduced from 10 in 1959 to 3 in 1960.

(*WHO*) (UNICEF)

HAITI-4—Malaria Eradication

Arrangements for reactivating the program, suspended since December 1958, were under discussion during 1960. Surveys of insecticide susceptibility showed dieldrin resistance in some areas, but susceptibility to DDT in all departments tested. The Ministry of Public Health reported 29,636 cases of malaria in the first 10 months of 1960.

This project included the following award:

Malaria Eradication—one two-week fellowship for study in Mexico.
(*PAHO/SMF*) (UNICEF, ICA)

HAITI-9—Public Health Laboratory

A laboratory consultant provided technical assistance on administration and on the development of several specific activities of the national laboratory.
(*PAHO*)

HAITI-12—Public Health Administration—Fellowships

Laboratory Services—one eight-month fellowship for study in Canada.

Public Health Administration—one 12-month fellowship for study in Canada.

Veterinary Public Health—one five-week fellowship for study in Mexico and the United States.

Nursing Education—one 12-month fellowship for study in Canada.
(*PAHO*)

HAITI-15—Public Health Administration—Fellowships

Sanitary Engineering—three fellowships, each of 10 and a half months' duration, for study in Mexico; and one fellowship of 12 and a half months' duration for study in Mexico.

(*WHO*)

HAITI-16—Public Health Services

A plan to develop a comprehensive, integrated health service is being studied. In the meantime, the assistance

provided was limited to direct technical advice to the Secretary of Public Health.

(WHO/TA)

(ICA)

HAITI-19—Medical Education

A full-time professor of physiology was appointed to assist in the organization of the Department of Physiology and to give advice on the general reorganization of the medical part of the School of Medicine and Pharmacy.

(PAHO)

(ICA)

HAITI-20—Nutrition

Discussions have been held with the Government and FAO on a proposal to establish a Nutrition Council at the Presidential level. The Council would be responsible for the coordination and integration of the nutrition activities carried out by the Departments of Public Health, of Agriculture, and of Education.

(PAHO)

(UNICEF)

HONDURAS-1—Malaria Eradication

The first year of DDT (second cycle) was completed in June 1960, with 242,000 houses sprayed and 1,279,000 inhabitants directly protected. Only 912 houses were found closed or refused spraying. Resistance of vectors to dieldrin was observed in departments where this was previously known, but no DDT resistance was found. 1,500 notification posts have been established, more than half of them producing slides. Of 109,677 slides examined in 1960, 5,517 or 5.03 per cent, were positive. Active search for cases was insignificant, volunteers producing 109,540 slides, of which 5,490 were positive.

(PAHO/SMF)

(UNICEF, ICA)

HONDURAS-4—Public Health Services

Progress was achieved with the organization and official creation of the Department of Sanitary Engineering in the Ministry of Public Health and Welfare. In the coming year this action will permit an increase in sanitation activities in the country and the pooling of personnel and equipment, which up to now has been dispersed. Drilling activities were successfully initiated though equipment was limited. The demonstration areas were expanded; rural water supplies, latrine construction, and building of health units were continued. One health center, 5 subcenters, 5 sanitary posts, and 4 maternal and child centers were inaugurated. Another training course for sanitary inspectors included instruction on food hygiene activities. The project engineer gave assistance to the Government in the preliminary plans for the development of Puerto Cortés. Discussions were held for possible assistance to the engineering school in the training of sanitary engineers.

(WHO/TA)

(UNICEF)

HONDURAS-6—Public Health Administration—Fellowships

Public Health Nursing—one 12-month fellowship for study in Puerto Rico and Guatemala.

Veterinary Public Health—one 11-month fellowship for study in Brazil.

Public Health Administration—one fellowship of 10 and a half months' duration for study in Mexico.

(PAHO)

HONDURAS-8—Medical Education

A consultant spent two weeks in Tegucigalpa to review and give advice on the selection of students entering the medical school.

(PAHO)

HONDURAS-9—Promotion of Community Water Supplies

A consultant was provided to discuss various aspects of a law to reorganize the water supply services of the country.

(PAHO/CWSF)

JAMAICA-2—Malaria Eradication

Spraying was suspended in five northern and western parishes (90,846 houses) in July. A so-called "Twilight Zone," the northern half of five southern parishes (80,000 houses) is being intensively evaluated with a view to suspension of spraying at the end of the year. This suspension will leave about 120,000 houses for further cycles of DDT. 184,500 slides were examined in 1960. There was a marked decrease in the number of positives—134 or less than 1 per 1,000. Intensive efforts have been made to recruit active volunteer collaborators, to stimulate public awareness of the need for evaluation, and to treat all cases in the cleared and "twilight" zones. Mass treatment was begun in the most persistent foci where various causes have interfered with eradication.

(PAHO/SMF)

(UNICEF, ICA)

MEXICO-14—Nursing Education

Consultation service was given on a five-month course for nurse instructors conducted by the Nursing Division of the Ministry of Public Health and Welfare; to six schools of nursing outside of Mexico City; to the Nursing Division on its initial plans for a survey of nursing resources and needs in Mexico; and to various other divisions of the Ministry of Public Health and Welfare on their program of orientation for regional nurse instructors who are to prepare auxiliary nursing personnel.

(PAHO)

MEXICO-15—State Health Services

The plan of operation for this project was prepared. Assistance to the health services in the States of Yucatán and Tlaxcala has already started. This project will merge with Mexico-22.

(PAHO)

(UNICEF)

MEXICO-18—Public Health Administration—Fellowships

Public Health Administration—one nine-week fellowship for study in Puerto Rico, Colombia, and Peru.

(WHO)

MEXICO-22—Public Health Services (Guanajuato)

The international sanitation personnel consisted of one sanitary engineer and one sanitarian. 144 communities have been provided with small water supplies (consisting of a drilled well, power pump, elevated tank, and one or more public faucets). Water supply systems were extended to sections of many communities, where more public faucets were installed as well as house connections at the expense of the local people. Operation and maintenance cost of these systems are being covered by the users; a program of latrine construction has been initiated in 130 communities (175 latrines were installed in rural schools); and in 29 communities housing improvements have been made. Training courses for sanitary inspectors and sanitation auxiliaries were continued, and one course for well-drillers was completed. Assistance was also given with public health nursing and health education.

The project included the following awards:

Public Health Administration—one three-month fellowship for study in Puerto Rico, Brazil, Argentina, Chile, and Peru; and one fellowship of three months and two weeks' duration for study in the same countries and in Honduras.

(WHO)

(UNICEF)

MEXICO-23—National Institute of Nutrition

This project consisted of the following award:

Nutrition and Dietetics—one 12-month fellowship for study in the United States.

(WHO/TA)

(FAO, UNICEF)

MEXICO-25—Public Health Administration—Fellowships

Public Health Administration—one three-month fellowship for study in Peru, Chile, and Brazil.

Venereal Diseases—one one-month fellowship for study in Curaçao, Colombia, Ecuador, Peru, and Chile.

Health Statistics—one fellowship of four and a half months' duration for study in Colombia, Chile, and Brazil.

Nutrition—one six-week fellowship for study in the United States.

Hospital Administration—one nine-week fellowship for study in Brazil, Chile, and Peru.

(PAHO)

MEXICO-28—Public Health Laboratory

This project consisted of the following awards:

Food Control—one four-month fellowship for study in the United States.

Pharmacology—one six-month fellowship for study in the United States.

(PAHO)

MEXICO-29—Leprosy Control

A full-time consultant provided technical advisory services in the preparation of a national leprosy control program. Planned according to the latest available knowledge on the matter, the program represents both a modification and an expansion of the Government's previous measures against leprosy.

(WHO)

MEXICO-30—School of Public Health

A nurse-educator provided advisory services until April on the public health nursing curriculum and field training programs. Technical personnel of the Zone II Office continued to cooperate with the School in some subjects, such as health education and environmental sanitation.

This project included the following award:

Food Control—one fellowship of five and a half months' duration for study in the United States.

(WHO)

MEXICO-32—Medical Education

A short-term consultant provided assistance to the Ministry of Public Health and Welfare in the preparation of a Round Table on the Teaching of Health Education in Medical Schools, held in León, Guanajuato, Mexico, 21–26 August.

This project included the following award:

Organization of Medical Education—one 12-month fellowship for study in Canada.

(WHO)

MEXICO-35—Environmental Sanitation Training

Supplies and equipment were furnished to the School of Sanitary Engineering of the National Autonomous University of Mexico.

(WHO)

MEXICO-38—Tuberculosis Control

The final stage was reached in the preparation of a tuberculosis survey and of plans for a control campaign.

This project included the following awards:

Tuberculosis Control—one three-month fellowship for study in Switzerland and Kenya; and one fellowship of two and a half months' duration for study in Kenya.

Public Health Administration with emphasis on Tuberculosis Control—one fellowship of 11 and a half months' duration for study in the United Kingdom and in Africa.
(WHO) (UNICEF)

MEXICO-39—Promotion of Community Water Supplies

Plans for projects for providing water to urban areas needing expanded facilities were discussed with the Government.

This project included the following award:

Environmental Sanitation with emphasis on Sanitary Engineering—one fellowship of three and a half months' duration for study in the United States.

(PAHO/CWSF)

MEXICO-40—Mental Health

The consultant assigned to the project in 1959 completed his work, and a comprehensive report with recommendations for improvement and expansion of mental health activities in the country was presented to the Government.

(PAHO)

MEXICO-53—Malaria Eradication

The fourth year of total coverage was begun in January. Spraying was discontinued in a number of areas and surveillance was instituted. Case-finding operations increased markedly. The eighth cycle of spraying was completed in December. Large sections of the malarious area were shifted from the attack into the consolidation phase during the year. Spraying was suspended in 2,621,666 houses by the end of the year and reduced to 2 gm./m.² once a year in the remaining 1,623,814 houses; persons protected amounted to 19,104,660. 24 flying squads were set up to spray foci in zones under consolidation where transmission recurs. The shift to consolidation has led to steadily increasing emphasis on evaluation and epidemiological investigation in localities where transmission occurred. The overlapping of spraying and evaluation efforts produced an increased financial burden at this time. Evaluation is being increased as rapidly as funds permit. By the end of November, of 1,051,539 slides examined from a population of about 19,000,000, 0.29 per cent were found positive. 290,353 slides, of which 0.36 per cent were positive, were produced by notification

posts, while National Malaria Eradication Commission (CNEP) personnel produced 761,186 slides, of which 0.27 per cent were positive. The use of primaquine for the radical cure of patients and selected "contacts" was instituted. Research was carried on in entomological and epidemiological methods. There was no significant change in resistance, and DDT resistance was seen only in nonmalarious areas. Public health education efforts were intensified.

