Official Documents
of the
Pan American Health Organization
No. 48

XVI PAN AMERICAN SANITARY CONFERENCE
XIV MEETING
REGIONAL COMMITTEE OF THE WHO FOR THE AMERICAS

Minneapolis, Minnesota, U.S.A., 21 August-3 September 1962

PART I

Final Report and Annexes

PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION
1501 New Hampshire Ave., N.W.
Washington 6, D.C., U.S.A.
1963

Official Documents
of the Pan American Health Organization

(Published in English and Spanish)

The following publications appear annually in the series *Official Documents of the Pan American Health Organization:*

Annual Report of the Director to the Directing Council of the Pan American Health Organization, in which the activities and accomplishments of the Organization are recorded. These publications are illustrated with maps and photographs and contain a general index. Every four years, when the Pan American Sanitary Conference meets, the Report of the Director contains, in addition, a four-year report for presentation to the Conference.

Proposed Program and Budget, which the Director prepares and submits to the Executive Committee and to the Directing Council (or to the Pan American Sanitary Conference). This volume contains an explanation of the proposed programs together with the corresponding budget estimates covering both the regular funds of the Pan American Health Organization and those of the World Health Organization, the Expanded Program of Technical Assistance, and other funds from different sources. The same document also presents the provisional draft budget of the following year for the Pan American Health Organization and the World Health Organization, Region of the Americas.

Financial Report of the Director and Report of the External Auditor, for each fiscal year.

Proceedings of the meetings of the Directing Council, Regional Committee of WHO for the Americas. This volume includes the précis minutes of the meeting, the final reports of the meetings of the Executive Committee held since the previous Directing Council meeting, as well as working documents related to topics under study.

Proceedings of the Pan American Sanitary Conference. This volume, published every four years, contains the verbatim minutes of the plenary sessions of the Conference and the précis minutes of the main committees, together with the working documents of the meeting.

Recent Volumes

No. 39: Financial Report of the Director and Report of the External Auditor for 1961.

No. 40: Proposed Program and Budget Estimates: Pan American Health Organization, 1963; World Health Organization, Region of the Americas, 1964, and Pan American Health Organization, Provisional Draft, 1964.

No. 41: Minutes, Resolutions, and Documents of the XIII Meeting of the Directing Council, XIII Meeting of the Regional Committee of WHO for the Americas, 1961.

No. 42: Basic Documents of the Pan American Health Organization (Fourth Edition) 1961.

No. 43: Quadrennial Report of the Director of the Pan American Sanitary Bureau (1958-1961).

No. 44: Annual Report of the Director of the Pan American Sanitary Bureau for 1961.

No. 45: Proposed Program and Budget Estimates: Pan American Health Organization, 1964; World Health Organization, Region of the Americas, 1965, and Pan American Health Organization, Provisional Draft, 1965.

No. 46: Financial Report of the Director and Report of the External Auditor for 1962.

No. 47: Basic Documents of the Pan American Health Organization (Fifth Edition) 1963.

No. 48: Proceedings of the XVI Pan American Sanitary Conference, Part I (Final Report and Annexes).

No. 49: Proceedings of the XVI Pan American Sanitary Conference, Part II (Minutes of plenary and committee sessions and activities of the Executive Committee).

No. 50: Annual Report of the Director of the Pan American Sanitary Bureau for 1962.

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The XVI Pan American Sanitary Conference, held in Minneapolis, Minnesota, from 21 August to 3 September 1962, was convened by the Director of the Pan American Sanitary Bureau in accordance with Resolution XIV of the 46th Meeting of the Executive Committee (April 1962).

The proceedings of the XVI Pan American Sanitary Conference are published in two volumes. The present volume contains the Final Report and Annexes. The second volume, Official Document No. 49, contains the minutes of the plenary and committee sessions, the list of delegations and other participants, the agenda, and the Rules of Procedure of the Conference; it also includes the Annual Report of the Chairman of the Executive Committee and the Final Reports of the 46th and 47th Meetings of the Executive Committee.

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PROCEDURAL DECISIONS

PROCEDURAL DECISIONS

1. Establishment of the Committee on Credentials

The XVI Pan American Sanitary Conference established the Committee on Credentials with the following members:

Chairman and Rapporteur: Dr. Mario Romero Alvergue (El Salvador)

Members: Dr. Roberto Nevárez Vásquez (Ecuador) and Dr. Demetrio Castillo (Venezuela).

(*First plenary session, 22 August 1962*)

2. Verification of Credentials

The XVI Pan American Sanitary Conference recognized the validity of the credentials of the following delegations: Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, France, Guatemala, Haiti, Honduras, Jamaica, Kingdom of the Netherlands, Mexico, Nicaragua, Panama, Paraguay, Peru, United Kingdom, United States of America, Uruguay, and Venezuela, and of the Official Observer from Canada.

(*First, third, and fifth plenary sessions, 22, 23, and 24 August 1962*)

3. Election of the President and Two Vice-Presidents of the XVI Pan American Sanitary Conference

The XVI Pan American Sanitary Conference elected the following officers:

President: Dr. José Alvarez Amézquita (Mexico)

Vice-Presidents: Dr. Tiburcio Padilla (Argentina) and Dr. Max Terán Valls (Costa Rica).

(*First plenary session, 22 August 1962*)

4. Election of Officers of the Main Committees

The XVI Pan American Sanitary Conference elected the Chairmen of the Main Committees as follows:

COMMITTEE I (Technical Matters)—*Chairman:* Dr. James Watt (United States of America)

COMMITTEE II (Administration, Finance, and Legal Matters)—*Chairman:* Dr. Bichat Rodrigues (Brazil).

(*First plenary session, 22 August 1962*)

The Main Committees later elected the following Vice-Chairmen and Rapporteurs:

COMMITTEE I (Technical Matters)—*Vice Chairman:* Dr. Amiro Pérez Mera (Dominican Republic); *Rapporteur:* Dr. Alberto E. Calvo (Panama)

COMMITTEE II (Administration, Finance, and Legal Matters)—*Vice Chairman:* Dr. Dionisio González Torres (Paraguay); *Rapporteur:* Dr. Daniel Orellana (Venezuela).

5. Establishment of the General Committee of the Conference

The XVI Pan American Sanitary Conference elected the Delegates of Venezuela and Chile to serve on the General Committee, along with the President and two Vice-Presidents of the Conference and the Chairmen of the Main Committees.

(*First plenary session, 22 August 1962*)

6. Adoption of the Agenda

The XVI Pan American Sanitary Conference adopted the agenda prepared by the Director of the Pan American Sanitary Bureau and approved by the Executive Committee at its 46th Meeting, after deciding not to include one item and adding one new item to that agenda.

(*First plenary session, 22 August 1962*)

FINAL REPORT

FINAL REPORT

The XVI Pan American Sanitary Conference was held in Minneapolis, Minnesota, United States of America, in accordance with Resolution XIV adopted by the Executive Committee at its 46th Meeting.

The Director of the Pan American Sanitary Bureau issued the convocation to the Governments of the Organization to be represented at the Conference, which took place from 21 August to 3 September 1962.

PRELIMINARY SESSION

On 21 August the preliminary session was held, at which the chiefs of delegations exchanged views on general and protocolary matters.

INAUGURAL SESSION

The inaugural session was held in the Auditorium of the Minneapolis Public Library on 21 August, at 8:30 p.m. The session was opened by Dr. Guillermo Arbona, President of the XV Pan American Sanitary Conference, Acting President of the XVI Conference and Secretary of Health of the Commonwealth of Puerto Rico. Addresses were then delivered by Dr. Bror F. Pearson of the Minnesota State Board of Medical Examiners, on behalf of the Honorable Elmer L. Andersen, Governor of the State of Minnesota; the Honorable Arthur Naftalin, Mayor of the City of Minneapolis; Dr. Luther L. Terry, Surgeon General of the United States Public Health Service; Dr. Abraham Horwitz, Director of the Pan American Sanitary Bureau; and Dr. M. G. Candau, Director-General of the World Health Organization. Finally, Dr. José Alvarez Amézquita, Minister of Health and Welfare and Chief of the Delegation of Mexico, spoke on behalf of the delegations to the Conference.

RULES OF PROCEDURE OF THE CONFERENCE

At the first plenary session, held on 22 August, the Rules of Procedure of the Pan American Sanitary Conference recommended by the Directing Council at its XIII Meeting (Resolution XXXVII) were unanimously adopted.

OFFICERS OF THE CONFERENCE

President:	Dr. José Alvarez Amézquita	Mexico
Vice-Presidents:	Dr. Tiburcio Padilla	Argentina
	Dr. Max Terán Valls	Costa Rica
Secretary ex officio:	Dr. Abraham Horwitz	Director, Pan American Sanitary Bureau

OFFICERS OF THE COMMITTEES

Committee on Credentials

Chairman and Rapporteur:	Dr. Mario Romero Alvergue	El Salvador
Members:	Dr. Roberto Nevárez Vásquez	Ecuador
	Dr. Demetrio Castillo	Venezuela

General Committee

Chairman:	Dr. José Alvarez Amézquita	Mexico
Vice-Chairmen:	Dr. Tiburcio Padilla	Argentina
	Dr. Max Terán Valls	Costa Rica
Members:	Dr. James Watt	United States of America
	Dr. Bichat Rodrigues	Brazil
	Dr. Dionisio González Torres	Paraguay
	Dr. Arnoldo Gabaldon	Venezuela
	Dr. Demetrio Castillo	
	Mr. Walter Müller	Chile
	Dr. Alfredo Leonardo Bravo	
Member and Secretary ex officio:	Dr. Abraham Horwitz	Director, Pan American Sanitary Bureau

Committee I (Technical Matters)

Chairman:	Dr. James Watt	United States of America
Vice-Chairman:	Dr. Amiro Pérez Mera	Dominican Republic
Rapporteur:	Dr. Alberto E. Calvo	Panama
Secretary:	Dr. Víctor A. Sutter	Assistant Director, Pan American Sanitary Bureau

Committee II (Administration, Finance, and Legal Matters)

Chairman:	Dr. Bichat Rodrigues	Brazil
Vice-Chairman:	Dr. Dionisio González Torres	Paraguay
Rapporteur:	Dr. Daniel Orellana	Venezuela
Secretary:	Dr. Stuart Portner	Chief of Administration, Pan American Sanitary Bureau

Technical Discussions on "The Present Status of Medical Care in the Americas in Relation to its Incorporation as a Basic Service in Integrated Health Programs"

Moderator:	Dr. Alfredo Leonardo Bravo	Chile
Rapporteur:	Dr. Guillermo Arbona	United States of America
Technical Consultant:	Dr. John B. Grant	Consultant, Department of Health, Commonwealth of Puerto Rico
Technical Secretary:	Dr. René García Valenzuela	Regional Adviser in Medical Care, Pan American Sanitary Bureau

AGENDA

At the first plenary session, the agenda prepared by the Director and approved by the Executive Committee at its 46th Meeting was adopted by the Conference after it decided not to include Item 3.8, "Letter from the Secretary General of the Organization of American States transmitting the Final Act of the Eighth Meeting of Consultation of Ministers of Foreign Affairs Serving as Organ of Consultation in Application of the Inter-American Treaty of Reciprocal Assistance." The Conference decided to add a new item, "Request of Jamaica for Admission to Membership in the Pan American Health Organization" (Item 1.15).

SESSIONS OF THE CONFERENCE

The Conference held an inaugural session, nine plenary sessions, three sessions of the Committee on Credentials, eight sessions of the General Committee, four sessions of Committee I, two sessions of Committee II, and four joint sessions of Committees I and II. The closing session was held on 3 September 1962.

RESOLUTIONS APPROVED

The Conference in plenary session approved the following resolutions:

Resolution I

Rules of Procedure of the Pan American Sanitary Conference

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having carefully examined the revised text of the Rules of Procedure of the Pan American Sanitary Conference contained in Document CSP16/2; and

Bearing in mind Resolution XXXVII adopted by the XIII Meeting of the Directing Council,[1]

RESOLVES:

To approve the Rules of Procedure of the Pan American Sanitary Conference contained in Document CSP16/2.

(Approved at the first plenary session, 22 August 1962)

Resolution II

Annual Report of the Chairman of the Executive Committee

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the Annual Report of the Executive Committee (Document CSP16/22),[2] submitted by its Chairman, Dr. Victorio Vicente Olguín, Representative of Argentina; and

Considering the terms of Article 4-F of the Constitution of the Pan American Health Organization,

[1] *Official Document PAHO* **41**, 36-37.

[2] *Official Document PAHO* **49**.

RESOLVES:

To approve the Annual Report of the Executive Committee (Document CSP16/22) and to commend the Chairman, Dr. Victorio Vicente Olguín, Representative of Argentina, and the members of the Committee on the work accomplished.

(*Approved at the second plenary session, 22 August 1962*)

Resolution III

Admission of Jamaica to Membership in the Pan American Health Organization

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering the formal request for membership in the Pan American Health Organization made on behalf of the Government of Jamaica by the Chargé d'Affaires of the Embassy of Jamaica in Washington, on 10 August 1962; [1]

Considering that this request has been communicated by the Director of the Pan American Sanitary Bureau to the Governments of the Pan American Health Organization; and

Considering that the Government of Jamaica has declared that it is willing to assume all the obligations imposed by the Constitution of the Pan American Health Organization and to comply with the provisions of the Pan American Sanitary Code, as amended by the Additional Protocol of 24 September 1952, as well as to contribute by means of a quota assessment to the financial support of the Organization,

RESOLVES:

1. To approve the application made by Jamaica for membership in the Pan American Health Organization.

2. To request the Director to transmit this decision to the Governments of the Organization.

(*Approved at the third plenary session, 23 August 1962*)

Resolution IV

Procedures for the Admission of States into the Pan American Health Organization

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering the provisions of Articles 2-A, 4-B and H, and 9-A of the Constitution of the Pan American Health Organization,

RESOLVES:

1. To request the Directing Council to study and draw up appropriate procedures to govern the admission of States to membership in the Pan American Health Organization.