This project included the following awards:

Malaria Eradication—one two-week fellowship for study in Venezuela; and two four-month fellowships for study in Brazil.

(PAHO/SMF, WHO/TA)

(UNICEF)

NICARAGUA-1—Malaria Eradication

The completion of the fourth cycle of DDT, which was scheduled for December, was delayed because of heavy rains. The degree of DDT resistance and the areas in which it was found have not changed appreciably. Two foci of high transmission—Condegas and the shores of Lake Managua, near Managua—have been under larviciding treatment. Results were good except where vegetation was dense. Of the 16 departments into which the country is divided, transmission persisted in 5, where mosquito resistance to insecticides presents a problem. In these 5 departments 58,877 slides were obtained in 10 months; 5,754 or 9.8 per cent of them were positive and constituted 92 per cent of the cases in the country. Heavy rains led to an increase in the number of cases in almost all departments during the last six months. Since November all *vivax* cases reported during the year have been receiving radical treatment. Administration of the campaign was improved during the last months of the year.

This project included the following awards:

Malaria Eradication—one fellowship of three months and three weeks' duration for study in Jamaica and Mexico; and two fellowships, each of two and a half months' duration, for study in Mexico.

(PAHO/SMF)

(UNICEF, ICA)

NICARAGUA-5—Nursing Education

Fifteen nurses were graduated from the National School of Nursing. The student body, including 28 students admitted to the first year class, now numbers 54. Two nurse instructors returned from study abroad and two others left on fellowships. In-service education for the members of the faculty continued, and further efforts were made to improve clinical practice areas. The School's program was evaluated during the year and will be discussed at a seminar in February 1961.

This project included the following awards:

Nursing Education—one 12-month fellowship for study

in Costa Rica; and two fellowships, each of two months' duration, for study in Peru, Brazil, and Chile.

(WHO)

NICARAGUA-7—Public Health Administration—Fellowships

Public Health Nursing—one four-month fellowship for study in Colombia and Peru.

Midwifery—one 12-month fellowship for study in Costa Rica.

Nutrition—one two-year fellowship for study in Guatemala.

(PAHO)

PANAMA-1—Public Health Services

Plans prepared during the year included the following: a preliminary plan for consolidating the various nursing services at the national level; a complete health plan for the West Region of the country; and a 20-year plan for the construction of water supplies in the interior of the country. A study of the yield and performance of 50 wells drilled by the health authorities showed that a great improvement could be obtained if slight modifications were made. These modifications will be introduced during 1961. A new regulation for sanitary inspectors and a new report form were prepared during the year. The sanitary engineer assigned to the project also collaborated with the national water authorities in the development of plans and programs for the expansion and construction of public water supplies and in the drafting of the law for the establishment of a national water and sewage works authority. In addition, in-service training was given to professional and auxiliary personnel.

(WHO/TA)

(UNICEF)

PANAMA-2—Malaria Eradication

In the third year of spraying, which was completed in August, 131,270 houses were treated and 9,100 or 6.3 per cent missed. However, 44 per cent were sprayed at intervals longer than 12 months. 76,200 pounds of dieldrin were used, and 562,495 inhabitants were protected. No resistance has been found so far. 1,352 notification posts and 25 evaluators produced 76,984 slides, of which 5,233, or 6.7 per cent, were positive. This number of slides represents an increase of 43 per cent over the previous year. The increase was mainly in *P. vivax* which accounted for 86 per cent of all cases. Twenty-three epidemiological investigations were made. The major cause of persistence was held to be either the building of new houses or considerable alteration of sprayed surfaces during the 12-month cycle, but irregular cycles also played a part (cycles of 13–14 months were common). Outdoor biting also

contributed to persistence. A revision of the entire program is under way.

(PAHO/SMF)

(UNICEF)

PANAMA-8—Public Health Administration—Fellowships

Veterinary Public Health—one 12-month fellowship for study in the United States.

(PAHO)

PANAMA-9—Promotion of Community Water Supplies

A consultant reviewed and gave advice on a draft law for the establishment of a national water authority.

(PAHO/CWSF)

PANAMA CANAL ZONE-1—Malaria Eradication

The third cycle of coverage was completed in selected areas. The number of autochthonous cases decreased from 31 in the second to 19 in the third cycle, while imported cases, all acquired in Panama, rose from 126 to 164.

(PAHO/SMF)

PARAGUAY-1—Malaria Eradication

The sprayed areas comprise the 1,716 localities originally determined to be malarious and a new area with 380 localities. By the end of October the third year of spraying was completed in the original malarious area and the second in the new area. Malaria appears in epidemics in parts of the country, and then disappears for several years. The number of cases and prevalence of *A. darlingi* in these areas vary. The study of both cases and prevalence was intensified during the year. No insecticide resistance has been found. In order to cover a total population of 1,770,000, the notification network has been extended to 1,351 localities, but reporting was very weak. Only 10,117 slides were produced in 12 months, 805 (7.9 per cent) of which were positive. Active search for cases produced 32,138 slides in 12 months. Although positive slides were found in 15 of 16 departments, many of these showed only a few cases.

This project included the following awards:

Malaria Eradication—three six-month fellowships, all for study in Venezuela and Mexico; and two fellowships, each of two and a half months' duration, for study in Mexico.

(PAHO/SMF)

(UNICEF, ICA)

PARAGUAY-9—Leprosy Control

The consultant continued to provide advisory services on leprosy control work, which now has been integrated into other public health activities at the local level. A

demonstration area, covering 18 per cent of the population of the country, was set up to train personnel in leprosy control, to improve measures presently in use, and to test new control methods. Case-finding and ambulatory treatment were continued as planned.

(WHO)

(UNICEF)

PARAGUAY-10—Public Health Services

A special evaluation of the health service of the country was carried out by PASB/WHO Headquarters personnel. The sanitary engineer assigned to the project furnished advisory services to the Government in the development of a national program for the construction of water supplies in all the cities of Paraguay. As a result of an intensive smallpox vaccination campaign 87.3 per cent of the population was vaccinated. The environmental sanitation program led to great improvements in water supply and rural excreta disposal in 16 health center areas. The expansion of the rural water supply program was approved. The health education courses offered for teachers of rural schools were attended by more than 100 teachers. 116 public health workers, such as professional midwives, sanitary inspectors, nursing auxiliaries, and laboratory technicians were trained.

This project included the following awards:

Public Health Administration—one 10-month fellowship for study in Chile; and one fellowship of 11 and a half months' duration for study in Brazil.

(WHO/TA)

(UNICEF)

PARAGUAY-12—Public Health Administration—Fellowships

Public Health Administration—two 11-month fellowships each for study in Brazil; three fellowships, each of 11 and a half months' duration, for study in Brazil; and one fellowship of 10 and a half months' duration for study in Mexico.

Health Education—one 10-month fellowship for study in Chile.

Parasitology—one four-month fellowship for study in Chile.

(WHO)

PARAGUAY-13—Public Health Administration—Fellowships

Health Education—one 12-month fellowship for study in Chile.

Public Health Administration—one 12-month fellowship for study in Puerto Rico; and one three-month fellowship for study in Chile.

(PAHO)

PARAGUAY-15—Smallpox Eradication

The regular public health services of the country have assumed responsibility for maintaining the level of immunity against smallpox achieved as a result of the intensive smallpox campaign completed in February 1960. A consultant cooperated with the Government of Paraguay until the campaign was concluded as well as during the subsequent stage of making smallpox vaccinations a regular activity of health centers. By the end of the campaign, 1,462,904 persons, or 86.7 per cent of the country's estimated population as of 30 June 1959, had been immunized.

(PAHO)

PERU-5—Malaria Eradication

Surveillance operations continued in the Department of Tacna. Spraying was suspended in a number of coastal areas. Improved epidemiological operations revealed the need for two cycles per year in several coastal valleys. The program has been developed by stages. During 1960, the third year of total coverage was completed in the Pacific coast region; the second in the eastern slope of the Andes; and the first year in the Amazon region. The second year of surveillance was completed in the Department of Tacna. No autochthonous cases occurred. 521,600 houses were sprayed and 2,226,000 inhabitants protected directly. Both dieldrin and DDT were used. Evaluation organization was strengthened during the year, and supervision of notification posts was improved. 7,826 posts are established. New laboratories had to be established and more microscopists hired. Of 262,190 slides examined (12 per cent of the population in 10 months) 3,214 or 1.23 per cent were positive. Only 6 per cent were *falciparum*. The positivity rate varied according to the years of coverage: 3 years, 0.61 per cent; 2 years, 1.18 per cent; and one year, 3.64 per cent.

This project included the following awards:

Malaria Eradication—one fellowship of four and a half months' duration for study in Brazil; four fellowships, each of four and a half months' duration, for study in Mexico; and four fellowships, each of three months and one week's duration, for study in Mexico.

(PAHO/SMF, WHO/TA)

(UNICEF, ICA)

PERU-15—Advanced Nursing Education

The nurse educator continued rendering advisory services to the nursing schools in the provinces and to the Institute for Postgraduate Studies in Nursing, which graduated its first class of 14 instructors and 12 supervisors. The revised admission procedures now require the nurses applying for postgraduate study at the Institute to supply information on their basic training. The information obtained shows that the quality of instruction given at the different schools in the country varies greatly,

and has enabled the faculty of the Institute to devote special attention to the subjects in which training was most needed. Thirty-five students began the second course in May.

This project included the following awards:

Nursing Education—one 12-month fellowship for study in Costa Rica.

Public Health Nursing—two fellowships, each of 11 months' duration, for study in Chile.

(WHO)

PERU-21—Public Health Administration—Fellowships

Public Health Administration—one 10-month fellowship for study in Chile; and two fellowships, each of 11 and a half months' duration, for study in Brazil.

Sanitary Engineering—one fellowship of 10 and a half months' duration for study in Mexico.

Public Health Dentistry—one fellowship of 11 and a half months' duration for study in Brazil.

Hospital Administration—one 10-month fellowship for study in Chile; and one 13-month fellowship for study in Brazil.

(WHO)

PERU-22—Public Health Services

Plans for the development of the project at the intermediate and local levels in the Junín area were prepared. Activities of the sanitary engineer assigned to this project were mainly concerned with the promotion of a water supply program in Peru, assistance in the preparation of a request for a loan for the extension of the water supply of Arequipa, and in the drafting of a law creating a new autonomous national authority for water and sewage works. Some progress was made toward the integration of the Divisions of Sanitary Engineering of the Ministry of Public Health and Welfare and of SCISP. Advisory services were also given in connection with a new water rate structure for the country.

This project included the following awards:

Hospital Administration—one 10-month fellowship for study in Chile; and one 13-month fellowship for study in Brazil.

Public Health Administration—two fellowships, each of 10 and a half months' duration, for study in Mexico; and one 10-month fellowship for study in Chile.

Maternal and Child Health—one fellowship of 10 and a half months' duration for study in Mexico.

Veterinary Public Health—one 10-month fellowship for study in Chile.

(WHO/TA)

(UNICEF)

PERU-23—Joint Field Mission on Indigenous Populations

The consultant continued his assistance to the Puno-Tambopata program, which has expanded its activities in the area. A course to train voluntary health auxiliaries, recruited from the communities where they are going to work, was started. A program of environmental sanitation was developed in connection with the Andean Mission project in Bolivia and Peru. Two brochures on rural water sanitation and excreta disposal were produced.

(WHO/TA)

(UN, ILO, FAO, UNESCO)

PERU-24—Leprosy Control

A consultant visited the country for two months and cooperated with the public health authorities in appraising the problem and in planning a control program.

(WHO)

PERU-25—Public Health Administration—Fellowships

Public Health Administration—one 12-month fellowship for study in the United States.

Public Health Administration with emphasis on Mental Health—one 12-month fellowship for study in Puerto Rico.

Public Health Nursing—one 12-month fellowship for study in Puerto Rico.

Hospital Administration—one 16-month fellowship for study in Chile.

(PAHO)

PERU-29—Tuberculosis Control

The Tripartite Agreement to carry out a prevalence survey and control activities was signed. Part of the international team arrived in the country during the year and began preliminary work on the project.

(WHO)

(UNICEF)

PERU-30—Promotion of Community Water Supplies

Advice was given on the technical, administrative, and financial aspects of the project. Assistance was also given to the National Public Works Committee by a project engineer. Personnel were trained in well-drilling and instruction on the framing of water rates was given.

This project included the following awards:

Environmental Sanitation with emphasis on Water Supply—two fellowships, each of one month's duration, for study in Ecuador, Colombia, Mexico, and Puerto Rico.

(PAHO/CWSF)

PERU-31—Medical Education

Books, publications, and audio-visual equipment were provided to the School of Medicine of the University of San Marcos.

(PAHO)

PERU-32—Infantile Diarrhea and Malnutrition

Research was begun on the nature of the alterations in water and electrolyte metabolism in infants suffering from diarrhea and malnutrition, in an effort to find methods of treatment which can be used in areas where there are few or no health care facilities.

(PAHO)

(NIH)

SURINAM-1—Malaria Eradication

With the completion in 1960 of two and a half years of spraying and five cycles of DDT, the Coastal Zone was free of autochthonous cases of malaria throughout the year. Over 36,000 houses were sprayed in the last complete cycle of DDT, which was used in the coastal and savanna areas, while 14,500 were treated with dieldrin, which was only used in the interior of the country. With a fairly constant surveillance rate (about 21 per cent of the population annually) the percentage of positive slides fell from 11.2 per cent in April 1959 to 1.6 per cent in December 1960. It is planned to place the coastal zone under surveillance and change the interior zone from an annual dieldrin treatment to DDT spraying twice a year. No resistance tests have been made.

(PAHO/SMF)

(UNICEF)

SURINAM and NETHERLANDS ANTILLES-1—

***A. aegypti* Eradication**

Aruba, Bonaire, Saba, St. Eustatius, and St. Martin continued to be negative. Curaçao seems likely to become completely negative with recent improvements in spraying operations. In Surinam, the survey to delimit the infested area was completed during the year and disclosed high indices and generalized infestation.

(PAHO, WHO/TA)

TRINIDAD-3—Malaria Eradication

Trinidad is approaching the end of the attack phase, spraying in *A. aquasalis* areas (fourth cycle of DDT completed in December) being combined with mass drug treatment in *A. bellator* areas (containing about 10,000 houses and 40,000 inhabitants). Mass drug treatment has been in effect since November 1959 and had apparently halted transmission by March 1960; but the refusal of half the population to accept treatment is an increasingly difficult problem, especially in towns where malaria has not been serious. Persons living in exposed areas, however, and those with fever generally accept drug treatment.

Since March, only one imported and two autochthonous cases have been reported. Mass drug treatment for adults consisted of 450 mg. of chloroquine and 45 mg. of primaquine monthly; children's doses were given according to age. By December, hospital doctors, nurses and volunteers had produced 817 slides and evaluators 108,183.

(PAHO/SMF)

(UNICEF)

TRINIDAD-6—Public Health Legislation

The consultant made two visits to Trinidad and made a complete review of existing health legislation with the exception of the provisions relating to quarantine. His recommendations are in process of adoption, and some regulations have already been approved by the legislature. The final report will be sent to the Government in 1961.

(WHO)

UNITED STATES-7—Public Health Administration—Fellowships

Organization of Public Health—one two-month fellowship for study in Taiwan, the Philippines, Vietnam, Thailand, India, and Nepal; and one nine-week fellowship for study in Sweden, Denmark, United Kingdom, and Switzerland.

Organization of Public Health Teaching, with emphasis on Infectious Diseases—one 10-week fellowship for study in Panama, Colombia, Chile, Brazil, Venezuela, and Jamaica.

Medical Entomology—one three-month fellowship for study in the United Kingdom, Italy, Israel, Uganda, Republic of Congo, Nigeria, Ghana, and Liberia.

Mental Health—one three-month fellowship for study in Denmark, Netherlands, Germany, Switzerland, and the United Kingdom.

(WHO)

UNITED STATES-10—Consultants in Specialized Fields of Public Health

Consultants rendered advisory services on occupational morbidity and mortality to the Occupational Health Division of the National Office of Vital Statistics; on control programs in cancer, heart disease, air pollution, radiological health, and health of the aging and the aged, to the USPHS; on chronic disease programs to the California State Health Department; and on the development of statistical analysis and research services to the State Health Department of Virginia.

(WHO)

UNITED STATES-11—Public Health Administration—Fellowships

Public Health Teaching, with emphasis on Hospital Administration—one fellowship of three and a half months'

duration for study in Japan, Taiwan, India, Iran, and Egypt; one two-months' fellowship for study in Brazil, Argentina, Chile, Peru, and Colombia.

Public Health Teaching, with emphasis on Microbiology—one six-week fellowship for study in Ecuador, Peru, Bolivia, and Chile.

Public Health Teaching, with emphasis on Sanitary Engineering—one two-month fellowship for study in Mexico, Ecuador, Peru, Chile, Uruguay, Brazil, Trinidad, and Barbados; and one two-month fellowship for study in Switzerland, India, Thailand, Hong Kong, Manila, Taiwan, and Japan.

Public Health Teaching, with emphasis on Occupational Health—one two-month fellowship for study in Mexico, Peru, and Chile.

(PAHO)

URUGUAY-5—Public Health Services

A team of full-time consultants furnished technical advice in several areas of public health services. A much higher budget for the project has been approved by the Government and six health centers in the Departments of Artigas, Durazno, Tacuarembó, Rivera, and Salta are in full operation, servicing an estimated population of 315,000 inhabitants. A department of nursing in the Ministry of Public Health is in process of being created and 33 health visitors were also trained. Environmental sanitation in the five above-mentioned departments included in the project continued with emphasis on water supplies and latrine installation. Twelve wells were drilled in two of the departments. A survey of the five department capitals and of some other cities was completed by the sanitary inspectors. Another course on environmental sanitation trained a group of 20 sanitary inspectors for the program. The engineer consultant of the project assisted in the preparation of the VII Congress of the Inter-American Association of Sanitary Engineering held in Montevideo.

This project included the following award:

Environmental Sanitation, with emphasis on Sanitary Engineering—one 12-month fellowship for study in the United States.

(WHO/TA)

(UNICEF)

URUGUAY-8—Public Health Administration—Fellowships

Public Health Dentistry—one fellowship of 11 and a half months' duration for study in Brazil.

(WHO)

URUGUAY-10—Public Health Administration—Fellowships

Medical Education—one fellowship of two and a half months' duration for study in the United States.

Biostatistics—one fellowship of 19-months and one week's duration for study in the United States.

(PAHO)

URUGUAY-13—Training of Public Health Personnel

This project consisted of the following award:

Public Health Nursing—one fellowship of 11 and a half months' duration for study in Brazil.

(PAHO)

(UNICEF)

URUGUAY-15—Waterworks Operators School

The Second Waterworks Operators Course was held from 14 November to 17 December in Montevideo. The eight students who attended the course were engaged in national water supply services. Consultant services and limited supplies and equipment to assist the Government in presenting the course were provided.

(WHO)

URUGUAY-18—Promotion of Community Water Supplies

This project consisted of the following award:

Environmental Sanitation—one fellowship of one and a half months' duration for study in Peru, Ecuador, Colombia, Guatemala, Mexico, and the United States.

(PAHO/CWSF)

VENEZUELA-7—Malaria Eradication

Venezuela continued its program without international assistance. The program was observed with great interest because of the Government's pioneering work over the past years. Large areas of the country remained free of autochthonous cases. The second year of mass drug treatment, with either weekly doses of chloroquine or schedules of pyrimethamine every 10 or 15 days, was carried on with varying results in the two areas where spraying alone was insufficient to halt transmission. The highest incidence of malaria was found in the States of Táchira and Mérida, in the west, where outdoor biting by *A. nuñez-tovari* and immigration of agricultural labor from Colombia was combined with an unusually wet season that caused abnormally high anopheline densities. The result was a number of small but sharp outbreaks of both *vivax* and *falciparum* malaria. It was in this area that chloroquine-resistant *falciparum* cases were found. The people often refused regular drug administration until an epidemic occurred. When drug administration was closely supervised it appears to have been effective.

This project included the following award:

Malaria Eradication—one five-week fellowship for study in Mexico, Guatemala, and El Salvador.