2. To delegate to the Directing Council the authority to deal with questions of admission of States to membership in the Organization during the interval between meetings of the Conference, in accordance with the procedures to be adopted by the Directing Council.

(*Approved at the third plenary session, 23 August 1962*)

[1] See Annex 1, p. 35.

Resolution V

Quadrennial Report of the Director of the Pan American Sanitary Bureau (1958-1961)

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the Quadrennial Report of the Director of the Bureau on the activities of the Pan American Health Organization during the period between the XV and the XVI Pan American Sanitary Conferences (*Official Document No.* 43); and

Considering the terms of Article 4-F of the Constitution of the Pan American Health Organization,

RESOLVES:

To approve the Quadrennial Report (January 1958-December 1961) of the Director to the Governments of the Pan American Health Organization, to commend him on the work accomplished in the past four years and on the form of presentation of the Report, and to extend its commendation to the staff of the Bureau.

(*Approved at the fifth plenary session, 24 August 1962*)

Resolution VI

Annual Report of the Director of the Pan American Sanitary Bureau for 1961

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the Annual Report of the Director of the Pan American Sanitary Bureau, Regional Office of the World Health Organization for the Americas, for 1961 (*Official Document No.* 44); and

Considering the terms of Article 4-F of the Constitution of the Pan American Health Organization,

RESOLVES:

To approve the Annual Report of the Director for 1961 (*Official Document No.* 44), to commend him on the excellent work accomplished during the year, and to extend its commendation to the staff of the Bureau.

(*Approved at the fifth plenary session, 24 August 1962*)

Resolution VII

Election of the Director of the Pan American Sanitary Bureau and Nomination of the Regional Director of the World Health Organization for the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Bearing in mind Article 4-E as well as Article 21-A of the Constitution of the Pan American Health Organization, which provide that the Pan American Sanitary Bureau shall have a Director elected at the Conference by the vote of a majority of the Governments of the Organization;

Bearing in mind Article 42 of the Rules of Procedure of the Conference, which provides that the Director of the Bureau shall be elected by a number of votes greater than half the number of the Governments of the Organization; and

Bearing in mind Article 4 of the Agreement between the World Health Organization and the Pan American Health Organization, and Articles 49 and 52 of the Constitution of the World Health Organi-

zation, which establish the procedure for the appointment of the Regional Director of the World Health Organization,

RESOLVES:

1. To declare Dr. Abraham Horwitz elected Director of the Pan American Sanitary Bureau, for a period of four years to begin on 1 February 1963.

2. To communicate to the Executive Board of the World Health Organization the above designation of Dr. Abraham Horwitz for appointment as Regional Director for the Americas.

(*Approved at the seventh plenary session, 27 August 1962*)

Resolution VIII

Election of Two Member Countries to the Executive Committee on the Termination of the Periods of Office of Colombia and El Salvador

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering the provisions of Article 4-D of the Constitution of the Pan American Health Organization; and

Considering that the Governments of Costa Rica and the United States of America were elected to the Executive Committee on the termination of the periods of office of Colombia and El Salvador,

RESOLVES:

1. To declare the Governments of Costa Rica and the United States of America elected to membership on the Executive Committee for a period of three years.

2. To extend its thanks to the Governments of Colombia and El Salvador for the services rendered to the Organization by their representatives on the Executive Committee.

(*Approved at the seventh plenary session, 27 August 1962*)

Resolution IX

Summary of Four-Year Reports on Health Conditions in the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering that the Summaries of Four-Year Reports on Health Conditions in the Americas presented to the XIV,[1] XV,[2] and XVI[3] Pan American Sanitary Conferences provide an important record of progress in the Americas and contribute comparative data for the planning and evaluation of national and international health programs; and

Considering that the planning of long-range health programs requires basic data of many types, which should be as complete and comparable as possible and available for all areas of the Americas,

RESOLVES:

1. To recommend that the Governments of the Organization take the necessary steps to expand and strengthen their programs for the collection, publication, and utilization of vital and health statistics that will serve as a basis for the formulation, execution, and evaluation of national health programs.

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[1] *Scientific Publication PAHO* **24**.
[2] *Scientific Publication PAHO* **40**.
[3] *Scientific Publication PAHO* **64**.

2. To encourage the prompt, accurate, and complete reporting of data on morbidity and mortality due to communicable diseases, for immediate use in the planning, execution, and evaluation of programs for the control or eradication of such diseases.

3. To request the Director of the Pan American Sanitary Bureau to continue to stress the importance of the annual publication of statistics on morbidity and mortality due to notifiable diseases, so that current evaluation may be made of the progress of control or eradication programs on a local, national, and international basis.

4. To recommend that each national health authority establish, or strengthen, its statistics department so that it will function at the appropriate level, respond to the needs, and fulfill the responsibilities recommended in the Pan American Sanitary Code and by the XIV Pan American Sanitary Conference.[1]

5. To encourage the Governments of the Organization to support education and training programs in statistics for professional, technical, and auxiliary personnel, so that rapid progress may be made in obtaining basic data and utilizing them effectively.

6. To recommend to the Director that the Organization continue to give high priority to the improvement of the quality and coverage of vital and health statistics, so that throughout the Americas adequate systems of collection and utilization may be developed during the next decade.

7. To recommend that the Bureau continue the publication of the Summaries of Four-Year Reports on Health Conditions in the Americas, and that increased efforts be made at all levels to improve the quality of the data submitted on human resources, health and hospital services, and other facilities.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution X

Status of the Continental Plan of Community Water Supply and Sewage Disposal

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the status of the continental plan of community water supply and sewage disposal (Document CSP16/13);[2]

Noting with satisfaction the work of the Pan American Sanitary Bureau during the past four years in the promotion and development of the community water supply program in the Americas and the assistance being rendered to the Governments of the Organization;

Taking note of the contributions made in the past three years to the PAHO Special Community Water Supply Fund by the Governments of Colombia, the United States of America, Uruguay, and Venezuela;

Having heard the pledge of the United States Delegation to the Conference of a contribution of $300,000 to the PAHO Special Community Water Supply Fund for 1963 and a proposed pledge of $450,000 for 1964, subject to appropriation of funds, of which a maximum of $150,000 would be provided to match funds contributed by the other Governments of the Organization;

Viewing with satisfaction the investment made by the Inter-American Development Bank in water supply and sewage disposal, and the close collaboration established between the Bureau and the Bank;

Recognizing and reaffirming the great importance of the water supply and sewage disposal programs, both urban and rural, to public health and to the economic and social development of the peoples of all countries;

Noting the progress being made in the field of urban water systems and recognizing that it is necessary, in accordance with the Charter of Punta del Este, to stress the need for similar progress in the solution of rural water problems;

Believing that ministries of health must extend the sanitary supervision of urban water and sewer systems to include the sanitary review and approval for all plans on new construction;

[1] *Official Document PAHO* **14**, 629-632.

[2] See Annex 8, pp. 112-115.

Being convinced that, in most countries, rural water and sanitation programs can best be carried out by the engineering services of the ministries of health; and

Believing that the ever-increasing responsibilities of all ministries of health in the general field of environmental sanitation, and specifically in the fields of water supply and sewage disposal, both urban and rural, can be met only by adequately staffed and well-organized divisions of sanitary engineering,

RESOLVES:

1. To request the Director of the Bureau to give the highest priority to the community water supply program and to continue the Bureau's efforts to stimulate the investment of local and international funds in water projects.

2. To request the Director to continue to amplify the assistance being given to the Governments in the planning, financing, management, and operation of water supply systems and in the preparation and training of professional and auxiliary personnel required for these purposes.

3. To express its thanks to the Governments of Colombia, the United States of America, Uruguay, and Venezuela for their contributions to the PAHO Special Community Water Supply Fund during the past three years, and for the pledge of future assistance by the Government of the United States; and to request the Director to renew the invitations to all the Governments to contribute to the Fund.

4. To request the Director to submit a program and budget indicating how these funds are to be spent and the possible trends of the program.

5. To request the Director to convey to the Inter-American Development Bank the sense of satisfaction of the Conference with the consideration being given to loans for water systems and with the close collaboration being developed between the Bank and the Pan American Sanitary Bureau, as reflected in the recently signed agreement for joint action in the field of technical assistance.

6. To call to the attention of the Governments the necessity of giving high priority to national water supply and sewage disposal programs, both urban and rural, of incorporating them in long-range national plans, and of making suitable provision for the financing of these programs through maximum use of local resources.

7. To call to the attention of Governments the necessity of strengthening the engineering divisions of the national health services through due recognition of the need for improved conditions of employment and encouragement of professional development and subsequent appropriate action.

8. To encourage each Government to enforce existing regulations, or to adopt appropriate regulations, directed to the sanitary review and approval by engineers of the health ministries, national or state, of all plans for urban water and sewer installations prior to construction or modification of such works.

9. To express the need for all concerned—Governments, banking institutions, the Pan American Sanitary Bureau, and other international agencies and organizations—to study ways and find means for meeting the needs for rural water supply and sewage disposal, and to rapidly implement programs directed to the improvement of these facilities for the rural populations.

10. To urge Governments to assign responsibility for the conduct of all rural water and sewer projects to national or state health organizations.

(Approved at the eighth plenary session, 1 September 1962)

Resolution XI

Agreement between the Pan American Health Organization and the Inter-American Development Bank Concerning Technical Assistance

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the Memorandum of Agreement between the Pan American Health Organization and the Inter-American Development Bank concerning technical assistance (Document CSP16/26),[1]

[1] Mimeographed document.

RESOLVES:

To take note of the Agreement between the Pan American Health Organization and the Inter-American Development Bank concerning technical assistance, contained in Document CSP16/26.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XII

Environmental Sanitation

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering the scope and seriousness of the problems arising from the lack of sanitation in the Americas and the fact that the diseases due to this lack constitute the five main causes of death in most countries of the Region;

Recognizing the growing interest of the countries in the solution of these problems, as expressed in the Act of Bogotá and more specifically in the Charter of Punta del Este, which sets, among others, targets for the provision of water supply and sewage disposal services to vast sectors of both the urban and the rural population;

Bearing in mind the importance that sanitation activities have been given in recent years in the programs of the Organization, as evidenced by the increase in the funds assigned to them and by the present number of such projects at the country, intercountry, and regional levels; and

Mindful that these facts and the prospects of a continuing increase in sanitation activities, especially in connection with development plans under the Alliance for Progress, make it necessary to strengthen, at the Headquarters of the Pan American Sanitary Bureau, every means that will permit sanitation programs to be expanded as much as possible,

RESOLVES:

To request the Director to study the need for and advisability of establishing at the highest executive level within the Bureau a service exclusively devoted to environmental health and sanitation problems, bearing in mind the practical advantages of such a measure, the difficulties it might give rise to, and its administrative and financial implications.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XIII

Inter-American Investigation of Mortality

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering that the Pan American Health Organization has initiated an extensive regional research program on mortality,[1] in which approximately 40,000 deaths will be thoroughly investigated, with interviews of physicians, to obtain all available information regarding the cause of death, including supporting laboratory and pathological findings;

Considering that the preliminary analysis made in June 1962 indicated that the principal collaborators in the cities are obtaining the data to fulfill the objectives of the research project, so that the background information needed for further epidemiological studies of diseases in the adult population will become available; and

[1] See Annex 10, pp. 122-127.

Considering that the opportunities for research in the fields of cancer and cardiovascular diseases which will be indicated by this investigation, will especially require pathological services which at present are limited in some of the cities,

RESOLVES:

1. To recommend that, as the Organization makes progress in the investigation of mortality, appropriate extensions be made for understanding patterns of mortality in the Region, and that a similar investigation be undertaken of mortality of children in the age period 1-14 years in order to study the underlying and multiple causes responsible for mortality.

2. To recommend to the Director of the Pan American Sanitary Bureau that the Organization proceed with the planning of epidemiological research on cancer and cardiovascular diseases, so as to undertake studies which will take into account wide differences in customs and living conditions.

3. To recommend that the Governments of the Organization promote the development of post-graduate training programs in medical schools for the preparation of pathologists for hospital and medico-legal services.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XIV

Clinical and Pharmacological Evaluation of Exogenous Agents

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Bearing in mind the medically demonstrated existence of congenital defects and other significant disturbances directly or indirectly produced in individuals or their descendants by exogenous agents;

Taking into account the positive value of statistical and clinical evaluation as criteria in appraising the action of drugs, chemicals, and other factors causing this type of disturbance and side effects;

Recognizing that the value of data concerning any one problem acquires significance only when such data are compiled from sufficiently large population groups; and

Considering that a prompt analysis of such data must be made in order to ensure their most effective utilization for the protection of the health of the people,

RESOLVES:

1. To recommend that the Director of the Pan American Sanitary Bureau study the means of considering scientific problems of clinical and pharmacological evaluation of such exogenous agents, and of organizing a system of collection and exchange of information on the effects of such agents.

2. To recommend that the health services of the Governments of the Organization adopt measures designed to ensure that congenital defects noted at birth will be registered by the attendant on certificates of fetal death and live birth, and that those discovered at a later date will be notified to the health authorities.

3. To recommend to the Director of the Pan American Sanitary Bureau that the Organization develop standard procedures for the registration and rapid compilation and analysis by the Bureau of data with respect to congenital or secondary effects of the factors under consideration, with a view to bringing together the experiences of those countries where systems for collection of such data exist.

4. To recommend that effective methods of analyzing such data be developed so that health authorities may then be able to initiate necessary measures for the protection of the health of the public.