(PAHO/SMF)

**VENEZUELA-9—Public Health Administration—
Fellowships**

Food Control—one fellowship of 16 and a half months' duration for study in the United States.
(PAHO)

**VENEZUELA-10—Public Health Administration—
Fellowships**

Public Health Administration, with emphasis on Industrial Hygiene—one 12-month fellowship for study in the United States.
(WHO)

VENEZUELA-11—Plague Investigation

The report on an epidemiological study of the plague problem in Venezuela was submitted to the Government. The disease is now confined to a small area situated on the border between the States of Aragua and Miranda, where plague appears sporadically in man and more regularly in sylvatic rodents, several species of which are infected.
(PAHO)

**VENEZUELA-13—Yaws Eradication and Venereal
Disease Control**

A consultant made a survey of and recommendations on the venereal diseases problem and the control measures being used.
(PAHO)

VENEZUELA-14—Nursing Education

An evaluation of the 1959 programs revealed that there was a need for well-qualified instructors and supervisors; consequently, the project was expanded to include assistance to a postgraduate course organized within the School of Public Health in Caracas. Four nurses received travel grants to visit four centers of postgraduate training in South America, and one nurse left for a year's study in the United States; upon their return, all will serve as instructors in the postgraduate course. This new program takes advantage of the fact that during 1959–1960 over 80 graduate nurses completed pre-university education and are thus ready for postgraduate studies in nursing.
(WHO/TA)

VENEZUELA-16—*A. aegypti* Eradication

The campaign was continued, as planned, at two widely separated but strategic points—the Federal District, and the State of Táchira which borders on Colombia where eradication has already been achieved. The initial surveys were completed in the Federal District and the States of Miranda and Táchira, and are under way in the States of Aragua, Carabobo, Guárico, Mérida, and Trujillo.

Of the 86 municipalities and 827 localities inspected in 1960, 25 and 70, respectively, were positive.
(PAHO)

VENEZUELA-17—Medical Education

Technical advisory services were provided for the planning and preparation of a meeting, held in Mérida, at which a consultant participated in discussions with the deans and professors of the four medical schools of the country on the objectives and content of the medical curriculum, teaching methods and administration of medical schools; specific recommendations were made on the teaching program of the Faculty of Medical Sciences of the Central University of Venezuela.
(PAHO)

VENEZUELA-19—School of Public Health

Teaching supplies and equipment were provided to the School of Public Health of the Faculty of Medical Sciences of the Central University of Venezuela. The Regional Health Education Adviser visited the School and furnished technical advisory services on plans to add a course on health education to the curriculum.
(WHO)

VENEZUELA-24—Public Health Services

Three consultants visited the health units of Mérida, Ciudad Bolívar, and “the sanitary region” of the State of Yaracuy in order to evaluate the services rendered and suggest recommendations for improvements.
(PAHO)

**VENEZUELA-27—Promotion of Community Water
Supplies**

A consultant provided advisory services to the National Institute of Public Works (INOS) on certain aspects of a long-term plan for the expansion of existing urban water supply systems, including the financial problems and the rate structure of some of the systems operated by INOS. Specific advice was also given on technical problems regarding the Caracas water supply. A consultant was also provided to explore with INOS its public information and education programs on water supply. At the close of the year, preparations were completed to provide extensive assistance in the coming year for a general study of the national water program.

This project included the following award:

Environmental Sanitation, with emphasis on Sanitary Engineering—one fellowship of three and a half months' duration for study in the United States.
(PAHO/CWSF)

VENEZUELA-28—Industrial Hygiene

A consultant in industrial hygiene was provided for two months to the Department of Occupational Health of the Ministry of Health and Welfare. The consultant made a study of current problems and of the resources available and submitted his recommendations.

(*Government of Venezuela*)

VENEZUELA-31—Stream Pollution

A consultant was provided for two weeks to review and discuss the Government's problems and approaches to stream pollution control.

(*PAHO*)

WEST INDIES FEDERATION-12 (Jamaica-12)—

Nursing Education

The adviser in nursing education took up her duties in Kingston, Jamaica, in September. During the period of orientation and study of nursing education needs, she collaborated in a program for the training of nursing aides, which is one of the pressing needs of the local nursing services.

(*PAHO*)

WINDWARD ISLANDS-2—Malaria Eradication

Dominica. The second and third cycles of DDT were completed in the Portsmouth District. The percentage of house owners who refused spraying or were absent was 16 per cent. Financial difficulties delayed the start of the third cycle for two months. Collection of slides was poor because of resignation of evaluators and little interest in medical clinics; and examinations were delayed six months owing to lack of a microscopist. Five cases of *falciparum* malaria were discovered in 1960 in the two areas formerly highly malarious. Deficiencies have been overcome, and both laboratory and evaluation work are improving. A law was passed by the Government making house sprayings obligatory.

Grenada. The sixth and last cycle of spraying was concluded in January 1960, and surveillance was begun. No positive slides have been discovered since March 1959. 7,270 slides were taken during the first 10 months of 1960, more than half by passive evaluation. Evaluators visit clinics at 29 medical stations, where they obtain slides from fever cases most efficiently. They also make house-to-house surveys for fever cases. Up to 31 October, samples were taken from 15 per cent of the 30,200 persons in the previously sprayed areas.

St. Lucia. Surveillance began in September 1959. Slides from more than 10 per cent of the 86,194 persons on the island were taken in the first 10 months; all were negative. Both active and passive case-finding have been established throughout the formerly malarious area.

66 notification posts had been established up to October 1960. The laboratory examined slides from Grenada and Dominica as well. Persons returning from Trinidad are checked on arrival in St. Lucia.

This project included the following awards:

Malaria Eradication—one 12-week fellowship to a candidate from Dominica for study in Jamaica; and one 12-week fellowship to a candidate from Grenada for study in Surinam.

(*PAHO/SMF*)

(*UNICEF*)

AMRO-7—*A. aegypti* Eradication (Central America and Panama)

The final verification was made in El Salvador and Costa Rica. *A. aegypti* has been eradicated from Central America and Panama, and only in the case of Costa Rica is the official declaration lacking.

(*WHO*)

AMRO-8—*A. aegypti* Eradication (Caribbean)

Advisory and supervisory activities were carried out for the British, Dutch, and French areas.

(*WHO/TA*)

AMRO-9.3—Seminar on Mental Health (Alcoholism)

A short-term consultant visited several of the countries to discuss the problem of alcoholism with national authorities and to assist with the selection of participants and documents for the Seminar, which was held in Viña del Mar, Chile, from 21-26 November 1960. Fifteen countries were represented among the 40 participants. The Seminar recommended that PASB be asked to establish a research program on alcoholism and problems relating to alcohol, with its headquarters in Chile. The Government of Chile undertook to publish the proceedings and final report of the Seminar, sufficient copies of which will be purchased by PAHO for distribution to interested organizations and groups in Latin America.

(*WHO*)

AMRO-10—Program for Biostatistics Education

The first of the two six-month periods into which the eighth course on vital and health statistics at the School of Public Health, University of Chile, is divided began in March and ended in September. Fellowships for this course were awarded to candidates from the following countries: Argentina, 8; Bolivia, 2; Costa Rica, 1; Honduras, 1; Nicaragua, 1; Panama, 1; Paraguay, 1; and Peru, 1. In addition, one fellowship of six months and 24 days was granted to a trainee from Costa Rica for study in Chile in vital statistics and two fellowships of 15 months to trainees from Brazil, for study also in Chile in public

health administration, with special emphasis on statistics. (WHO/TA)

AMRO-16—Assistance to Schools of Public Health

Teaching supplies were made available to the two schools of public health in Argentina. (WHO)

AMRO-18—Medical Education

One consultant reviewed the teaching program of the Medical School of the University of Guayaquil, Ecuador, and made recommendations for strengthening it; another reviewed the teaching programs and lectured on medical statistics in medical schools in Argentina, Bolivia, Brazil, Chile, Ecuador, and Peru. Advice was given to the School of Medical Sciences of the National University of Nicaragua on the organization of the Department of Preventive Medicine. To obtain the necessary data to complete the survey of the teaching of basic sciences in Latin America, a consultant visited several medical schools in Brazil.

This project also included the following awards:

Medical Education—one five-week fellowship to a candidate from Brazil for study in Chile and Colombia; one two-week fellowship to a candidate from Cuba for study in Mexico; one three-month fellowship to a candidate from Chile for study in the United States.

Medical Education with emphasis on Parasitology—one fellowship of three and a half months' duration to a candidate from Chile for study in Brazil, Puerto Rico, and the United States.

Medical Education with emphasis on Preventive Medicine—one nine-week fellowship to a candidate from Venezuela for study in Brazil, Colombia, El Salvador, and Puerto Rico.

Organization of Medical Education—one fellowship of four and a half months' duration to a candidate from Chile for study in Europe and the United States.

(WHO)

AMRO-28—Advanced Nursing Education

This project consisted of the following awards:

Organization of Medical Education—one 12-month fellowship to a candidate from Chile for study in the United States.

Nursing Education—one 12-month fellowship to a candidate from Argentina for study in the United States; one 11-month fellowship to a candidate from Nicaragua for study in Chile; one 11-month fellowship to a candidate from Venezuela for study in Chile; one 12-month fellowship to a candidate from Uruguay for study in Chile.

(WHO)

AMRO-35—Fellowships (Unspecified)

This project consisted of the following awards:

Zone I

Nursing Education—two two-month fellowships to candidates from Venezuela for study in Peru, Chile, Argentina, and Brazil.

Zoonoses Control—one two-month fellowship to a candidate from Venezuela for study in Argentina.

Medical Education, with emphasis on Virology—one six-month fellowship to a candidate from Jamaica for study in the United States.

Food Control—one fellowship of 16 and a half months' duration to a candidate from Venezuela for study in the United States.

Zone II

Health Education—one 12-month fellowship to a candidate from Mexico for study in the United States.

Public Health Administration—one fellowship of 10 and a half months' duration to a candidate from Cuba for study in Mexico.

Zone III

Zoonoses Control Training—one fellowship of five and a half weeks' duration to a candidate from Guatemala for study in Argentina.

Public Health Nursing—one 11-month fellowship to a candidate from Guatemala for study in Chile.

Zone IV

Zoonoses—two fellowships of five and a half weeks' duration to a candidate from Peru and a candidate from Colombia for study in Argentina; two five-week fellowships to candidates from Peru for study in Argentina.

Public Health Administration—one fellowship of 11 and a half months' duration to a candidate from Bolivia for study in Brazil.

Public Health Nursing—one 11-month fellowship to a candidate from Peru for study in Chile.

Zone V

Public Health Nursing—one one-month fellowship to a candidate from Brazil for study in Mexico and Guatemala.

Laboratory Services—one seven-week fellowship to a candidate from Brazil for study in Peru and Colombia.

Public Health Administration—one 11-week fellowship to a candidate from Brazil for study in Colombia, Guatemala, the United States, Puerto Rico, and Mexico.

Nutrition—one five-month fellowship to a candidate from Brazil for study in Guatemala.

Zoonoses—two fellowships of three and a half weeks' duration to candidates from Brazil for study in Argentina.

Zone VI

Medical Education—one one-month fellowship to a candidate from Argentina for study in Chile.

Zoonoses—one one-week fellowship to a candidate from Argentina for study in Argentina and Chile.

Public Health Nursing—one fellowship of 11 and a half months' duration to a candidate from Uruguay for study in Brazil.

(PAHO)

AMRO-45—Laboratory Services

Bacterial, fungal, viral and protozoan strains; standards for the production and control of biologicals; and laboratory animals for starting colonies were supplied to many laboratories. A consultant visited the public health laboratories in Curaçao and in Georgetown and made recommendations for their improvement and expansion. Technical assistance on administration, installation, selection of equipment, and planning of buildings has also been given to many national and local laboratories. Information on some specific aspects, such as techniques for some diagnostic tests, for the preparation of antigens, or for the manufacture of vaccines and toxoids, has been provided.

This project also included the following award:

Public Health Laboratory—one 12-month fellowship to a trainee from Panama for study in the United States.

(WHO)

AMRO-46.6—Seminar on Nursing Education

Eighteen nurses representing 12 countries in Latin America met with PASB/WHO Nursing Advisers in Paracas, Peru, from 3 to 19 November to prepare a *Guide for Schools of Nursing in Latin America* for use in the field of education and by health authorities. The countries represented were Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela. Discussions centered around objectives, curriculum, faculty, student body, physical facilities, organization, and financing of a school of nursing. A draft of the *Guide* was prepared and is being reviewed. Publication is planned for June 1961.

(WHO)

AMRO-47—Yaws Eradication and Syphilis Control (Caribbean)

In British Guiana a survey was made to determine the extent of the yaws problem, and an eradication program was prepared.

In Jamaica, the public health authorities undertook a survey to gain a better picture of the yaws problem before initiating an eradication program.

In Saint Lucia, where new foci of yaws have appeared, a new plan for a yaws campaign is being drawn up.

In Trinidad, the last stage of the yaws eradication program was completed in July 1960.

A program for the control of syphilis and gonorrhoea in certain areas of Jamaica was prepared by the public health authorities of that island.

The laboratories in the Caribbean area have improved their techniques for the serological diagnosis of syphilis.

(PAHO, OAS/PTC)

(UNICEF)

AMRO-54*—Institute of Nutrition of Central America and Panama

Research and applied nutrition programs continued; the INCAP School for Nutritionists and Dietitians began operating in 1960; and special courses were held for public health workers. The School has been of considerable help not only to the member countries of the Institute but also to other countries in the Region. Studies were conducted on the economic and commercial aspects of INCAPARINA in order to determine the best ways and means of introducing it to the public. Several countries in the Region have shown a great interest in mixtures similar to INCAPARINA, and PASB has been giving assistance when requested.

(PAHO)

AMRO-57—Yellow Fever Studies

For details of the work done under this project in 1960, see Colombia-52 and Brazil-51.

(PAHO)

(Gorgas Memorial Laboratory)

AMRO-60—Smallpox Eradication

Technical assistance was given to the countries for the production of dried smallpox vaccine. A consultant visited the manufacturing laboratory in Ecuador. Potency and safety tests of eight different batches of vaccine from several countries were carried out in a WHO reference laboratory.

(PAHO)

* Grants received in 1960 from:

The Nutrition Foundation, Inc.

The Research Corporation (Williams-Waterman Fund)

Miller's National Federation

W. K. Kellogg Foundation

E. I. du Pont de Nemours and Co.

United Fruit Company

U.S. Public Health Service, National Institutes of Health

National Research Council

National Livestock and Meat Board (USA)

Interdepartmental Committee on Nutrition for National Defense (USA)

The Lilly Research Laboratories

Westreco, Inc. (Unilac, Inc.)

Parke, Davis and Company

Centro Experimental Agrícola (Guatemala)

The Quaker Oats Company

The Rockefeller Foundation

AMRO-61^a—Rabies Control

Technical advice on rabies control programs was provided by the Zone Veterinary Public Health Advisers. In response to specific requests, production and control strains of rabies virus were provided, and reference testing of nationally produced rabies vaccines was carried out. Technical advice and vaccines and other supplies were provided in connection with a severe outbreak of rabies which took place in an area involving the northern part of Lower California, Mexico, and the southern part of California, U.S.A.

(WHO)

(NIH)

AMRO-67—Teaching of Public Health in Schools of Veterinary Medicine

Although arrangements were made to send a short-term consultant to the School of Veterinary Medicine in Peru to reorganize the curriculum, changes in the School's administration necessitated postponement until 1961. Numerous teaching aids for the course in public health were provided to veterinary schools in the Region. Two documents on veterinary education in the Americas were prepared for the FAO International Meeting on Veterinary Education held in London, England.

(WHO)

AMRO-72—Dental Health

Advisory services were rendered to the Governments of Haiti and El Salvador in connection with the organization of their dental health services. Five long-term fellowships and five short-term fellowships for dental public health training at the University of São Paulo were provided for dentists of the following countries: Argentina, Chile, Colombia, Costa Rica, Mexico, Uruguay, and Venezuela.

This project also included the following awards:

Public Health Dentistry—two 11-week fellowships, one to a candidate from Chile and one from Mexico, for study in Brazil; five 10-month fellowships to one candidate each from Ecuador, Peru, Bolivia, Argentina, and El Salvador for study in Brazil; one 15-month fellowship to a candidate from Mexico for study in Brazil; three fellowships of 11 and a half months' duration, one to a candidate from Paraguay and two to candidates from Cuba, for study in Brazil.

(PAHO)

(KF)

AMRO-74—Plague Investigation

A consultant spent six weeks in Peru making an epidemiological investigation of an outbreak of plague on the Peru-Ecuador border.

(PAHO)

^a Balance of grant received in 1959 from: Unión Ganadera Regional de Chihuahua (Mexico)

AMRO-76—Vaccine Testing

Vaccines produced in several national laboratories have been tested. A reference laboratory receiving support from the Organization has carried out potency, safety, and sterility tests on 35 samples of vaccines and toxoids submitted by five countries of the Region.

(WHO)

AMRO-77—Pan American Foot-and-Mouth Disease Center

In its research activities the Center devoted special attention to the development of a modified live-virus vaccine. However, in this work and other studies the Center has been handicapped by the lack of isolation stables and other laboratory facilities; the constructions that were begun by the Government of Brazil in 1958 are still not completed. The Center has established collaborative research studies with foot-and-mouth disease laboratories in Venezuela and in Brazil. Studies have been conducted to improve methods for the production of killed-virus vaccines, and training in this field has been provided. Work on the development of a laboratory test for checking the safety and potency of vaccines was continued. During the year, the staff of the Center produced 10 technical publications.

The Center conducted two training courses during the year; one for 11 trainees from areas of the Caribbean that are free of the disease, and a second for 21 trainees from South America. In addition, seven long-term trainees from Argentina, Brazil, Colombia, and Mexico, were studying at the center.

The Center received approximately 500 samples for virus examinations and 3,980 serum samples for study. Virus strains and antisera were distributed to countries upon request. The Center collaborated with the World Reference Laboratory for Foot-and-Mouth Disease at Pirbright, England, in the study and identification of virus subtypes from South America. Consultative field visits were made to all the countries of the Region.

The Center was closely associated with some major developments in the foot-and-mouth disease control programs of South America. Officials of Colombia, Ecuador, Panama, and Venezuela met to plan a coordinated program for the area, for which the Center will provide a full-time consultant. Peru planned a program for improved vaccine production, and arrangements were made for the Center to provide a consultant to Bolivia, Ecuador, and Peru. Argentina began a 500 million peso foot-and-mouth disease control campaign to which the Center furnished a consultant. In Chile and Uruguay special commissions have been established to study how similar action can be taken in those countries.

This project also included the following awards:

Virology—one two-month fellowship to a candidate from Argentina for study in Brazil.

Laboratory Services—one fellowship of three months and two weeks' duration to a candidate from Brazil for study in that country.

Veterinary Public Health—two three-month fellowships to candidates from Colombia for study in Brazil; another three-month fellowship to a candidate from Argentina also for study in Brazil; and one six-week fellowship to a candidate from Panama for study in Venezuela and Colombia.

Thirteenth Foot-and-Mouth Disease Course—11 two-week fellowships to two candidates each from Jamaica and Puerto Rico, and one each to candidates from Bahamas, British Guiana, Curaçao, French Guiana, Martinique, Surinam, and Trinidad.

Fourteenth Foot-and-Mouth Disease Course—six four-week fellowships to candidates from Argentina, Chile, Peru, and Venezuela; ten one-week fellowships to candidates from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela. (OAS/PTC)

AMRO-81^a—Pan American Zoonoses Center (Argentina)

The Center continued to expand its activities in research, education, and technical services. Research studies were completed, or continued, in anthrax, hydatidosis, brucellosis, trichinosis, leptospirosis, and salmonellosis. Assistance was provided to national institutions in Argentina, Chile, Peru, and Uruguay in connection with serological surveys of Q fever. The Center is developing a colony of laboratory animals using only local equipment and materials; commercial production of equipment and supplies for laboratory animals does not exist in Latin America. A general course on zoonoses control was attended by 15 students from eight countries, and individual training was given to five special students. Three trainees on long-term fellowships continued their studies throughout the year. Numerous technical queries were answered. Field demonstrations were conducted in rabies, anthrax, brucellosis, tuberculosis, and leptospirosis. Standard and special strains of various biologics and samples of antigens were provided to countries upon request. Vaccines and

^a Grants received in 1960 from:
Government of Argentina
Cyanamid International
E. R. Squibb and Sons
The Rockefeller Foundation
Industrias Kaiser Argentina, S.A.
Comisión Nacional de Administración del Fondo de Apoyo al Desarrollo Económico (Argentina)
Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina)

antigens were received at the Center for testing. In the 11-month period to 30 November, 8,522 specimens were sent by the countries to the Center for examination.