5. To recommend that cooperation and coordination be maintained with all agencies desiring to participate in the solution of these problems.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XV

Nutrition Program in the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the nutrition program in the Americas (Document CSP16/6); [1]

Considering that considerable progress has recently been made in this field, in accordance with the recommendations contained in Resolution XI of the XIII Meeting of the Directing Council; [2]

Bearing in mind the marked increase in the number of expanded nutrition programs that are being developed in the Americas for the purpose of raising the living standards of the rural populations;

Considering that personnel training in nutrition should continue to receive high priority in training programs;

Considering that a knowledge of food consumption rates is important for the preparation of food programs in the general development plans;

Bearing in mind that the research program on nutrition proposed by the Director of the Bureau in Document CSP16/6 includes the study of the most urgent problems in the Hemisphere in this regard;

Bearing in mind the importance of developing new sources of protein, together with a policy of controlling the prices of the traditional sources, in order to prevent protein deficiency in children, in accordance with one of the purposes set forth in Resolution A.2 of the Alliance for Progress; [3]

Considering that the control and possible eradication of endemic goiter in large areas of the Americas is technically feasible; and

Bearing in mind the need for sound coordinationof the activities of the various international agencies and institutions of bilateral assistance to the Governments for improving the nutrition and living standards of the peoples,

RESOLVES:

1. To express its satisfaction at the progress achieved in the nutrition program in the Americas, in accordance with Resolution XI of the XIII Meeting of the Directing Council.

2. To recommend that the Pan American Sanitary Bureau, in agreement with the interested Governments and international agencies, proceed as soon as possible to make an evaluation of the expanded nutrition programs being conducted in the various countries of the Hemisphere.

3. To recommend that the Governments, with the cooperation of the Bureau, take the necessary steps to strengthen the nutrition programs of health services at the local level, incorporating them in their regular activities, and that they endeavor to coordinate them with those being carried out by agricultural extension and educational services.

4. To instruct the Director of the Bureau to consider the possibility of increasing, within the limits of the budget, the resources devoted to training personnel in nutrition, as regards both fellowships and financial assistance to the training centers that are being organized in cooperation with FAO and UNICEF, and to the inclusion of nutrition into the curriculum of schools of medicine, public health, nursing, and others.

5. To recommend to the Governments that they carry out food consumption surveys whose findings will serve as the basis for the preparation of national food programs forming part of general development plans.

6. To give full support to the nutrition research program proposed by the Director in Document CSP16/6.

7. To recommend that in view of the severity of the nutrition problem in children, especially the problem of protein deficiency, the Governments intensify the policy of developing the traditional sources of

[1] See Annex 7, pp. 105-111.

[2] *Official Document PAHO* **41**, 21.

[3] *OAS Official Records,* OEA/Ser.H/XII.1 (Eng.) 1961, pp. 30-32.

protein and controlling their prices, as well as that of developing other sources of low-cost protein not at present used for human consumption.

8. To reiterate the urgent need for countries that have not yet done so, to institute a program of salt iodization as a means of endemic goiter control (or even of eradication in certain areas), and to recommend that the Director of the Bureau call a meeting to study the difficulties encountered, particularly those of a legal or administrative nature, and to establish a policy aimed at a significant reduction of this endemic disease.

9. To request the Director, if it is deemed advisable, to call a meeting of the representatives of interested international agencies and Governments that provide assistance through bilateral agreements, for the purpose of attaining more effective coordination of the international cooperative efforts aimed at improving the diet and nutrition in the Americas.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XVI

Financial Report of the Director and Report of the External Auditor for 1961

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the Financial Report of the Director and the Report of the External Auditor for 1961 (*Official Document No.* 39); and

Bearing in mind the action of the Executive Committee at its 46th Meeting regarding the above-mentioned reports (Resolution I),

RESOLVES:

To approve the Financial Report of the Director and the Report of the External Auditor for the fiscal year 1961 (*Official Document No.* 39).

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XVII

Report on the Collection of Quota Contributions

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the collection of quota contributions (Document CSP16/17 and Addendum I);[1] and

Considering that the Pan American Health Organization continues to be faced with financial problems owing to the large amounts of the quotas in arrears,

RESOLVES:

1. To take note of the report of the Director on the status of the collection of quota contributions (Document CSP16/17 and Addendum I).

2. To urge the Governments whose quota contributions are in arrears to pay them as soon as possible, in order to ensure the normal development of the Organization's activities.

(*Approved at the eighth plenary session, 1 September 1962*)

[1] Mimeographed document.

Resolution XVIII

Emergency Revolving Fund

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the use of the Emergency Revolving Fund (Document CSP16/18);[1] and

Considering that the Fund must be maintained at the established level if the important purpose of assistance to Governments for which it was created is to be fulfilled,

RESOLVES:

1. To take note of the report of the Director on the use of the Emergency Revolving Fund (Document CSP16/18).

2. To urge Governments requesting assistance from the Fund to reimburse the amounts advanced as soon as possible.

(Approved at the eighth plenary session, 1 September 1962)

Resolution XIX

Amendments to the Staff Rules and Regulations of the Pan American Sanitary Bureau

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Considering the provisions of Article 21-B of the Constitution of the Pan American Health Organization;
Bearing in mind Resolutions VI and VII of the 46th Meeting of the Executive Committee; and
Having regard to the provisions of Staff Regulations 3.1 and 12.2,

RESOLVES:

1. To take note of the amendments to the Staff Rules of the Pan American Sanitary Bureau contained in the annex to Document CE46/3,[2] submitted by the Director and confirmed by the Executive Committee at its 46th Meeting.

2. To take note of the decision of the Director that the present Assistant Director of the Bureau, Dr. John C. Cutler, shall be the Deputy Director and that the present Secretary General, Dr. Víctor A. Sutter, shall be the Assistant Director, and that the salary of the Deputy Director shall be fixed at $17,900 per annum and that of the Assistant Director, at $16,900 per annum.

3. To amend Staff Regulation 3.1 to read as follows: "The salaries of the Deputy Director and the Assistant Director shall be determined by the Director of the Bureau, with the approval of the Executive Committee"; and to amend the second sentence of Staff Rule 230.1 to read as follows: "The salaries of the Deputy Director and the Assistant Director shall be fixed by the Director, with the approval of the Executive Committee."

(Approved at the eighth plenary session, 1 September 1962)

[1] Mimeographed document.
[2] Mimeographed document.

Resolution XX

Salary of the Director of the Pan American Sanitary Bureau

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined Resolution XVII concerning the salary of the Director of the Pan American Sanitary Bureau, adopted by the Executive Committee at its 46th Meeting; [1]

Bearing in mind Resolution WHA15.5, adopted by the Fifteenth World Health Assembly,[2] which established the salaries of Regional Directors of the World Health Organization; and

Recognizing that the responsibilities of the Director of the Bureau have increased considerably as a result of the growth of the Organization and the expansion of its activities during the past ten years,

RESOLVES:

To establish the remuneration of the Director of the Pan American Sanitary Bureau as follows, with effect from 1 January 1962: annual salary, $18,900; annual representation allowance, $6,000; and, in addition, the normal allowances authorized to staff members under the Staff Rules.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XXI

Report on Buildings and Installations for Headquarters

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having considered the reports of the 46th Meeting of the Executive Committee, of the Permanent Subcommittee on Buildings and Installations, and of the Director of the Pan American Sanitary Bureau on the progress made to date in planning for the construction of the new headquarters building of the Pan American Sanitary Bureau; [3]

Bearing in mind that the preliminary plans for the building have been completed and that these plans have been approved by the National Capital Planning Commission and the Commission on Fine Arts in Washington, D.C.;

Noting the generous grant made by the W. K. Kellogg Foundation; and

Noting also that additional financing is necessary in order to meet the revised cost estimates for the new headquarters building,

RESOLVES:

1. To authorize the Director to request the necessary additional financing from the W. K. Kellogg Foundation, or from another foundation, on the same basis as the previous arrangements.

2. To authorize the Director to instruct the architects to undertake immediately the final plans and specifications for the new headquarters building.

3. To authorize the Director, on completion of the final plans and specifications, to secure bids and award contracts for the construction of the building, provided the necessary financing has been assured.

4. To express its thanks to the members of the Permanent Subcommittee on Buildings and Installations, to the Director, and to the staff of the PASB for their efforts to date for the construction of the new headquarters building, and to request them to continue these efforts so that construction may be expedited and the building occupied at an early date.

(*Approved at the eighth plenary session, 1 September 1962*)

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[1] *Official Document PAHO* **49**.

[2] *Off. Rec. Wld Hlth Org.* **118**, 3.

[3] See Annex 13, pp. 133-142.

Resolution XXII

Program and Budget of the Pan American Health Organization for 1963

THE XVI PAN AMERICAN SANITARY CONFERENCE

RESOLVES:

1. To appropriate for the financial year 1963 an amount of $5,990,000 as follows:

Purpose of the Appropriation

Part I:	Pan American Health Organization—Organizational Meetings	$ 229,850
Part II:	Pan American Health Organization—Headquarters	1,713,198
Part III:	Pan American Health Organization—Field and Other Programs	3,559,452
Part IV:	Pan American Health Organization—Special Fund for Health Promotion	187,500
Part V:	Pan American Health Organization—Amount for Increasing the Working Capital Fund	300,000
Total—All Parts		$5,990,000

2. That the appropriation shall be financed from:

a. Assessments in respect to:

i)	Member Governments to be assessed under the scale adopted by the Council of the Organization of American States in accordance with Article 60 of the Pan American Sanitary Code	$5,890,000
ii)	Jamaica (provisional assessment for this Member Government based on assessment of other Member Governments of comparable size and per capita income)	18,259
iii)	France (Resolutions XV and XL of the V Meeting of the Directing Council)[1]	9,891
iv)	Kingdom of the Netherlands (Resolutions XV and XL of the V Meeting of the Directing Council)	6,435
v)	United Kingdom (Resolutions XV and XL of the V Meeting of the Directing Council)	25,243
b. Miscellaneous Income		40,172
Total		$5,990,000

3. That amounts not exceeding the appropriations noted under paragraph 1 shall be available for the payment of obligations, in accordance with the Financial Regulations of the Organization, incurred during the period 1 January to 31 December 1963, inclusive.

4. That the Director shall be authorized to transfer credits between parts of the budget, provided that such transfers of credits between parts as are made do not exceed 10 per cent of the part from which the credit is transferred. Transfers of credits between parts of the budget in excess of 10 per cent may be made with the concurrence of the Executive Committee. All transfers of budget credits shall be reported to the Directing Council.

(*Approved at the eighth plenary session, 1 September 1962*)

[1] *PASB Publication* **270**, 22-23, 42-43.

Resolution XXIII

Allowances for Members of the Executive Committee of the Pan American Health Organization

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having taken into account Resolution WHA14.5 of the Fourteenth World Health Assembly,[1] which provides that Members of the WHO Executive Board will be paid a per diem allowance of $30 while attending meetings in New York;

Considering that costs have increased in Washington in recent years, as well as in New York; and

Believing that per diem allowances for Members of the Executive Committee of the Pan American Health Organization should be set at a level comparable with that established for Members of the Executive Board of the World Health Organization,

RESOLVES:

To approve a per diem allowance of $30 (thirty dollars) for Members of the Executive Committee, in accordance with Article 17-B of the Constitution of the Pan American Health Organization.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XXIV

Proposed Program and Budget of the World Health Organization for the Region of the Americas for 1964

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined *Official Document No.* 40 submitted by the Director of the Pan American Sanitary Bureau, which contains the Proposed Program and Budget of the World Health Organization for the Region of the Americas for 1964; and

Bearing in mind that the aforesaid Proposed Program and Budget is presented to the Conference, as Regional Committee of the World Health Organization, for review and transmittal to the Director-General of that Organization, so that he may take it into consideration in the preparation of the proposed budget of the WHO for 1964,

RESOLVES:

To approve the transmittal of the Proposed Program and Budget of the World Health Organization for the Region of the Americas for 1964, contained in *Official Document No.* 40, and to request the Regional Director to transmit it to the Director-General of that Organization so that he may take it into consideration when preparing the WHO budget for 1964.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XXV

Provisional Draft of the Proposed Program and Budget of the Pan American Health Organization for 1964

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined *Official Document No.* 40 submitted by the Director of the Pan American Sanitary Bureau, which contains the provisional draft that is to constitute the basis for the preparation of the 1964

[1] *Off. Rec. Wld Hlth Org.* **110**, 2-3.

Proposed Program and Budget of the Pan American Health Organization to be considered by the 48th Meeting of the Executive Committee and the XIV Meeting of the Directing Council;

Recognizing that the provisional draft of the Proposed Program and Budget contains well-conceived and much-needed public health projects; and

Taking into account the recommendations and comments made by various delegations during the discussion of the provisional draft,

RESOLVES:

1. To take note of the provisional draft of the Proposed Program and Budget of the Pan American Health Organization for 1964 contained in *Official Document No.* 40.

2. To instruct the Director, in preparing his Proposed Program and Budget for 1964 and in his consultations with Governments on this matter, to give due consideration to the recommendations and comments made by several delegations.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XXVI

Research Policy and Program of the Pan American Health Organization

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having considered the report of the Director on the research policy and program of the Pan American Health Organization (Document CSP16/35);[1]

Bearing in mind Resolution XXXVIII of the XIII Meeting of the Directing Council;[2]

Having regard to the present health problems highlighted in the Charter of Punta del Este, the solution of which will be expedited by the implementation of the recommended research policy and program;

Noting that an important research training program is called for;

Noting the recommendation that the Governments, through their national research councils or other appropriate bodies, assess national biomedical and public health research resources, and

Considering the importance of research in the program of the Organization,

RESOLVES:

1. To express its satisfaction with the research policy and program as presented and, in the words of the Advisory Committee on Medical Research, "congratulate the Director, the Secretariat, the staff, and the many experts involved, for the very high standards of scientific excellence attained."

2. To stress the importance of research training.

3. To request the Director: (a) to take all possible steps to expand the research activities of the Organization, including specific projects and their financing, for the mutual benefit of the countries of the Region; and (b) to submit annual reports to the Directing Council and a progress report to the XVII Pan American Sanitary Conference.

(*Approved at the eighth plenary session, 1 September 1962*)

[1] See Annex 9, pp. 116-121.

[2] *Official Document PAHO* **41**, 37.

Resolution XXVII

Status of Malaria Eradication in the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the X Report on the status of malaria eradication in the Americas (Document CSP16/20),[1] presented by the Director of the Pan American Sanitary Bureau;

Bearing in mind the progress made as a result of the coordinated efforts of the Governments and of the international organizations cooperating in the campaign;

Taking into account the technical problems that still have to be solved in some areas and the research being carried out for that purpose; and

Mindful of the economic difficulties that are causing costly delays in the development of certain campaigns,

RESOLVES:

1. To express its deep gratitude for the assistance that UNICEF and the Agency for International Development (AID) of the Government of the United States of America have given in carrying out the continent-wide program of malaria eradication, and to reiterate its wish that this cooperation be continued and, if possible, intensified, until the eradication of malaria in the Americas is achieved.

2. To express its satisfaction with the research programs that some Governments are carrying out with the cooperation of the Pan American Sanitary Bureau for the purpose of solving technical problems that impede the interruption of malaria transmission in certain areas.

3. To again call the attention of Governments to the urgent necessity of eradicating malaria and of assigning to the campaigns the necessary funds for that purpose.

4. To express its satisfaction with the assistance that the Pan American Sanitary Bureau is giving to the Governments in the training of personnel.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XXVIII

Estimated Requirements for the Special Malaria Fund of the Pan American Health Organization

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the estimated requirements for the Special Malaria Fund of the Pan American Health Organization (Document CSP16/25);[2]

Taking into account the positive effects that malaria eradication will have on the economic and social development of vast areas of Latin America, primarily in the sector of agricultural production;

Bearing in mind the immediate goals for this decade mentioned in Title I of the Charter of Punta del Este, and the measures for immediate action set forth Resolution A.2 of the Charter;[3]

Having regard to the need for a greater financial effort for the eradication of malaria in certain areas where intradomiciliary spraying of residual insecticides is by itself insufficient to interrupt transmission; and

Considering that Central America and Panama form a geographically well-defined unit and that continued transmission of malaria in any one of these countries immediately jeopardizes those other areas where malaria has been eradicated,

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[1] See Annex 2, pp. 38-83.

[2] See Annex 3, p. 84.

[3] *OAS Official Records,* OEA/Ser.H/XII.1 (Eng.) 1961, pp. 10-11, 30-32.

RESOLVES:

1. To take note of the estimated requirements in 1963 for the PAHO Special Malaria Fund.

2. To urge the Governments to contribute to this Special Fund.

3. To recommend that the countries of the Organization incorporate the malaria eradication campaign in the economic and social development programs of the Alliance for Progress, and give suitable priority to it.

4. To recommend that the provision of international assistance for malaria eradication campaigns in the Central American isthmus be sufficiently flexible to make possible the transfer of financial and material resources from one country to another, depending on the technical requirements of the moment.

5. To express its gratitude to the Government of the United States of America for its generous contribution to the Special Malaria Fund in 1963 and for its offer of continued support of the Fund in the future.

6. To express its thanks to the Bureau for the satisfactory way in which this item was presented.

(Approved at the eighth plenary session, 1 September 1962)

Resolution XXIX

National Health Plans

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the planning activities of the Pan American Health Organization (Document CSP16/24);[1] and

Bearing in mind the importance and urgency of these activities and the growing interest being shown by the Governments in the formulation of national health plans,

RESOLVES:

1. To take note of the report of the Director on national health plans (Document CSP16/24).

2. To support the steps taken by the Director with regard to the advisory services to be given to Governments, the formulation of planning methodology, and the training of health planners.

3. To call to the attention of the Governments the need for formulating national health plans and, to that end, for establishing at the level of the ministries of health planning units duly coordinated with and represented in the national units for economic and social planning, in order to assure the integration of plans and programs for health into those of national social and economic development.

(Approved at the eighth plenary session, 1 September 1962)

Resolution XXX

Report on the Status of Smallpox Eradication in the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the present status of smallpox eradication in the Americas (Document CSP16/11);[2]

Bearing in mind the concern expressed by the delegates from countries now free of this disease about the dangers inherent in the foci of smallpox that remain in the Americas;

Having considered the program of the Organization for completing the eradication of smallpox in the Americas; and

[1] See Annex 12, pp. 131-132.

[2] See Annex 4, pp. 85-93.

Taking into account the social and economic burdens of smallpox, and the resolution of the Charter of Punta del Este "to complete projects that are now being executed, particularly those related to the control or eradication of communicable diseases . . . giving due priority to the emergency programs of certain countries," [1]

RESOLVES:

1. To express its satisfaction with the success achieved by various Governments of the Organization in eradicating smallpox and with the development of nation-wide campaigns by other Governments.

2. To urge once again that those Governments in whose countries foci of smallpox still exist expand and accelerate their national smallpox eradication programs and give such programs high priority in their national health plans, seeking needed additional funds and resources from national or international sources in order to make possible the eradication of smallpox from the Americas within the next five years, in accordance with Resolution A.2 of the Charter of Punta del Este.

3. To instruct the Director to take all necessary steps to support and assist the Governments in order to reach the goal of eradication of the disease.

4. To call the attention of the Governments to the importance of the correct application of the special measures set forth in the *International Sanitary Regulations,* particularly to Article 3.[2]

5. To urge those Governments that have eradicated smallpox to develop systems within their health services to assure the maintenance of adequate national levels of immunity and to provide for continued surveillance against recurrence of the disease.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution XXXI

Status of Aëdes aegypti Eradication in the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Director on the *Aëdes aegypti* eradication campaign in the Americas (Document CSP16/12) ; [3]

Having noted that fifteen years have elapsed since the decision was taken by the First Meeting of the Directing Council of the Pan American Health Organization (Buenos Aires, 1947) [4] to undertake a continental program to eradicate *Aëdes aegypti* and that many areas are still infested with the *Aëdes aegypti* mosquito, constituting potential and actual sources of reinfestation for those areas and countries that have eradicated the vector;

Having noted Resolution XXXIV of the XIII Meeting of the Directing Council; [5]

Having noted the reports of increasing insecticide resistance and of sporadic introduction of tardily-recognized cases of jungle yellow fever into *aëgypti*-infested urban areas; and

Bearing in mind the programs that certain Governments are carrying out and the intention expressed by others of undertaking *Aëdes aegypti* eradication,

RESOLVES:

1. To invite the Governments of those countries and areas in which the vector has been eradicated to maintain active surveillance programs in order to prevent reinfestation.

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[1] *OAS Official Records,* OEA/Ser.H/XII.1 (Eng.) 1961, p. 31.

[2] *International Sanitary Regulations, Annotated edition,* Geneva: World Health Organization, 1957, 129 p.

[3] See Annex 5, pp. 93-98.

[4] *PASB Publication* **247**, 3.

[5] *Official Document PAHO* **41**, 34.

2. To express its satisfaction with the progress achieved in the current eradication campaigns of certain countries, which makes it possible to foresee the elimination of this vector from their territories in the near future.

3. To call on the Governments of countries and areas still infested with *Aëdes aegypti* to give the highest priority to provision of the necessary funds, personnel, and materials for the completion of their eradication campaigns.

4. To request the Director to exert all appropriate efforts to intensify and accelerate the *Aëdes aegypti* eradication campaign in order to achieve the goal of eradication at the earliest possible date.

(Approved at the ninth plenary session, 2 September 1962)

Resolution XXXII

Tuberculosis Control in the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Bearing in mind that the Executive Committee at its 36th Meeting requested the Director to submit a report to the Directing Council on the financial requirements for formulating a continental plan of tuberculosis control,[1] and that subsequently the Charter of Punta del Este, in Resolution A.2 (Par. 2.b-3),[2] recommended the intensification of tuberculosis control;

Considering that both the WHO Expert Committee on Tuberculosis and the UNICEF/WHO Joint Committee on Health Policy have made a series of technical recommendations that can be applied for the gradual solution of this problem;

Considering that, despite the efforts made and the weapons medicine has acquired to combat tuberculosis, the Governments have reported that they are confronted with a serious situation due to that disease;

Bearing in mind that it is becoming necessary to devote much greater efforts to the solution of the tuberculosis problem, especially in the matter of financing and of utilizing available resources;

Considering that, in order to ensure that better use is made of those resources, it is urgently necessary to draw up and implement sound, integrated public health plans and programs into which tuberculosis control programs should be incorporated; and

Considering that, in order to draw up long-term plans for the control of tuberculosis, it is urgently necessary to stimulate epidemiological research on the problem by every possible means, especially by the development of sound methods in limited demonstration projects,

RESOLVES:

1. To note with satisfaction the report of the Director (Document CSP16/14),[3] which demonstrates the concern of the Bureau with the tuberculosis problem in the Americas.

2. To urge the Governments to do everything possible to stimulate national tuberculosis programs and to incorporate them into the general public health services.

3. To recommend to the Governments that they obtain from the agencies that provide the money for, or are concerned with, the financing of the Alliance for Progress, special funds for coping with the complex problem of tuberculosis.

4. To request the Director to assist the Governments in drawing up and implementing short-term plans based on local demonstration projects to be supported by UNICEF funds, and long-term plans to be supported by domestic funds or funds from other sources, in accordance with the principles laid down by the UNICEF/WHO Joint Committee on Health Policy.

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[1] *Official Document PAHO* **27**, 424.

[2] *OAS Official Records*, OEA/Ser.H/XII.1 (Eng.) 1961, p. 31.

[3] See Annex 6, pp. 99-105.

5. To request that the Director take all possible measures to assist the Governments in the preparation of specialized personnel required for these programs.

6. To urge the Director to ensure that priority is given in the research program to studies designed to provide a better knowledge both of the magnitude of the problem and of its economic and technical aspects.

7. To authorize the Director to take steps to obtain without delay the necessary funds for putting the foregoing recommendations into practice.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution XXXIII

Health Activities Carried Out in Conformity with the Charter of Punta del Este, and Their Future Prospects

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having considered the report of the Director on the activities being carried out by the Pan American Sanitary Bureau under the Charter of Punta del Este (Document CSP16/7);[1] and

Bearing in mind the importance of these activities for the health and welfare of the peoples of the Americas,

RESOLVES:

1. To approve the report of the Director on the activities of the Pan American Sanitary Bureau under the Charter of Punta del Este (Document CSP16/7).

2. To urge the Governments to push forward with well-planned and coordinated programs designed to achieve the health objectives of the Charter of Punta del Este.

3. To request the Director to continue, and to augment, the advisory services to Governments for the "preparation and execution of the afore-mentioned (health) plans," as recommended in the Charter of Punta del Este.

4. To invite the Director to proceed with the program of the Bureau in such a way as to fulfill the responsibilities of the Pan American Sanitary Bureau under the Charter of Punta del Este.

5. To invite the Director to make every effort to secure extrabudgetary funds in support of training in planning for national and international staff and in support of the programs and projects working to achieve the health objectives of the Charter of Punta del Este.

6. To invite the Director to take the steps necessary to assure the participation of the Bureau with respect to surveys, planning, and program operation in social and economic development undertaken by the Organization of American States, the Inter-American Development Bank, the United Nations Economic Commission for Latin America, and other organizations, both multilateral and bilateral, in accordance with the Charter of Punta del Este.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution XXXIV

Resolutions of the World Health Assembly of Interest to the Regional Committee

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined Document CSP16/23,[2] in which the Director brought to the attention of the Regional Committee for the Americas a number of resolutions of the Fifteenth World Health Assembly;[3] and

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[1] See Annex 11, pp. 128-131.

[2] Mimeographed document.

[3] *Off. Rec. Wld Hlth Org.* **118.**

Bearing in mind that the Pan American Health Organization is already engaged in the matters covered by the resolutions of the World Health Assembly,

RESOLVES:

To take note of the following resolutions contained in Document CSP16/23: WHA15.19, Report on Development of the Malaria Eradication Program; WHA15.20, Development of the Malaria Eradication Program: Acceleration of the program from continued voluntary contributions; WHA15.22, Continued Assistance to Newly Independent States; WHA15.25, Admission of New Associate Members: Jamaica; WHA15.34, Malaria Eradication Special Account; WHA15.35, Financing of the Malaria Eradication Program: Criteria for determining eligibility for credits toward the payment of contributions; WHA15.47, Malaria Eradication Postage Stamps; WHA15.53, Smallpox Eradication Program; WHA15.54, Developments in Activities Assisted Jointly with UNICEF; WHA15.56, Decisions of the United Nations, Specialized Agencies, and the International Atomic Energy Agency affecting WHO's Activities: World Food Program; and WHA15.57, Decisions of the United Nations, Specialized Agencies, and the International Atomic Energy Agency affecting WHO's Activities: United Nations Development Decade.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution XXXV

Topic for Technical Discussions during the XIV Meeting of the Directing Council, XV Meeting of the Regional Committee of WHO for the Americas

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Bearing in mind the provisions of Articles 1, 2, and 7 of the Rules for Technical Discussions;[1] and

Bearing in mind the report of the working group composed of the Delegates of Jamaica, Mexico, and Venezuela,

RESOLVES:

To select "Ideas for the Formulation of a Plan for the Control of Gastrointestinal Diseases, Including Environmental Sanitation Measures, Epidemiology, Health Education, and Early Diagnosis and Treatment," as the subject for the Technical Discussions to be held during the XIV Meeting of the Directing Council, XV Meeting of the WHO Regional Committee for the Americas.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution XXXVI

Technical Discussions

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having examined the report of the Rapporteur of the Technical Discussions on "The Present Status of Medical Care in the Americas in Relation to its Incorporation as a Basic Service in Integrated Health Programs," held at the present Conference; and

Considering the importance for the health of the Americas of achieving an integrated system of health services,

[1] *Official Document PAHO* 47, 76-78.

RESOLVES:

1. To take note of the report on the Technical Discussions (CSP16/DT/5, Rev. 2)[1] and express its satisfaction with the deliberations.