(PAHO, WHO/TA, OAS/PTC) (FAO)

AMRO-85—Latin American Center for Classification of Diseases

The first course in English on the classification of causes of death, held in Jamaica in August, was attended by 19 statisticians from British and Dutch territories. A second course, given in Argentina in 1960, was attended by 25 students from Argentina and by 3 from Paraguay. In 12 courses, 241 persons have received training in classification of causes of death.

Another important feature of the work was the adaptation and translation into Spanish of the *International Classification of Diseases Adapted for Indexing of Hospital Records and Operation Classification*.

The Minister of Health and Welfare of Venezuela has made the post of Director of the Latin American Center a full-time appointment and the Director has served in that capacity since 16 September 1960.

(WHO)

AMRO-86—Health Statistics (Zone III)

Statistical consultant services continued to be rendered to the health services in countries of Zone III. Assistance was given to Costa Rica in reorganizing the statistical services of the various offices of the Department of Biostatistics. A procedure for the tabulation of the statistical data of health units was developed. In Honduras and Nicaragua work continued on the organization of statistical reporting systems. Assistance was also given to Panama and El Salvador.

(WHO)

AMRO-88—*A. aegypti* Eradication

Technical advice was given to Governments and to a number of eradication projects.

(PAHO)

AMRO-90—Malaria Technical Advisory Services (Interzone)

Technical advisory services were rendered by an entomologist, a medical parasitologist, and an adviser on motor vehicle management and maintenance to individual country programs throughout the Hemisphere. One medical officer assisted the Ecuador program; another the Haiti project; and a sanitary engineer, Colombia-5.

(PAHO/SMF)

AMRO-92—Poliomyelitis

The Regional Adviser coordinated the Organization's activities in the field of poliomyelitis, particularly with reference to live virus vaccine programs and the Second International Conference which dealt with this subject. In November the Adviser visited São Paulo, Brazil, during an epidemic of poliomyelitis due to Type 1 poliovirus and collaborated with the state health authorities in setting up a demonstration vaccination program with oral vaccine to be initiated in the city of São Paulo, in May, 1961. The purpose of the program is to acquaint the health authorities with this new approach to prevent future epidemics of poliomyelitis.

This project included the following award:

Laboratory Services—one six-week fellowship to a candidate from Ecuador for study in Colombia.

(PAHO)

(EKF)

AMRO-93—Health Education (Zone II)

The consultant provided advisory services to all countries of the Zone during 1960, with major emphasis on health education training. In Mexico, the health educator assisted with courses offered by the School of Public Health and short courses conducted as a part of the programs for control of leprosy and tuberculosis. He also participated in studies of health education services in several of the states which will form part of the nine-state program of integrated health services. In Cuba, assistance was concentrated on planning the work of a health education consultant assigned by the Organization and in preparing health education plans for specific programs such as malaria eradication, environmental sanitation, etc. In the Dominican Republic and Haiti direct services were rendered in planning and carrying out the health education phases of training programs for nurses and for auxiliary sanitation personnel. In the absence of trained health education staff at the national level in several countries of the Zone, the consultant was frequently called upon to provide advisory services to national and local health staff as well as to PASB/WHO personnel working with various projects in these countries.

(WHO)

AMRO-94—Diarrheal Diseases in Childhood

Studies on the interrelationship of diarrheal diseases and nutrition, which are being carried out at INCAP, were continued by a bacteriologist and a statistician.

(PAHO)

AMRO-95—Environmental Sanitation (Caribbean)

The sanitary engineer continued to assist in water supply, sewage disposal, and rural sanitation in the islands served by this project. Two sanitarians, one stationed in

Trinidad and the other in Barbados, worked on the rural sanitation projects assisted by UNICEF. Advice was given to Grenada on water supply and sewage disposal problems. The rural latrine programs in St. Lucia, St. Vincent, St. Kitts, and Trinidad proceeded according to schedule; in Barbados, difficulties still limit the pace of the program. Preparation of a sanitation program for British Guiana was begun. A survey was made and a report prepared on sanitation in the Netherlands Antilles.

(PAHO, WHO/TA)

(UNICEF)

AMRO-100—Training Course on Nursing Supervision and Administration

This course was given in Buenos Aires from 2 May to 28 October and was attended by 25 nurses. Of these, 19 received awards as follows: Argentina, 9; Bolivia, 3; Paraguay, 4; and Uruguay, 3. One important result of the project was the training by the consultant of six Argentine nurses to act as instructors in the course.

(WHO)

AMRO-108—Sanitation of Travel Centers

The *Manual of Recommended Sanitation Standards for Tourist Facilities* was completed and delivered to the Inter-American Tourist Service of the Pan American Union. The Manual has been printed by the PAU in Spanish and in English. PAHO has distributed the Manual to all ministries of health in Middle and South America and offered assistance to Governments through Zone and field staff in any programs or activities related to the improvement of the sanitation of tourist establishments.

(PAHO)

AMRO-110—Tuberculosis Prevention

Advice on methods of tuberculosis control was given to several countries. Preliminary plans were made for prevalence surveys in Argentina, Mexico, and Peru.

(WHO)

AMRO-112—Community Development Training Center

Assistance was given with the fundamental education course held during 1960. The consultant also assisted in the planning of the course to be held in 1961, when the Latin American Regional Fundamental Education Training Center (CREFAL) is to be made into a Community Development Training Center. The consultant devoted considerable time during 1960 to reviewing the human and material resources available in the CREFAL area with a view to planning a health training program adapted to the situation in the countries of the students. Agreements were developed with national, state, and local health authorities of Mexico for their collaboration with the

training program. The consultant also worked with the national and international staff of CREFAL in the assessment of training methods, development of criteria for the selection of trainees, and planning for more effective recruitment. A system for exchange of information between the Center and health authorities of the countries served through the Organization was also developed. It is anticipated that this system will permit the development of a training course adapted to the health needs of each country.

(WHO) (UNESCO, ILO, FAO, UN, OAS)

AMRO-114—Training Center for Malaria Eradication (Mexico)

Through a grant to the National Malaria Eradication Commission of Mexico three courses were held: two for physicians and engineers and one for sanitarians. Eighty-six participants were trained during the year. The Mexico-53 project is being used for field training and experience.

(PAHO/SMF)

AMRO-117—Malaria Technical Advisory Services (Zone I)

A team of full-time consultants assigned to the Zone Office provided technical advisory services to the countries and other areas in Zone I.

(PAHO/SMF)

AMRO-118—Malaria Technical Advisory Services (Zone III)

A team of full-time consultants assigned to the Zone Office provided technical advisory services to British Honduras, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

(PAHO/SMF)

AMRO-119—Malaria Technical Advisory Services (Zone IV)

A team of full-time consultants assigned to the Zone Office provided technical advisory services to Bolivia, Colombia, Ecuador, and Peru.

(PAHO/SMF)

AMRO-121—Malaria Eradication Evaluation Teams

Certain changes in methodology were found to be necessary in the light of what was practicable in a large country with complex problems. The experience gained will be useful in all eradication programs and in future certification work. The resignation of the leader of the team for the evaluation and certification of areas of malaria eradi-

cation led to the disbandment of the team before the Venezuela project was completed.

(PAHO/SMF)

AMRO-122—Research and Development of Insecticide Application Equipment

Field trials were carried out in El Salvador on sprayers of a new design.

(PAHO/SMF)

AMRO-134—Training Center for Malaria Eradication (Kingston, Jamaica)

At this Center, which is jointly operated by the Government of Jamaica, ICA, and PASB, senior officials, many of them destined for WHO posts in other Regions of the world, were trained during the year. The course covered statistics, entomology, parasitology, spraying operations, epidemiology, and administration. The Jamaican malaria eradication program is used for field training and experience.

(PAHO/SMF)

(ICA)

AMRO-135—Malaria Eradication Trainees

Owing to the shortage of experienced workers in malaria eradication in the Americas, the Organization has had to train its staff members in malaria eradication techniques in order to carry out its function of providing technical advisory services in this field. During the year, one physician, one statistician, and three sanitarians were trained under this project.

(PAHO/SMF)

AMRO-137—Training Center for Malaria Eradication (São Paulo)

A grant was provided to the Faculty of Hygiene and Public Health of the University of São Paulo for the training of personnel in medical entomology. In addition to the local personnel, eight entomologists from the malaria eradication program of Bolivia, Colombia, Mexico, and Peru were trained during the year.

(PAHO/SMF)

AMRO-139—Malaria Technical Advisory Services (Zones V and VI)

Technical advisory services were provided through the Zone Offices to Argentina, Brazil, and Paraguay.

(PAHO/SMF)

AMRO-141—Health Education, Zone III

This project was initiated in May. A consultant worked with the health education staff of the Ministry of Public Health of Costa Rica in reviewing health education needs

and resources both within and outside the Ministry. Initially, a study was made of the health education aspects of various public health services, including maternal and child health, nursing services, environmental sanitation, nutrition, public health administration, hospital care, communicable disease control, and chronic diseases. This was followed by a study of the health education activities carried on in agricultural extension, urban and rural housing, social security programs, voluntary health associations, schools of nursing, and public schools.

In the light of the result of these studies, long-range plans were prepared by the Ministry for strengthening and extending health education in Costa Rica, including short-courses and in-service training for personnel of the health services. Plans were also prepared for the training of the staff of other agencies in collaboration with the training officers of those agencies. Plans include the training of a sufficient number of health education staff for future health programs. Particular emphasis will be given to health education training of school teachers and the incorporation of health education training into student-teacher training. (WHO)

AMRO-142—Health Aspects of Radiation

This project consisted of the following award:

Radioisotopes—one fellowship of three months and one week's duration to a candidate from Venezuela for study in Puerto Rico.

(PAHO)

AMRO-143—Health Statistics (Zone IV)

The statistical consultant appointed to Zone IV in July gave assistance to the Division of Biostatistics which, organized under SCISP, operates with well-trained staff at a high level in the Ministry of Public Health and Welfare of Peru. In Colombia he gave advice on a new section of statistics in the Office of Planning, Coordination, and Evaluation of the Ministry of Public Health; on courses of biostatistics at the School of Public Health in Bogotá; and on the teaching of medical statistics in the seven medical schools of the country.

(WHO)

AMRO-148—Laboratory for the Production of Biologicals (Zone III)

A study of present needs and resources in each of the countries of the Zone was made with regard to the production of biologicals for both human and veterinary use.

This project included the following awards:

Control of Biologicals—one 12-month fellowship to a candidate from Nicaragua for study in Argentina, Chile, Paraguay, and Peru; and one fellowship of seven weeks' duration to a candidate from Guatemala for study in Chile.

(PAHO)

AMRO-149—Leprosy Control

A study of the present status of leprosy in Bolivia, Ecuador, and Peru was made by a consultant, who at the same time made recommendations on how best to proceed in developing leprosy control programs in those three countries.

(WHO)

AMRO-150—Food and Drug Services

A plan of operations for a country-by-country survey in this field was prepared and extensive efforts have been made to recruit two highly qualified persons for this work. Unfortunately the world-wide shortage of personnel in this field has made recruitment very difficult.

(PAHO)

AMRO-151—Seminar on Teaching of Sanitary Engineering in Schools of Engineering

A short-term consultant visited engineering schools in selected cities of Latin America preparatory to visits to all such schools by the zone engineers. Data on facilities, curricula, staff, and student enrollment are being collected and will serve as the basis for a seminar on the teaching of sanitary engineering in undergraduate schools of engineering to be held in July 1961.

(WHO)

AMRO-155—Schistosomiasis Control

A special consultant was provided to Venezuela for three months to advise on the national schistosomiasis program.

(PAHO)

AMRO-156—Training Program in Hospital Statistics

Progress was made in the implementation of this project. Initial steps to train personnel working on hospital records will be taken in Argentina because of its great interest in hospital administration and in hospital records and statistics; a medical record librarian will advise on the development of demonstration centers. The report of the Study Group of the Graduate School of Public Health of the University of Pittsburgh, *The Functions and Education of Medical Record Personnel*, was distributed to persons concerned with developments in this field.

(PAHO)

AMRO-157—Health Statistics (Zone I)

The annual conference of the directors of medical services of the English-speaking territories afforded the consultant an opportunity to demonstrate the value of good medical records and statistics, and to discuss existing shortcomings as well as possible improvements. The con-

ference was followed by visits to certain territories, and recommendations were made to the respective Governments concerning vital and hospital statistics. Studies on possible use of health center and clinic records to obtain statistics on general morbidity and patterns of health care were initiated. A course on classification organized jointly by the Organization and the Latin American Center for Classification of Diseases was attended by students from 14 territories. Statistical assistance was given to the malaria eradication program in Jamaica, as well as to other projects, such as a study into the social and medical causes of infant mortality.

(PAHO)

AMRO-159—Health Statistics (Zone VI)

There has been a great demand for technical assistance by the countries of the Zone since a statistical consultant was appointed to this project in 1960. A very wide range of activities had to be covered in Argentina and in Paraguay where the consultant's services were most needed. In Argentina steps were taken to evaluate the statistical systems in operation. The statistical department of the Ministry of Welfare and Public Health was strengthened, not only at the national level but also in some provinces, especially in the Province of Buenos Aires where an integrated program of vital statistics was begun and an agreement was signed for the development of a demonstration area for the country. Medical certification for vital statistics of death, the use of international standards, definitions, and improved methods and procedures were promoted. Advice was given and recommendations made on the adoption of adequate systems of morbidity statistics and notifiable diseases. Two courses on statistical methods in medical research, attended by 70 physicians and bacteriologists, were given at the National Institute of Microbiology and the Faculty of Medicine of Buenos Aires. A course on the classification of diseases was given by the Latin American Center for Classification of Diseases and attended by 29 students, 26 from Argentina and 3 from Paraguay. Assistance on the use of national census results in planning and programing for health purposes was given to the health authorities. Owing to the urgent need for trained statistical personnel, plans were under way to organize courses at the auxiliary and intermediate levels in 1961 in Argentina. The Organization of demonstration areas and the training of personnel in hospital records and statistics will also start in 1961.

(PAHO)

AMRO-163—Epidemiology (Zone VI)

The functions of the consultant in epidemiology during 1960 were to: (1) promote the development of eradication and control programs against communicable diseases; (2) advise on new methods and techniques of control; (3)

coordinate the programs of eradication and control of quarantinable diseases in the countries of the Zone; (4) promote better reporting of communicable diseases; and (5) advise on all problems related to the application of the International Sanitary Regulations.

(PAHO)

AMRO-165—Nutrition Advisory Services (Interzone)

As a consequence of the increased interest of the Governments in applied nutrition programs, PASB assistance in this field was increased. The posts of Regional Nutrition Adviser and Director of INCAP, which were previously both held by the same person, have been made into separate appointments. In addition, two Nutrition Advisers were appointed to serve Zones I, II, and III. The Adviser on Nutrition Education stationed in INCAP was responsible for the organization of the School for Nutritionists and Dietitians mentioned in AMRO-54.

(PAHO)

AMRO-178—Veterinary Public Health (Zone II)

The Veterinary Public Health Adviser provided consultation and technical assistance to the national health services in the Zone, primarily in the control of zoonoses and in food hygiene. Advice was also given on laboratory services and public health administration. While the work was conducted in the main with public health services, assistance was provided, when appropriate, to agricultural services and educational institutions.

(PAHO)

AMRO-179—Veterinary Public Health (Zone IV)

The Veterinary Public Health Adviser provided consultation and technical assistance to the national health services in the Zone, in the control of the zoonoses and in food hygiene. Advice was also given on laboratory services and public health administration. While the work was conducted in the main with public health services, assistance was provided, when appropriate, to agricultural services and educational institutions.

(PAHO)

AMRO-181—Live Poliovirus Vaccine Studies

The nation-wide vaccination program in Costa Rica was completed. By 31 October, 305,959 children under 11 years of age had been fed Lederle's live poliovirus vaccine: 120,327 received the three types of virus as monovalent vaccine and 185,632 as trivalent. This represents approximately 80 per cent coverage of the population in the age group at 31 December 1959. The attack rate of the disease for the period March 1959 to October 1960 was 6.5 per 100,000 population in the vaccinated group and 62.7 per 100,000 in the nonvaccinated group. In Colombia, 225,771

children under five years of age—approximately 90 per cent in this age group—received a single dose of Lederle's trivalent vaccine in Bogotá, Envigado, Cúcuta, Sogamoso, Zipaquirá, and Barranquilla. No untoward reactions to the vaccine were noted during the three months following the completion of the program.

(PAHO) (American Cyanamid Company)

AMRO-187—Promotion of Community Water Supplies

A short term consultant visited Mexico, Guatemala, Colombia, Peru, and Chile to discuss the water rate mechanisms now employed and to advise on specific problems of water system design presented by local engineers.

(PAHO)

AMRO-188—Veterinary Public Health (Zone III)

The Veterinary Public Health Adviser gave advice and technical assistance to the national health services in the Zone in the fields of control of zoonoses and food hygiene, and also laboratory services and public health administration. While the work was conducted in the main with public health services, assistance was provided, when appropriate, to the agricultural services and to educational institutions.

(WHO)

AMRO-189—Veterinary Public Health (Zone V)

Advice and technical assistance in connection with the control of zoonoses, food hygiene, laboratory services, and public health administration were provided to the national health services. Assistance was provided, when appropriate, to agricultural services and to educational institutions.

(WHO)

AMRO-191—Public Health Fellowships

This project consisted of the following awards:

Maternal and Child Health—three seven-week fellowships to candidates from Argentina, Chile, and Mexico for study in the Union of Soviet Socialist Republics.

(WHO)

AMRO-196—Insecticide Testing Teams

Close cooperation was maintained with UNICEF, which continued to supply insecticides and equipment to most of the malaria eradication programs, and with ICA, which collaborated actively in seven country programs and the Malaria Eradication Training Center, at Kingston, Jamaica. The Rockefeller Foundation provided a member of its staff to direct research and field studies of technical problems in epidemiology and entomology. The Bureau collaborated with WHO in establishing a world-wide co-

ordinated plan of attack on the insecticide resistance problem, together with the USPHS and the U.S. Department of Agriculture. The Insecticide Testing Teams will select two areas for the last step (field testing) in this program. The USPHS provided consultations on insecticides and chemotherapy, and lecturers for the Malaria Eradication Training Center, at Kingston.

(PAHO/SMF)

AMRO-197—Research on the Resistance of Anophelines to Insecticides

A grant was awarded to the School of Hygiene and Public Health of Johns Hopkins University for the maintenance of colonies of susceptible and resistant anophelines. Basic studies on the genetics of these strains are being made. The colonies are available for use by workers in other scientific centers.

(PAHO/SMF)

(Johns Hopkins University)

AMRO-198—Administrative Methods and Practices in Public Health

The program of collaboration with the Member Governments of the Pan American Health Organization for the betterment of the administration of their health services continued to be a matter of considerable importance in the activities of the Organization. A senior member of the staff of the Division of Administration consulted with national health officials in Central and South America, primarily in Zones III and VI, to determine plans for meeting their needs in the field of administration.

A Seminar on the Management and Organization of Public Health Services in Central America and Panama was held in San José, Costa Rica, from 14–25 November 1960, in cooperation with the UN Office of Public Administration and the *Escuela Superior de Administración Pública de América Central*. The meeting was attended by the directors general and chiefs of administration of the public health services of the countries in Zone III, the Deputy Minister of Labor, Social Welfare and Health of Panama, and technical specialists from the cooperating international organizations.

(PAHO)

(UN)

AMRO-200.2—Second International Conference on Live Poliovirus Vaccines

Under the sponsorship of PAHO/WHO, and again with the financial assistance of the Sister Elizabeth Kenny Foundation, the Second International Conference on Live Poliovirus Vaccines was held in Washington, D.C. from 6 to 10 June, to evaluate new data accumulated as a result of intensive studies of the properties of attenuated live polioviruses and of extensive field investigations of their use as immunizing agents. Forty-five papers were pre-

sented and discussed in detail by 85 scientists from 20 countries. Reports on field trials involving many millions of people and carried out in 13 countries were made by 24 groups of investigators. The complete proceedings of this Conference were published by the Organization within eight weeks of the closure of the meeting (PAHO Scientific Publication No. 50).