2. To recommend that the Director give the report the widest possible distribution.

(*Approved at the ninth plenary session, 2 September 1962*)

Resolution XXXVII

Water and Environmental Sanitation in Urban and Rural Housing Programs

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Recognizing the need for the provision of potable water and for facilities for sanitary disposal of wastes in order to protect the individual and community health, both urban and rural;

Bearing in mind that the role of national health authorities in assuring services and protection of this type is recognized and defined in Resolution X of the XVI Pan American Sanitary Conference;[2]

Bearing in mind that the basic health aspects of water supply and sewage disposal must be considered within the complex of health factors in planning and maintaining housing and community development programs and projects; and

Considering that in some instances due consideration has not been given to basic water supply and sewage disposal facilities in housing projects and community development projects already completed or initiated,

RESOLVES:

1. To urge the Governments to provide for the participation of the appropriate health authorities in the planning and review of all programs and projects for urban housing, whether restoration or new construction.

2. To encourage the Governments to give the necessary attention to the health aspects of rural housing and community organization and development, particularly in relation to water and environmental sanitation programs.

3. To urge the national health authorities (ministries of health) to assume their appropriate responsibilities for the health aspects of the above-mentioned rural programs.

(*Approved at the eighth plenary session, 1 September 1962*)

Resolution XXXVIII

Place of the XVII Pan American Sanitary Conference

THE XVI PAN AMERICAN SANITARY CONFERENCE,

Having been informed that on 25 August 1962 the Government of Uruguay addressed a communication to the President of this Conference proposing the XVII Pan American Sanitary Conference be held in that country, and that on 27 August 1962 the Government of Cuba extended a similar invitation; and

Bearing in mind the exceptional circumstances in which the expected completion within the next four

[1] Published in Spanish in the *Boletín de la Oficina Sanitaria Panamericana*, Vol. LIII, No. 6 (December 1962), pp. 562-565, and in *Scientific Publication PAHO* **70**, 100-104.

[2] See pp. 13-14.

years of the new headquarters building of the Pan American Health Organization would be an occasion for the Conference in 1966 to occupy for the first time the main center of future international health activities of the Hemisphere,

RESOLVES:

1. To express its thanks to the Governments of Uruguay and Cuba for their offers in connection with the XVII Pan American Sanitary Conference.

2. To transmit the invitations received to the Directing Council with the request that at its 1964 meeting it designate the place of the XVII Pan American Sanitary Conference, bearing in mind the above-mentioned invitations, those that may be received by the date of the meeting, and all other relevant circumstances with regard to the opening of the new building of the Pan American Health Organization; and to authorize the Directing Council to take such measures as may be pertinent in order to designate the place.

(Approved at the ninth plenary session, 2 September 1962)

Votes of Thanks

I. THE XVI PAN AMERICAN SANITARY CONFERENCE

Expresses its thanks to the Honorable Elmer L. Andersen, Governor of the State of Minnesota; to the Honorable Arthur Naftalin, Mayor of the City of Minneapolis; to the Board of Governors and staff of the Mayo Clinic and the Mayo Foundation; to the Minnesota Citizens' Steering Committee; and to the gracious ladies of the Hospitality Committee for the warm welcome accorded to the delegations and the Secretariat and for their many kindnesses;

And to the press, radio, and television services for the broad coverage given to the activities of the Conference.

II. THE XVI PAN AMERICAN SANITARY CONFERENCE

Expresses its thanks to the Secretariat for the efficient way in which they have worked.

IN WITNESS WHEREOF, the President and the Director of the Pan American Sanitary Bureau, Secretary ex officio of the Conference, sign the present Final Report in the English and Spanish languages, both texts being equally authentic.

DONE in Minneapolis, Minnesota, United States of America, this third day of September nineteen hundred and sixty-two. The Secretary shall deposit the original texts in the archives of the Pan American Sanitary Bureau and send copies thereof to the Governments of the Organization.

MAX TERÁN VALLS
Vice-President, Acting President
of the Conference

ABRAHAM HORWITZ
Secretary ex officio of the
Conference

ANNEXES

Annex 1

REQUEST OF JAMAICA FOR ADMISSION TO MEMBERSHIP IN THE PAN AMERICAN HEALTH ORGANIZATION [1]

The Chair has the honor of submitting to the delegates for consideration the request of Jamaica for admission to membership in the Pan American Health Organization, together with the correspondence exchanged with the Director of the Pan American Sanitary Bureau and the technical report on this matter prepared by the Secretariat.

In accordance with the decision taken by the General Committee, this matter will constitute the first item of business at the third plenary session, Thursday, 23 August.

[1] Document CSP16/37.

Appendix I

COMMUNICATION OF THE DIRECTOR OF THE PAN AMERICAN SANITARY BUREAU

Minneapolis, 22 August 1962

His Excellency Dr. José Alvarez Amézquita
President of the XVI Pan American Sanitary Conference
Minneapolis, Minnesota

Sir:

I am carrying out the request contained in the communication dated 10 August from the Embassy of Jamaica in the United States of America, by transmitting the original of that communication to you for your consideration.

In the document in question, the Government of Jamaica applies for admission to membership in the Pan American Health Organization, in conformity with Article 2, paragraph A, of the Constitution of the Organization.

On 12 August the text of this communication was cabled to all the Governments of the Organization and later, on 13 August, confirmed by a letter which was also sent to the Organization of American States and to the Director-General of the World Health Organization.

I should be grateful if you would let me know what steps should be taken at the Conference with respect to the communication from the Government of Jamaica.

Very sincerely yours,
(Signed)
Abraham Horwitz
Director

Appendix II

COMMUNICATION OF THE CHARGÉ D'AFFAIRES OF THE EMBASSY OF JAMAICA IN WASHINGTON

Jamaican Embassy
2129 Leroy Place, N.W.
Washington D.C.
10 August 1962

Dr. Abraham Horwitz
Director of the Pan American Sanitary Bureau
1501 New Hampshire Avenue, N.W.
Washington 6, D.C.

Dear Dr. Horwitz,

I have the honor, on behalf of the Government of Jamaica, to make application for the membership of Jamaica in the Pan American Health Organization in accordance with Article 2-A of the Constitution of the Organization.

On the 6th of August 1962, Jamaica became an independent American State responsible for the conduct of its international affairs.

The Government of Jamaica is willing to assume all the obligations imposed by the Constitution of the Pan American Health Organization, and to comply with the provisions of the Pan American Sanitary Code as amended by the Additional Protocol of 1952. Further-

more, Jamaica is prepared to contribute, by means of a quota assessment, to the financial support of the Organization.

Before becoming independent, Jamaica was an Associate Member of the World Health Organization, to which the Pan American Health Organization is affiliated. In addition, for many years, through the Government of the United Kingdom, and subsequently through the Government of the former West Indies Federation, Jamaica has been associated with the Pan American Health Organization and has sent delegates to previous Conferences.

The Jamaica Government now wishes to become a full member in its own right.

I should appreciate the transmittal of this letter to the Governments of the Pan American Health Organization and to the President of the XVI Pan American Sanitary Conference for its consideration.

Yours faithfully,
(Signed)
V. H. McFarlane
Chargé d'Affaires

Appendix III

COMMUNICATION OF THE PRESIDENT OF THE XVI PAN AMERICAN SANITARY CONFERENCE

Minneapolis, 22 August 1962

Dr. Abraham Horwitz
Director of the Pan American Sanitary Bureau
Minneapolis, Minnesota

Dear Dr. Horwitz:

Thank you for your letter of today's date referring to the communication received from the Government of Jamaica requesting admission to membership in the Pan American Health Organization, together with the original of that communication which you enclosed.

In the opinion of the Chair, the communication of the Government of Jamaica should be distributed to the delegates as a conference document, in spite of the fact that the Governments have already been informed of its contents.

Further, the Secretariat is requested to prepare a note on the subject of the legal and regulatory considerations arising out of the request of the Government of Jamaica for admission to the Organization. After its approval by the Chair, you will perhaps be good enough to distribute the note, which should be drafted as soon as possible, to all the members of the General Committee. The Committee will consider the case and the Chair will then take appropriate measures to resolve the matter.

Very sincerely yours,
(Signed)
Dr. José Alvarez Amézquita
President of the XVI Pan American
Sanitary Conference

Appendix IV

TECHNICAL REPORT PREPARED BY THE SECRETARIAT

The Director has the honor to inform the Conference that he has received a letter dated 10 August 1962 from the Chargé d'Affaires of the Embassy of Jamaica in Washington, Mr. V. H. McFarlane, making application on behalf of the Government of Jamaica for membership in the Pan American Health Organization. The text of this letter was communicated to the Governments of the Organization by cable on 12 August and confirmed by circular letter on 13 August, and has also been transmitted to the President of the XVI Pan American Sanitary Conference.

In the absence of express provisions in the Basic Docu-

ments of the Organization establishing a procedure for the consideration by the Conference of this request, the Conference may wish to determine in what manner it would be appropriate to deal with it.

Without prejudice to such arrangements as may later be incorporated in the Basic Documents of the Organization, concerning the admission of new Members, it is thought that in this specific instance certain principles could be followed by the Conference in considering the request by the Government of Jamaica. The simple procedure outlined below would enable the Conference, should it so decide, to incorporate Jamaica into the Organization at this time and thus permit that country to participate forthwith in the inter-American health activities sponsored by the Organization and to benefit from and contribute to these activities.

The Government of Jamaica has already communicated in writing to the Director its formal request for membership in the Pan American Health Organization.

In so doing, the Government of Jamaica has intimated that it is willing to assume all the obligations imposed by the Constitution of the Pan American Health Organization and to comply with the provisions of the Pan American Sanitary Code, as amended.

The Government has further declared that it is prepared to contribute, by means of a quota assessment, to the financial support of the Organization.

This request has been transmitted to each of the Governments of PAHO.

Taking into account these preliminary steps, it is therefore suggested that an appropriate procedure could be the following:

1. The application for membership by Jamaica should be included in the agenda of the Conference as an additional item, in accordance with the provisions of Article 9 of the Rules of Procedure.

2. The Conference should examine the application in plenary session and vote thereon. In accordance with the provisions concerning voting, in the Constitution and in the Rules of Procedure, the application would be considered as approved when it has received the affirmative vote of a majority of the Governments present and voting.

3. After admission to membership, the Government of Jamaica would be officially notified by the Director and invited to be represented by its delegate in the Conference.

4. The Director would also notify the decision of the Conference to the Governments of PAHO.

The request by the Government of Jamaica, accompanied by these suggestions, is therefore submitted to the Conference for consideration.

Annex 2

X REPORT ON THE STATUS OF MALARIA ERADICATION IN THE AMERICAS [1]

Introduction

The Director of the Pan American Sanitary Bureau has the honor to present to the XVI Pan American Sanitary Conference the X Report on the status of malaria eradication in the Americas.

As has been the custom in previous years, the document presents first a summary of the status of the program in general and an analysis of the advances made in each country. There follows a discussion of several of the technical problems which are of importance, the implications these have for future progress, and the measures being taken or studied to solve them. Finally, a summary is presented of the cooperative efforts of the international agencies in the malaria eradication program, with details of the participation by PAHO/WHO. Because of the special significance of the XVI Pan American Sanitary Conference, comparisons are provided wherever possible of the conditions. Where figures for the entire four-year period merit analysis by the Conference, these have been included.

The data for the years prior to 1961 have been taken from previous reports of the Director. For 1961, the responses to a detailed questionnaire regarding malaria eradication activities in each country have been used, as well as the statistical reports which the majority of the programs submit each month to the Pan American Sanitary Bureau. These reports cover the specific topics of spraying operations, epidemiological evaluation activities, and movement of personnel. Special technical reports regarding entomological studies are also presented by countries when appropriate.

I. STATUS OF THE MALARIA ERADICATION PROGRAM

General Picture

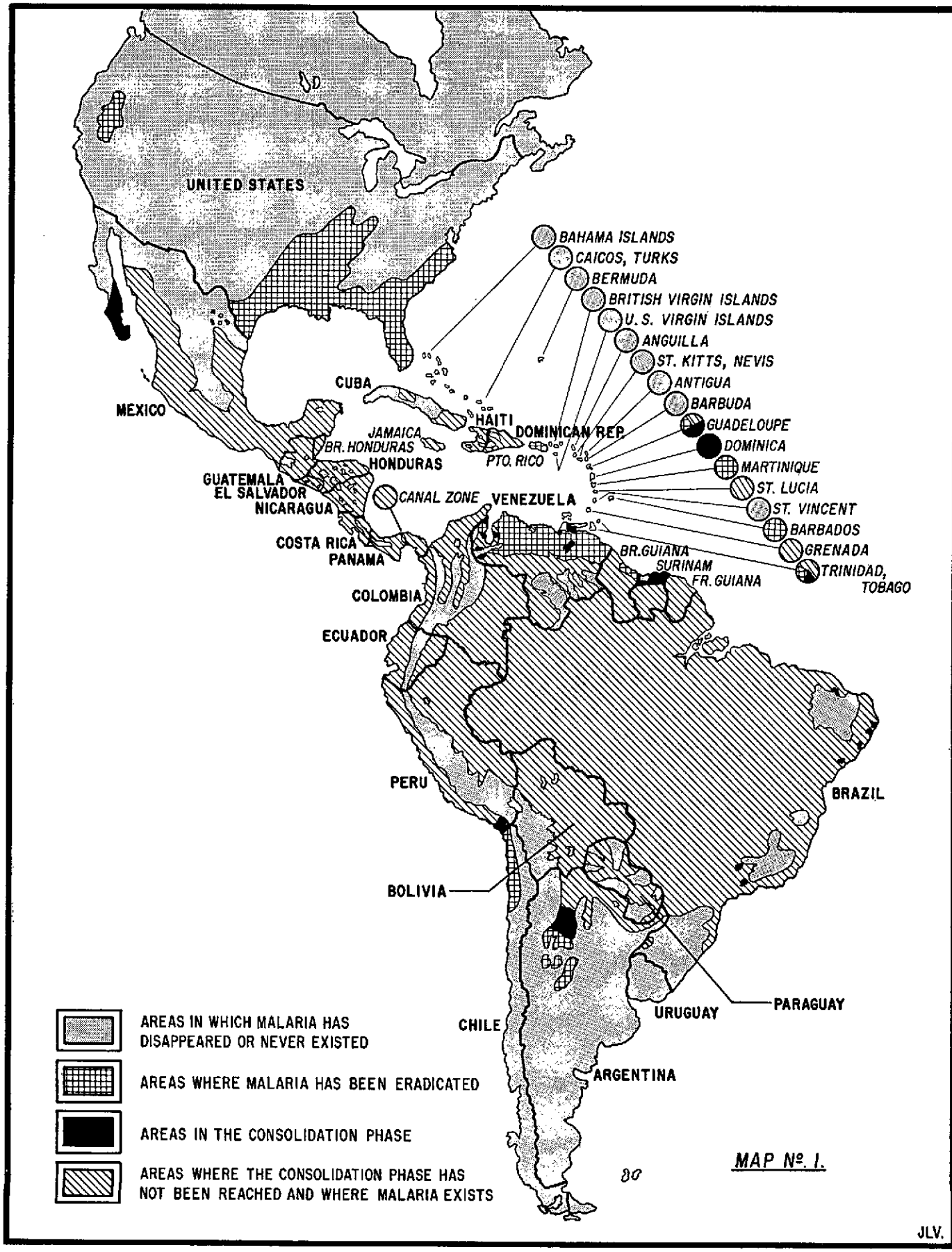
Sustained progress was maintained toward malaria eradication in the Americas during 1961 in most instances. Of particular importance were the increases over 1960 of areas and population entering the consolidation phase. In Mexico, Peru, Venezuela, Guadeloupe, and Jamaica additional areas were placed in the consolidation phase, while in Bolivia the first area was entered. Argentina and Venezuela registered increases in the areas from which malaria eradication is claimed.