(PAHO)

(EKF)

AMRO-202—Leprosy Control (Zone III)

A full-time Zone consultant is collaborating with the Governments of Central America and Panama in the preparation of control plans. Initial steps to organize leprosy campaigns were taken in Guatemala, Nicaragua, and Panama, and leprosy services were established for the first time in El Salvador and Honduras. In Costa Rica, where a good leprosy service already existed, case-finding, early treatment and the surveillance of contacts are being improved. A program for the control of leprosy in Panama was prepared.

(PAHO)

AMRO-204—Environmental Sanitation Training (Zone I)

This project consisted of the following awards:

Sanitary Inspectors—one six-month fellowship to a candidate from Venezuela for study in Chile.

Environmental Sanitation—two fellowships of seven and a half weeks' duration to candidates from Grenada for study in St. Lucia, Barbados, and Puerto Rico.

(WHO)

AMRO-205—Environmental Sanitation Training (Zone II)

This project consisted of the following awards:

Environmental Sanitation—eight one-month fellowships to candidates from Mexico for study in the United States; and one three-week fellowship to a candidate from Mexico for study in the United States.

Sanitary Engineering—one fellowship of 11 and a half months' duration to a candidate from Cuba for study in Brazil; one fellowship of 10 and a half months' duration to a candidate from Cuba for study in Mexico.

(WHO)

AMRO-206—Environmental Sanitation Training (Zone III)

This course consisted of the following award:

Sanitary Inspectors—one six-month fellowship to a candidate from Honduras for study in Chile.

(WHO)

AMRO-207—Environmental Sanitation Training (Zone IV)

This project consisted of the following awards:

Environmental Sanitation—four fellowships of 10 and a half months' duration, two to candidates from Bolivia and two to candidates from Colombia, for study in Mexico; one 10-month fellowship to a candidate from Bolivia for study in Chile; and one one-month fellowship to a candidate from Bolivia for study in the United States.

Sanitary Inspectors—five six-month fellowships, four to candidates from Bolivia and one to a candidate from Colombia, for study in Chile; and one fellowship of 11 and a half months' duration to a candidate from Peru for study in Brazil.

Sanitary Engineering—three 11-month fellowships, two to candidates from Colombia and one to a candidate from Bolivia, for study in Brazil; two fellowships of 11 and a half months' duration, one to a candidate from Peru and one to a candidate from Bolivia, for study in Brazil.

(WHO)

AMRO-208—Environmental Sanitation Training (Zone V)

This project consisted of the following award:

Environmental Sanitation—one three-month fellowship to a candidate from Brazil for study in Ghana, Kenya, United Arab Republic (Province of Egypt), Switzerland, Germany, Netherlands, Belgium, and the United Kingdom.

(WHO)

AMRO-209—Environmental Sanitation Training (Zone VI)

This project consisted of the following awards:

Sanitary Inspectors—Four six-month fellowships, three to candidates from Paraguay and one to a candidate from Argentina, for study in Chile.

Sanitary Engineering—one fellowship of five months and one week's duration to a candidate from Paraguay for study in the United States; and one 12-month fellowship to a candidate from Argentina for study in the United States.

Environmental Sanitation—one three-month fellowship to a candidate from Paraguay for study in Chile, Peru, Guatemala, Mexico, Puerto Rico, and Brazil; and two fellowships of 11 and a half months' duration to candidates from Paraguay for study in Brazil.

(WHO)

AMRO-215—Study Group on Chagas' Disease

A Study Group met in Washington, D.C., from 7 to 11 March to consider the various aspects of Chagas' disease, particularly those relating to public health, and to formu-

late recommendations to PAHO/WHO on how a better knowledge of this disease could be gained and control methods improved. The report of the Study Group (*Wld Hlth Org. techn. Rep. Ser.*, 1960, 202) recommended the most suitable surveys to be carried out and how PAHO/WHO could cooperate in them and in the control programs. (WHO)

AMRO-219.1—Training Course on Administration, Management, and Financing of Water Supplies

Thirty-five engineers from PAHO, WHO, and ICA who are to provide advisory services in the administration and financing of water supply systems attended a course (28 March–13 April) at the Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio.

(PAHO/CWSF)

AMRO-219.2—Training Course on Administration, Management, and Financing of Water Supplies

Under joint sponsorship of the Government of Mexico and the Organization, a three-week course on the administration and financing of water supplies was held in Mexico City from 14 November to 2 December. Sixty engineers attended the course, 21 of whom received PAHO awards, as follows:

Colombia	2
Colombia	2 (1 extra week in Mexico)
Colombia	2 (3 weeks in Puerto Rico)
Costa Rica	1
El Salvador	1
Guatemala	4
Haiti	2
Honduras	1
Venezuela	6

Expenses for lecturers and consultants were borne by PAHO.

(PAHO/CWSF)

AMRO-220—Malaria Eradication Epidemiology Teams

From its headquarters in Guatemala City, the first Unit formed began to work in May, and conducted studies of the causes of the persistence of malaria transmission in Costa Rica, Nicaragua, and Guatemala. Slow progress was made in the recruitment of staff for the Unit, which was still incomplete at the end of the year. A new headquarters is being planned for El Salvador in conjunction with AMRO-196.

(PAHO/SMF)

AMRO-221.1—Seminar on Nutrition Education

PASB/WHO participated in a Seminar on Nutrition Education held in June in Quitandinha, Brazil. Sponsored

by FAO in collaboration with the Government of Brazil and several international agencies, the Seminar was attended by representatives of 10 countries of South America. Discussions were held on methods of education in nutrition and also on the content of these programs in the fields of health, education, and agriculture. A seminar on the same lines is planned for 1961 for the countries of Central America, Panama, Mexico, and the Caribbean area.

(WHO)

(FAO, UNICEF, ICA, OAS, UNESCO, Inter-American Institute of Agricultural Sciences, Inter-American Children's Institute)

AMRO-230—International Conference on Malnutrition and Food Habits

This conference, which was held from 9 to 14 September in Cuernavaca, Mexico, was the third of a series sponsored by the Josiah Macy, Jr. Foundation and the World Federation for Mental Health, and financed by interested agencies concerned with nutrition. The problems considered at this meeting related to the changes that would have to be introduced in the food habits of the population, in order to allow them to make better use of resources already available and accept and use new foods. Nutrition research workers, pediatricians, public health workers, anthropologists, psychiatrists, and social psychologists discussed the human implications of such changes. A full report on this meeting will be published by FAO in 1961.

(PAHO)

(UNICEF, FAO, Josiah Macy, Jr. Foundation, World Federation for Mental Health)

AMRO-237—Medical Education (Zone III)

A consultant visited the School of Medical Sciences of the National University of Nicaragua to advise on the organization of the Department of Preventive Medicine. He also made recommendations on the selection of students for admission to the School.

(PAHO)

AMRO-239—Promotion of Community Water Supplies (Interzone)

A consultant on finance and administration was provided to advise on specific national problems related to the financing of water systems. Conferences with Government officials, economists, and bank officials were held, and pertinent information and data were prepared and distributed to Governments. Considerable documentation was assembled and distributed for the guidance of waterworks officials in preparing projects for financing.

(PAHO/CWSF)

AMRO-241—Advisory Committee on Statistics

The first meeting of the Organization's Advisory Committee on Statistics was held on 20–21 June in Washington, D.C., to analyze current policy, objectives, and accomplishments, and to suggest new ways of solving present problems and of fulfilling the commitments of the Organization. A report of this meeting was published in English and Spanish as PAHO Miscellaneous Publications No. 61 and the Spanish text is also scheduled to appear in the February 1961 issue of the *Boletín*. Several recommendations of this group have already been put into effect: the post of Director of the Latin American Center for Classification of Diseases has been made a full-time appointment; a grant has been awarded to the professor of biostatistics of the School of Public Health of São Paulo for two six-week courses on medical statistics for potential professors of statistics in medical schools; Regional activities for the Eighth Revision of the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death* have been initiated; and plans for research on the regional development of epidemiological studies have progressed.

(PAHO)

AMRO-244—Seminar on Water Rates

A Seminar on Water Rates, jointly sponsored by the Government of Uruguay and the Organization, was held in Montevideo from 26 September to 1 October. Approximately 60 engineers from nearly every country in the Region attended. PAHO provided funds for approximately half of the participants, for two consultants, and for part of the secretariat costs. A report on the Seminar is under preparation and is scheduled for publication in 1961.

(PAHO/CWSF)

AMRO-249—Vector Control Training Course for the Mexico-U.S. Border Area

The El Paso Field Office organized a five-day course on vector control, which was attended by 25 participants from the United States of America and Mexico. Four one-week fellowships were awarded to candidates from Mexico.

(PAHO)

AMRO-259—Survey of the Health Needs of Children

A consultant was assigned to study this problem in the northern and northeastern regions of Brazil. A report will be submitted to the Government of Brazil so that it can be incorporated into the general report on children's needs that is being prepared.

(WHO)

(UNICEF)

AMRO-260—Seminar of Directors of Statistics of Countries of Zone III

Arrangements were made by the statistical consultant of Zone III for the first Seminar on Vital and Health Statistics. For some time, statisticians in Central America and Panama had felt that a meeting to discuss the methods followed in the different countries and the procedures for solving the problems encountered, and to provide an opportunity for the interchange of experiences would be of value. The subjects to be discussed are: vital statistics, statistics of hospitals and health centers, statistical analysis and special studies, morbidity statistics, national committees on vital and health statistics, and training of statistical personnel. Fellowships were awarded during 1960 for the Seminar, which will be held in Panama City on 16–21 January 1961.

(PAHO)

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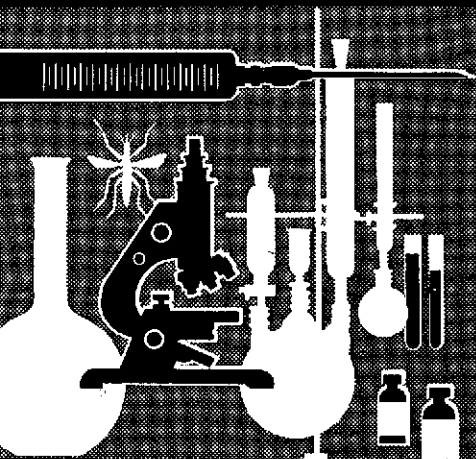
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