With reference to the entry of areas in the attack phase, in Brazil a reorganization of the malaria service and adequate and timely budgetary support permitted greatly expanded activities over those of 1960. The preparatory phase activities were extended to all parts of the country, as geographical reconnaissance operations were initiated and epidemiological evaluation began even in advance of spraying. By 1964 it is expected that all remaining malarious areas of Brazil will have been incorporated into the attack phase.

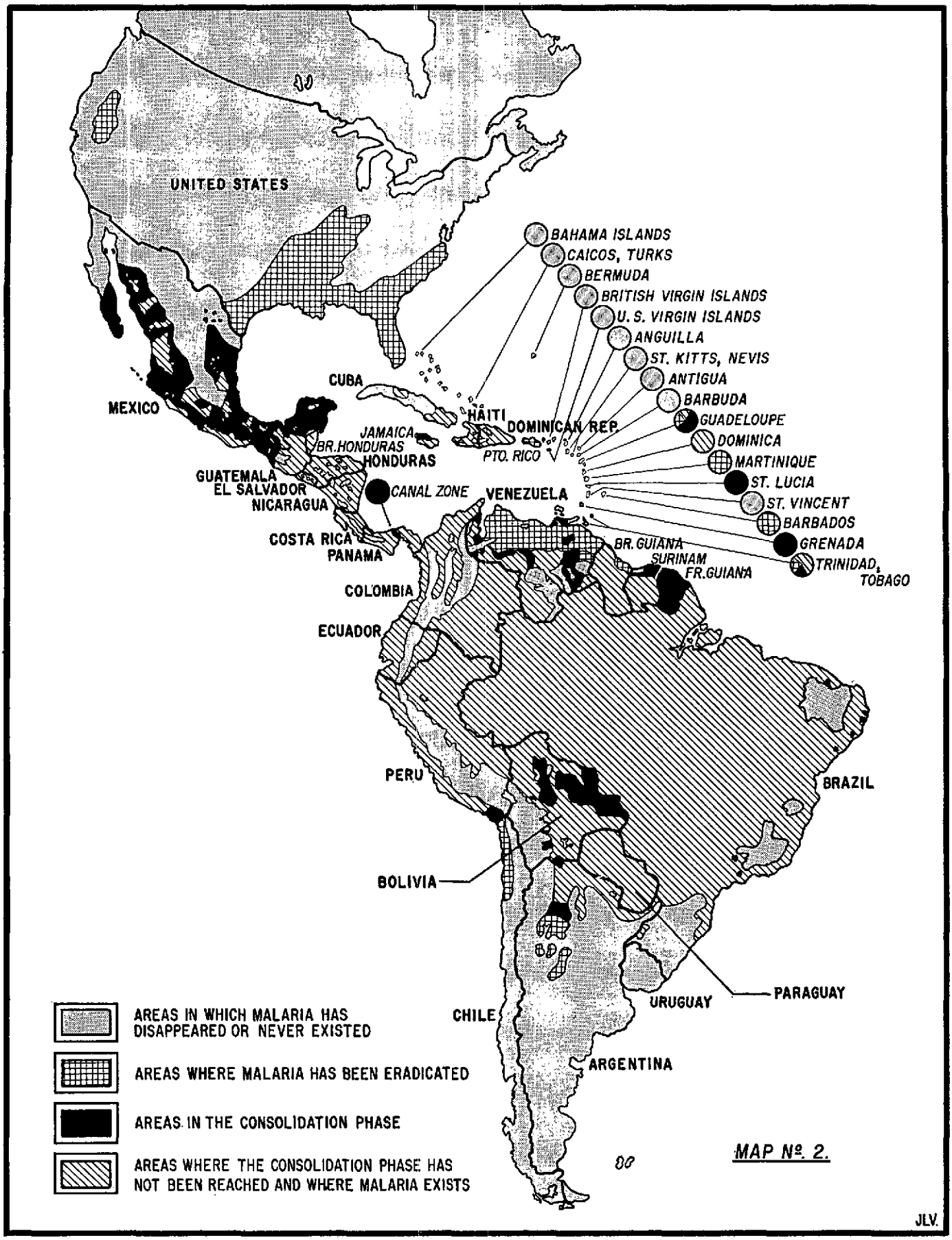
Preparatory phase activities were completed in Cuba and Haiti during 1961, and these countries prepared to enter the attack phase in 1962. In Paraguay, continued evidence of malaria transmission in areas previously thought free of the disease provoked a suspension of the attack phase during 1961 so that all efforts could be devoted to preparatory phase activities. In the Dominican Republic, financial shortages impeded the inclusion of all areas in the attack phase; this is planned for 1962.

The pattern of malaria eradication programs becomes clearer with each year's experience. Because of the nature of the disease, the campaign to eradicate it requires an organization of highly skilled workers, provided with administrative techniques of great flexibility and with priority in the allocation of funds in spite of the demands of other agencies of government. Where effective public health leadership has obtained such essentials for the malaria service, the personnel can be well-trained, the spraying cycles completed on schedule with a minimum of logistical difficulty, and the epidemiological evaluation operations developed so that the dis-

[1] Document CSP16/20.



STATUS OF THE MALARIA ERADICATION PROGRAM IN THE AMERICAS, 31 DECEMBER 1958.



STATUS OF THE MALARIA ERADICATION PROGRAM IN THE AMERICAS, 31 DECEMBER 1961.

appearance of malaria from wide areas can be measured, and the limits and magnitude of the remaining "hard core" problem areas defined and studied, and solutions suggested. Unfortunately, in a few programs organizational or administrative deficiencies still exist; under these circumstances the malaria services encountered great difficulty in completing the scheduled plan of operations, and purely technical problems remain obscured by a cover of continuing transmission permitted by such deficiencies.

As problem areas are disclosed, the classical malariological studies reappear in their rightful place in malaria eradication, supplemented by newer techniques for quantitative measurement of the factors involved in persistence of transmission. The Organization collaborates in a number of such studies, and increased activity in this field is foreseen for the future.

Pilot studies of auxiliary means of interrupting transmission were carried out during 1961 in a number of areas. Larviciding was employed in Mexico, Guatemala, and Nicaragua, among others, while mass distribution of antimalaria drugs was performed in a limited area of the coastal plain of El Salvador. From these and other studies now under way, important information regarding techniques, costs, and effectiveness is being obtained for wider application to other problem areas in other countries. The final answer in each instance must depend upon the local conditions, and it will be the continuing task of the Organization to assist in the adaptation of proven techniques for the final elimination of the disease.

Extent of the Problem

At the end of 1961, the population estimated to be living in the originally malarious area of 16,028,976 square kilometers stood at 147,292,000. Revisions in the data regarding territorial extension of the malarious area have been made for Brazil, Mexico, and Paraguay in some magnitude; minor alterations have been recorded for Bolivia, Cuba, Guatemala, the United States, French Guiana, and Surinam. As regards the figures for population and area distribution by phase, Argentina and Venezuela reported important increases in the maintenance phase, that is, malaria eradication claimed. In Venezuela, most of the area has already been registered by the Organization. Details of the population and area distribution are given in Tables 1 and 2, while Table 3 compares the percentage distribution by area and by population in accordance with the status of the program for the years 1958 and 1961.[1]

Particularly noteworthy are the figures for the consolidation phase, in which the population increased to 17,879,000 in 1961, a rise of 77 per cent over the 1960 figures. As compared with the figures for 1958, there has been a rise of more than eightfold in the population of this phase of the program, a reflection of the steady progress obtained in many areas over the last three years.

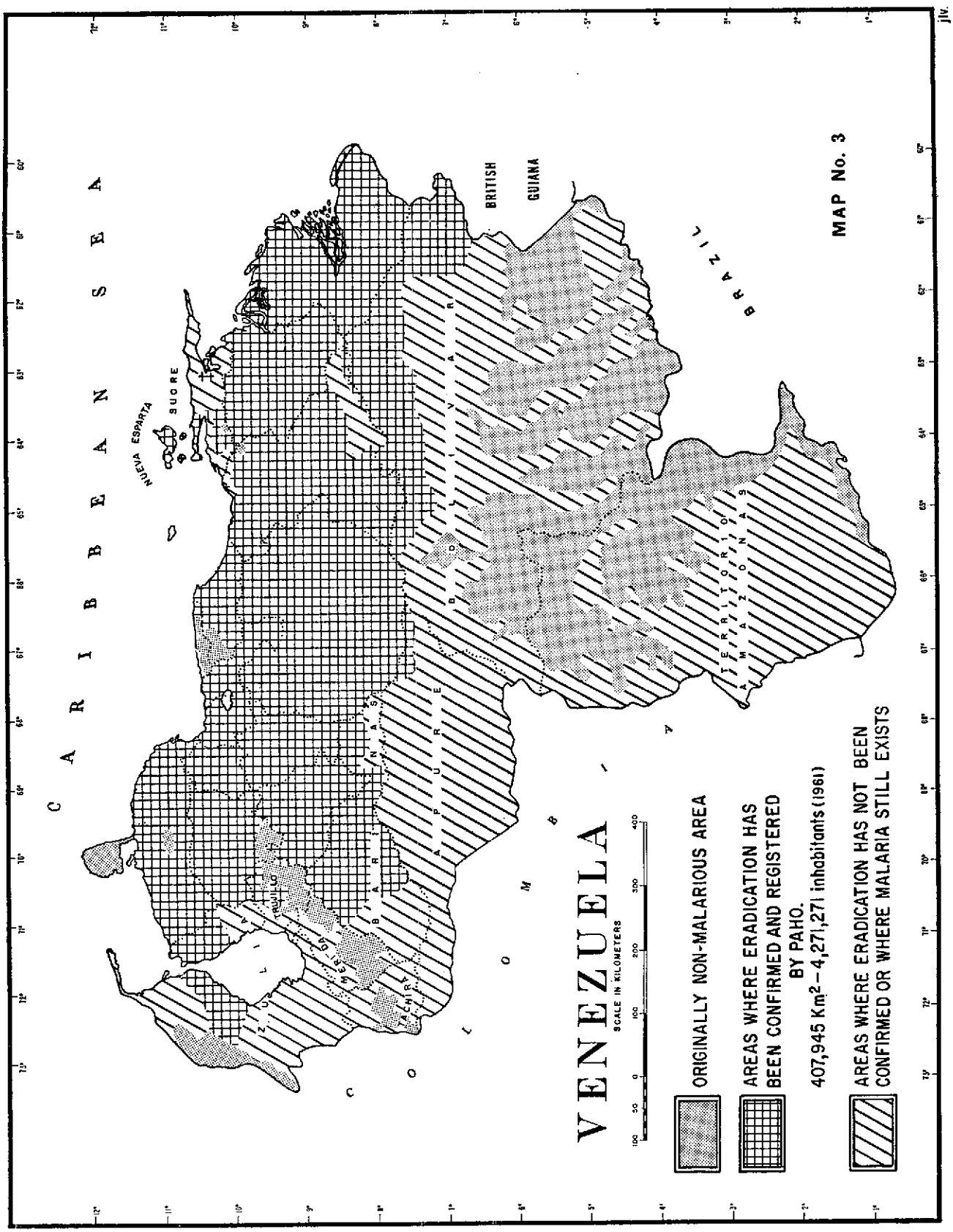
Finally, data are presented in Map 3 regarding the "Register of Areas Where Malaria Has Been Eradicated," for which Venezuela is the first entry. During 1962, several programs will complete the consolidation phase, and it is expected that future reports will record the measure of increase in the Registry as the hemisphere-wide effort moves surely toward its goal.

Field Operations

Statistics on the personnel employed in malaria eradication programs are presented in Tables 4 to 8. Table 4 presents a summary of personnel employed in the broad categories of spraying operations, epidemiological operations, administration and others, and transport for the years 1958-1961. The shift in emphasis toward epidemiological evaluation operations is evident as the attack phase progresses and more and more programs approach and enter the consolidation phase. While personnel employed in spraying operations declined in 1961 from the peak number of 1960, the number employed in epidemiological operations reflects a steady increase during the four-year period, and more than twice as many were employed during 1961 compared with 1958. Particularly striking increases are noted in the evaluator and microscopist groups.

Tables 5 to 8 give comparative figures for each category and for each country for the years 1958 and 1961. In Table 5, for spraying operations, for example, a reduction in personnel is seen in Colombia, Mexico, and Venezuela as spraying is withdrawn from large areas. On the other hand, programs such as those in Ecuador, El Salvador, Guatemala, Honduras, and Nicaragua report increases in 1961 over the 1958 figures. The attack

[1] All tables mentioned in the text appear at the end of this Annex.


C A R I B B E A N S E A
NUEVA ESPARTA
SUCRE
BRITISH GUIANA
BRAZIL
TERRITORIO AMAZONAS
VENEZUELA
SCALE IN KILOMETERS
100 50 0 100 200 300 400
ORIGINALLY NON-MALARIOUS AREA
AREAS WHERE ERADICATION HAS BEEN CONFIRMED AND REGISTERED BY PAHO.
407,945 Km² – 4,271,271 inhabitants (1961)
AREAS WHERE ERADICATION HAS NOT BEEN CONFIRMED OR WHERE MALARIA STILL EXISTS
MAP No. 3

phase was begun in these programs using annual cycles of dieldrin; the subsequent appearance of resistance and the shift to DDT on semiannual cycles required increases in spraying operations personnel.

In Table 6, for epidemiological evaluation operations, increases in personnel are shown for almost all programs. Epidemiological evaluation sometimes has not been expanded as rapidly as desired since limited fiscal resources were concentrated on spraying operations during the early years of the attack phase. The comparison of figures from 1958 and 1961 reveals, however, that increased emphasis is being given to surveillance activities, as programs achieve greater financial stability and as the attack phase moves to a close.

Comparative figures are given in Table 7 for administrative personnel, and in Table 8 for personnel employed in transport activities. In general, personnel in these categories comprise 19 and 9 per cent, respectively, of all employees engaged in malaria eradication programs.

The types and numbers of transport in malaria eradication programs are shown in Table 9. Increases over the numbers employed in Brazil in 1960 reflect the increased field operations there, as the preparatory and attack phase operations expand. In Colombia and Ecuador, the augmented use of saddle and pack animals over previous years is due to adjustments in the types of field squads being employed. In general, the means of transport in a single program do not change materially from year to year of the attack phase, although programs in the consolidation phase are relying more upon lighter vehicles such as jeeps, and motorcycles and bicycles where possible, as the requirements for transport of spraying squads diminish.

Accomplishments in spraying operations are reported in Tables 10 and 11. A reduced volume of operations is shown for Bolivia, Mexico, and Jamaica as the consolidation phase is entered in many areas. In the Dominican Republic, financial difficulties impeded the achievement of total coverage, while in Paraguay the attack phase was suspended in March 1961. Insecticide consumption per house showed minor variations in several programs, as did the efficiency of spraymen, as measured by the number of houses sprayed per man per day. As shown in Table 11, the percentage of houses not sprayed did not alter greatly from previous years in a number of programs, and Costa Rica continues to report full and complete coverage. As the consolidation phase was entered along the coast of Surinam, however, and attention focused on the problem in the interior, the percentage of houses not sprayed increased. In this connection, special efforts in health education are being made in Surinam, and it is hoped that with these the situation will improve.

Beginning with the present report, case-detection activities in the Americas are separated by attack and consolidation phase, so as to provide a more detailed review of the activities during the latter portion of the campaigns, and to provide information regarding the classification of such cases as are found.

Table 12 presents data on case-detection during the attack phase. The percentage of positivity found continued to decline in all programs save three. In Mexico, an increase in numbers and in percentage positive reflects an intensive sampling of "hard core" problem areas still in the attack phase. In Paraguay, extension of case-detection activities to areas thought free of the disease has disclosed transmission within those areas, while the increased positivity is influenced by the suspension of spraying operations in March 1961. While the increase in Surinam is slight, it is explained by more intensive sampling in the still malarious interior. This table does not reflect the true malaria situation in every country because some countries have large areas with few cases and persistence of transmission in others.

Consolidation phase activities are summarized for those programs in this phase in Table 13. Inasmuch as an essential part of the epidemiological activities during this phase refers to investigations of cases to determine the origin of the infection, data are presented on this aspect of the work. In Mexico, the large number of indigenous infections found during the first year of consolidation in many areas has resulted in reconsideration of some of these during 1962; spraying operations may have to be reinitiated in zones close to the areas that still have transmission and are in the attack phase.

The comparative advantages of passive case-detection versus active case-detection are the subject of discussion, and the total number of slides and the positivity obtained from each method are only two of the many factors involved. However, because of the interest in these indices of comparison, data are presented in Table 14 regarding them, for both attack and consolidation phases combined.

In general, while passive case-detection results in fewer slides per notification post per month than can be produced by an active evaluator, the percentage of positive slides is higher. The effectiveness of the method remains to be tested in large areas in the consolidation phase, where a general disappearance of malaria may reduce the number of people seeking treatment. However, the data for Grenada and St. Lucia, for example, both of which have been in the consolidation phase for over two years, suggest that the passive case-detection method may be a most useful adjunct during consolidation.

Table 15 summarizes the number of slides examined throughout the Hemisphere for the years 1958 through 1961, and indicates the number and per cent of positives. While without epidemiological significance, the data reflect the magnitude and the increasing importance of the case-detection work in malaria eradication programs in this Region.

Table 16 shows the expenditures made by each country on its malaria eradication programs. For the most part, the cost of the program estimated for 1962 is higher than for any previous year in spite of reductions in spraying operations in a number of countries. All of these savings, and more, had to be put into greatly expanded epidemiological evaluation (see Table 6), which heretofore had been woefully underfinanced. Despite the increases shown in this table, it is emphasized that many programs are not yet adequately financed, especially those with the highest amount of persisting transmission, which requires additional measures of attack such as mass drug treatment or larviciding.

In certain countries in which the operations of spraying and epidemiological evaluation were adequately financed during the attack phase, as the consolidation phase began it was possible to release funds for other purposes.

II. SPECIAL TECHNICAL PROBLEMS

Insecticide Resistance in Anophelines

The majority of countries reduced the amount of insecticide-resistance testing in 1961 as compared with 1960, a trend which seems entirely reasonable in view of the comparative stability which the phenomenon has shown and the growing body of knowledge on the occurrence of resistant strains. Brazil, Guatemala, and Mexico increased the number of their reports so that the number of tests reported fully to PASB actually changed very little, totalling 442 locality species tested. A considerable number of tests were repeat tests in the countries which reported many. Usually, little change was seen in either susceptibility or the degree of resistance. In some instances there was discovered a new locality with higher resistance than had been encountered before, but this was not the rule in areas where a sizeable number of tests had been done previously.

In only one instance was a new species involved, *A. nuñez-tovari*. In no case was the new resistance widespread. It remains to be seen whether the resistance of *A. albitarsis* to DDT is actually impeding the realization of eradication in parts of Colombia. It is doubtful that the other instances are of such a degree, or in such vectors, as to influence the program significantly. The resistance to DDT noted in the Dominican Republic is extremely early, but the nature of the tests indicates that it is a true case of beginning resistance. It is not expected to increase appreciably in the course of the campaigns, unless large-scale agricultural usage intervenes, such as spraying of cotton by airplanes. In the absence of selection pressure, there has been seen in a number of places a tendency for the percentage of DDT-resistant individuals in a population to decrease as time goes on.

Five new findings of resistance in countries were noted—four to DDT, one to dieldrin—as follows:

Country	Species	Insecticide	Per cent resistant	Investigator
Brazil	*A. strodei*	DDT	35	Correa and Pereira
Colombia	*A. albitarsis*	DDT	80	Ferrer and P. E. Suárez
Dominican Republic	*A. albimanus*	DDT	3 *	G. Ramalho
Venezuela	*A. nuñez-tovari*	DDT	20	Noccrino and Méndez
"	*A. pseudopunctipennis*	Dieldrin	75	Blázquez and Pintos

* Regression line is that of resistance, not vigor tolerance.

In Mexico, *A. pseudopunctipennis* showed a few survivors to 4%-DDT in some one-hour exposures. Thirteen localities showed from 1 to 16 per cent of this species surviving 4%-DDT for one hour. Some of these were at first thought to represent early resistance, but in the extreme case, with 16 per cent survivors in the one-hour test, a full battery of tests at two hours gave complete confirmation that this was vigor tolerance. All specimens were killed by exposure to 4%-DDT for two hours, and a steep regression line was observed. This is not considered to be an operationally serious change and it is one that normally reverses itself with changes of season or other factors.

The total number of anopheline species in the Americas which have been found to be resistant one or more times is now ten. The species are:

A. albimanus
A. albitarsis
A. aquasalis
A. neomaculipalpus
A. nuñez-tovari
A. pseudopunctipennis
A. punctimacula
A. quadrimaculatus
A. strodei
A. triannulatus

The first discovery of insecticide resistance in each country is shown in Table 17, which also presents the species, the insecticide, and the maximum percentage of resistant individuals.

Supplementary Methods of Attack

In those areas where DDT residual spray alone is failing to halt transmission, complementary methods of attack must be used. DDT resistance remains a serious problem in El Salvador, Guatemala, and Nicaragua. It is more limited in area and less in degree in Honduras. During 1960 the degree of DDT resistance measured in El Salvador, both by susceptibility tests and bioassay tests, was such as to indicate that considerable killing could be accomplished during much of the six-month cycle, even in the presence of fully developed resistance. In 1961, both tests have showed a distinctly greater tolerance for DDT in the maximally resistant strain.

This change has dictated additional investigations of the use of the more expensive insecticide, malathion, and of the use of larvicides and mass drug treatment. Malathion as a residual spray was tested in El Salvador in 1959, and was found to have good killing power against resistant mosquitoes, but only a short life on alkaline or sorptive mud walls. Its effects on the incidence of malaria were not measured at that time. Its duration, as judged by the bioassay tests, might be expected to vary from less than two to more than six months, depending on the type of material on which it was sprayed. The duration of its activity in slowing or halting transmission of malaria is more important, and this is being studied both in Nicaragua and El Salvador, where DDT resistance is at the maximum.

The first application of malathion to an entire area in El Salvador was in an area of high transmission, but the insecticide was applied only in November 1961, more or less coincidentally with the cessation of rains. The dose was only 1 gm/m^2. Bioassay tests were done regularly after that date. As expected, freshly applied whitewash was very deleterious to malathion, no doubt because of its alkalinity. Mud walls, which were very common, usually inactivated it in a few weeks, basing conclusions on a one-hour exposure to the insecticide deposit. The effect on malaria incidence could not be evaluated except to say that some transmission reappeared in sprayed areas in less than six months.

The second spraying with malathion was applied in May 1962, also 1 gm/m^2. It was applied just before the start of heavy rains. Complete investigation was done of every case notified since January 1961 in both test and control areas. The effects of 1 gm/m^2 under most adverse conditions should be observable in the months of June through August 1962. Respraying with 2 gm/m^2 is planned if transmission reappears in the 1 gm area in less than three months.

A large-scale study was begun in August 1961 at one sugar plantation in Nicaragua. Here 2 gm/m^2 was applied. Initial results were suggestive only. It is planned to extend the trial to three plantations using malathion at 2 gm/m^2 every four months for one year. Epidemiological observations will be carried out during more than a year to observe the effects of this measure. Special drug treatment programs recently employed will be suspended during this period.

1. Larviciding

Among the complementary or possibly substitute methods of attack on malaria transmission, larvi-

ciding has a place, its relative economy generally depending on large concentrations of people and limited breeding places. In the city of Managua, the chief breeding places are along the shores of the lake. This area appears to be one place where larviciding might afford the most economical protection on a "per capita" basis. A large-scale use of Paris green is now planned for this area. Larviciding was attempted in two other problem areas in Nicaragua but had to be suspended, owing to lack of funds for local costs.

Larviciding with chlorthion and Baytex (organophosphorus compounds) was found to be extremely effective in Guatemala during 1961 in the Sanarate Valley, where DDT resistance is very high, and in the Finca Mocá epidemic area. A field trial was made in one of the problem areas on the Pacific slope in Mexico, but the area was not well-suited to this method, the population was sparse, and the breeding areas were widespread.

Larviciding as a complementary attack is planned or under way on a much larger scale in problem areas in both Guatemala and El Salvador in 1962. To evaluate the suitability of larviciding for any given situation will require new knowledge as to costs of various methods and criteria for estimating the requirements of each project. This experience is now being gained in these two countries. More information is given under the section on Project AMRO-196.[1]

2. Complementary Attack with Drugs

Two methods of using drugs as a complementary attack on malaria were employed in 1961.

The first is the use of special treatment methods to produce radical cure of all *vivax* cases where relapses seem to be a prominent cause of continuing transmission. Very marked reductions in malaria incidence were produced in problem areas in Costa Rica and Nicaragua, and to a lesser extent in Guatemala and Honduras. Various drugs and schedules were employed. This method seems to have helped to give the *coup de grace* to malaria in British Honduras and Jamaica, where it was especially employed in the final stages in cleaning up the last focus.

Primaquine is the preferred drug, given either in a daily dose for 14 days, or a weekly dose for eight weeks. Methods of supervision using voluntary collaborators were tried in Costa Rica, Honduras, and elsewhere, but not always with the desired efficiency. When fully supervised, as has been attempted in Nicaragua and Guatemala, radical treatment can become rather expensive in rural areas.

3. Mass Drug Treatment

There are several indications for mass drug treatment (collective treatment), and this method was used and is planned for future use on an increasing scale wherever there are problems.

In Trinidad during 1961, monthly treatment with chloroquine plus primaquine (started in 1959) was continued; house-to-house visits were made among a population of 40,000 persons, to overcome the problem of outdoor-biting *A. (Kerteszia) bellator.* The rate of acceptance was very low. Initially, only 70 per cent of the people in rural areas and less than 50 per cent in towns took the drugs offered, and this dropped as low as a 30 per cent over-all average during most later months. Nevertheless, the transmission potential was so low that new cases of malaria practically ceased after the third month of drug administration (March 1960). The last two autochthonous cases were found in September 1960. There was one case imported from Africa in 1961, and the program was terminated as completely successful at the end of 1961.

In British Guiana, 87 cases of *vivax* malaria were found in a 20-mile extension on both sides of the lower Demerara River near Georgetown, in an area where malaria had been eradicated since 1955. The outbreak was first discovered in late July 1961. It was successfully attacked by spraying and by mass chemotherapy.

This episode constitutes the first major event of a reinvasion of a cleared area and a successful counterattack. However, the reinvasion was not a vigorous one. Originally, the area had been highly malarious, due to *A. darlingi,* but this species was eradicated in 1955 by DDT residual sprays, and it has not returned. The recent outbreak totalled only 87 recognized cases and was apparently due in part to an unusual density of *A. aquasalis.*

Mass treatment was also used in the form of chloroquinized salt in the interior of British Guiana and in the Amazon Valley of Brazil during 1961. In British Guiana, a very tight control should have been possible. A good processing plant was built

[1] See p. 48.

for adding chloroquine to salt, and clear laws were requiring the treatment of all salt destined for the interior. However, tests of the salt found in houses has shown only about 90 per cent with chloroquine during the past year. In recent months a small number of photo-sensitive skin reactions (about 1:1,000) have been reported, almost all in light-skinned Amerindians. These dermatitides are apparently self-limiting and cases recover equally fast whether chloroquine is continued or stopped. In three of the most severe cases (1:15,000), at the height of the skin reactions, some impairment of vision occurred, which has not cleared up. This is now under study. This type of reaction has not been reported before, and may be a racial peculiarity.

After more than one year, treated salt has not yet reached all localities, and reduction in malaria, while excellent in some areas, is not as good as expected in others.

In the Amazon Valley, the distribution of chloroquinized salt was continued to the end of 1961, when it was terminated. A special study was made during the last four months of the year to evaluate the results, and particularly to look for the possible occurrence of chloroquine-resistant strains of malaria parasites. The voluminous data collected or produced in the evaluation are still being analyzed, but it is unlikely that a clear measure of the effectiveness of the program will be possible owing to lack of data before the program started. In a few localities, cases were encountered in which the parasite, *P. falciparum,* showed an elevated tolerance for chloroquine. This trend, if continued, would destroy all chance of success with chloroquinized salt. Accordingly, it is planned to conduct a spray campaign in the Valley.

Mass treatment is useful not only in cleaning up residual foci in the final stages of attack, and recrudescent foci during consolidation or maintenance phases; it must be considered as a possible complementary method in larger areas where house spraying and routine presumptive treatment of fever cases, with or without attempts at radical treatment of proved *vivax* cases, fail to halt transmission. The cause of failure may be any one or a combination of several factors.

In El Salvador a special study was made to develop efficient methods for collective administration of drugs in an area of high transmission, and to evaluate their efficacy under field conditions. The serious problem areas of El Salvador present not only the factors of irritability and resistance of mosquitoes to DDT, but also great movement of transient workers, many of whom have precarious houses or no houses at all. The amount of outdoor biting, and the great mobility of transient workers, especially in the cotton-picking season, called for methods of attack that would reach this transient population. To meet this problem, a field trial was conducted in the coastal plain, where persistent malaria was at its highest level and where cotton growing accounted for the largest number of poorly-housed transient workers. Treatment was given at two-week or four-week intervals for 14 or seven cycles, respectively, over a period of six and a half months when transmission was high.

The treatment used was a combined tablet of chloroquine 150 mg, plus primaquine 15 mg, sugar-coated. Three such tablets were given to adults, children receiving proportionally less according to average weights for each age group. All treatments were administered by paid employees especially trained to take histories, make blood slides, and keep records. Surveys were done periodically in both treated and control areas.

A very prompt and marked decline in cases occurred, so that after the third cycle practically all cases were either in new arrivals or in those who missed two or more treatments. *P. falciparum* disappeared entirely. The incidence dropped from 70 per 1,000 to 1 per 1,000, and to zero in those who received more than six doses. With adequate dosage, two-week cycles were found very effective for high-incidence areas, and four-week cycles equally so where transmission potential was low.

The movement of persons registered in permanent housing was found to be 2.7 to 3.7 per cent of the population entering and leaving the area studied, every two weeks. Since about 30 to 50 per cent of the people were absent from home during the visit of the distributor, only an average of about 60 per cent could be reached through house visits alone. Of those absent, two thirds or more were encountered or treated at the haciendas or fish canneries where they worked, or in school. Treatment in haciendas was a necessary complement to house visits, and was usually much more complete, as well as more efficient in respect to persons treated per man hour. Schools and the fish canneries were likewise both necessary and efficient points of administering treatment. Reactions were seldom a cause for refusal,

and none were serious. The sugar-coated tablet was well accepted by all ages, and has been standardized for future use.

It has been established from this study that a method is available for eliminating both *falciparum* and *vivax* parasites from the human reservoir in a relatively short time, given an adequate percentage of persons receiving at least a minimum number of doses. This percentage will vary depending on the transmission potential.

The time to reach the necessary percentage of people with the minimum number of doses will depend, of course, on the frequency of cycles of treatment, but will also depend very much on the percentage of people treated or missed each cycle, on the finding and treating in the following cycle of those persons who miss one treatment, and above all, on the prevention of importation of infected persons from other areas.

Mass treatment as a complementary method of attack will be given a very large field trial in a problem area in Mexico during 1962, in preparation for its use wherever necessary in the future. It is also to be used as a complementary attack in Nicaragua, in Guatemala, and in six problem foci in Costa Rica.

III. FIELD RESEARCH PROJECTS OF PAHO MALARIA ERADICATION BRANCH

Epidemiological Study Team (AMRO-220)

The largest and most important of the field research projects is the Epidemiological Study Team, which began its comprehensive malariological studies in the problem area on the coastal plain of El Salvador in April 1961. The refractory malaria in El Salvador obviously derives from the intensive and extensive use of DDT and other insecticides against insect pests of cotton plants.

The studies include: a detailed description of the human habitations, which are characterized by highly fenestrated walls; the malaria parasite rates; and the ecology of *A. albimanus,* especially in relation to man.

Regardless of whether or not they are susceptible to DDT, the local population of *albimanus* has been observed to be in the habit of entering houses, of feeding on man inside the houses, and then of leaving the houses, usually without acquiring a lethal dose of insecticide from the residues on the sprayed walls. In addition, *albimanus* females bite man very frequently outside houses, especially in the early hours of the night.

The observations that have been made in the year-long study provide an explanation of why the residual spraying of the houses of the area with DDT, done in satisfactory fashion once every six months, does not interrupt the transmission of malaria. Furthermore, they show that it is essential to use additional methods of malaria eradication if the transmission of malaria is to be interrupted in problem areas where malaria is refractory.

Insecticide Testing Program (AMRO-196)

The original objective of this program was to determine the optimal dosage and spraying interval for DDT as a residual insecticide, on various types of wall surfaces. Similar studies were to be made on any new residual insecticide that became available. Recently the activities of the program in El Salvador have been enlarged to include a Pilot Study of Larviciding, in order to evaluate mass larviciding as an additional method of malaria eradication to use in problem areas where there is refractory malaria.

The WHO bioassay test for insecticidal residues on wall surfaces has been used in the study of DDT dosages and spraying intervals, and to observe the activity of malathion residues in experimental areas. In this bioassay test, live mosquitoes are used to assay the activity of insecticidal residues on wall surfaces.

Unfortunately, the test is not designed to provide precise information about the effect that insecticide residues have upon wild mosquitoes that enter sprayed houses in search of a meal of human blood. While the entomological information obtained is useful, the definitive assessment must be the parasitological one—the examination of the blood of the residents of the area for malaria parasites.

Two separate Insecticide Testing Teams have been at work, one in El Salvador, and the other in the eastern lowlands of Bolivia, at Santa Cruz de la Sierra. The present program of studies in El Salvador has ended and the results are being evaluated. The studies in Bolivia are to terminate in September 1962.

The studies in Bolivia were done in houses that had never been sprayed with DDT or any other residual insecticide. The test mosquito was *A. pseu-*

dopunctipennis, of a population that was completely susceptible to DDT. Four types of wall surfaces were studied—unpainted wood, thatch, mud, and white-wash—on all of which it was found that DDT was more effective at two grams per square meter than at one gram. However, a recommendation as to whether or not all subsequent applications, at intervals of six months, need to be at the rate of two grams must await the completion of the year-long study.

The studies in El Salvador have been more extensive and more varied, and have involved malathion as well as DDT. The mosquitoes used in the bioassay test were *A. albimanus*, of two strains, one highly DDT-resistant and the other almost completely DDT-susceptible.

Using DDT-susceptible mosquitoes, it was found that the DDT residues on wall surfaces of wood and thatch that had been sprayed many times with DDT—often they were white with DDT residues—remained highly active for 70 weeks after the last spraying. The activity of residues of similar applications on adobe and mud declined steadily to an unsatisfactory level during a similar period of observation. At week 72, an application of DDT at two grams per square meter caused a marked but transient increase in activity of adobe and mud surfaces.

In a group of houses sprayed once with DDT at two grams per square meter, and followed for 32 weeks, the residues gave satisfactory activity on wood and thatch. In this group, sorptive mud was compared with nonsorptive (or less sorptive) mud. The results were unsatisfactory on sorptive mud but apparently satisfactory on the nonsorptive.

The studies with DDT-resistant *albimanus* involved malathion as well as DDT. Though these mosquitoes are highly resistant to DDT they can be killed by it, after forced contact with it under the conditions of the bioassay test.

The activities of DDT residues in houses that had been sprayed once with a target dose of two grams of DDT per square meter were compared with those in houses that had been sprayed many times. Four types of wall surfaces were studied: wood, thatch, adobe brick, and mud. On wood and thatch there were relatively small, but still definite, differences between the two groups, indicating accumulation of DDT, while on mud and adobe the results were about the same whether or not the walls had been previously sprayed.

The two groups of houses were followed for 12 months, through two DDT spraying cycles. Residues on wood and thatch surfaces that had been sprayed only twice were found to be as active as those on surfaces that had been sprayed many times. The rate of loss of activity, on wood and thatch, was observed to be relatively slow.

The malathion studies were done on wall surfaces in houses that had been sprayed many times with DDT, the malathion being applied at one gram per square meter, in a 50% water-wettable powder. The results confirmed the previously published studies done in El Salvador showing that the effective duration of malathion was short, a matter of two to three months at the most, and this only on wood and thatch. At 14 weeks, using one-hour exposure periods, no difference was found between the surfaces sprayed with malathion on top of the residues of many DDT sprayings, and those with only the residues of DDT.

IV. INTERNATIONAL COOPERATION

Table 18 shows the distribution of PAHO professional and technical staff assigned to the different countries.

Table 19 shows the number of fellows trained at international centers for work in programs of their own Governments. The number of trainees has been sharply reduced in 1962 because the countries, relatively speaking, are adequately staffed, with the exception of Brazil. In Brazil the program is being developed by stages and most of the personnel will be trained in that country at the School of Hygiene and Public Health in São Paulo.

Table 20 shows the number of fellowships the Bureau granted for study travel in malaria eradication, and their distribution by countries from 1958 through 1961. Here it can be seen that this type of in-service training is still very useful, particularly as it affords an opportunity for active participants in a country program to visit other operations and observe special procedures which may be well developed in another country before being adopted in their own country.

Table 21 indicates the kind and amounts of supplies and equipment provided by PAHO because these items could not be secured from any other source.

Table 22 shows the kind and amounts of drugs provided by PAHO and their distribution during the four-year period 1958-1961.

Originally supplied for use in case-detection programs, the amount of drugs used for radical treatment has been on the increase since 1960. Beginning in 1961, PAHO began supplying certain countries with a combined sugar-coated tablet of chloroquine and primaquine for mass drug treatment.

Table 23 shows the amount and source of international contributions to the malaria eradication program.

The diversity of countries aided by each international agency is well shown in Table 23. Over the past four years PAHO has cooperated with 28 country programs, of which WHO/TA has contributed to 12, UNICEF to 23, and AID to 11. Although Governments are the largest contributors, it can be seen that the international contributions are not inconsiderable, and taking into account the number of country programs to which they contribute, these international organizations play a crucial part in the hemispheric eradication program. The wholehearted cooperation exhibited by each international agency with the various Governments and with each other has played a significant role in the orderly progress of the campaign.

Table 1—*Status of Malaria Eradication in the Americas, by Population, 1958-1961*[a]

(*Population in thousands*)

Country or other political unit	Total population		Population of originally malarious areas									
			Total		Malaria eradication claimed (maintenance phase)		Consolidation phase		Attack phase		Preparatory phase	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958[b]	1961
Argentina	20,256	21,746	2,289	2,363	256	924	743	41	537	1,398	753	–
Bolivia	3,305	3,538	1,116	1,250	–	–	–	461	1,116	789	–	–
Brazil	63,102	70,528	33,035	36,957	3,171	3,622	–	4,000	–	3,831	29,864	25,504
Canada	17,048	17,814[c]	–	–	–	–	–	–	–	–	–	–
Chile	7,314	7,802	117	125	117	125	–	–	–	–	–	–
Colombia	13,522	14,446	9,787	10,188	–	–	–	(*d*)	9,787	10,188[d]	–	–
Costa Rica	1,072	1,225	345	409	–	–	–	–	345	409	–	–
Cuba	6,466	6,827	---	1,836	---	–	---	–	---	–	---	1,836
Dominican Republic	2,791	3,137	2,418	2,552	–	–	–	–	2,418	1,276	–	1,276
Ecuador	4,007	4,743	1,993	2,227	–	–	–	–	1,993	2,227	–	–
El Salvador	2,434	2,706	1,440	1,885	–	–	–	–	1,440	1,885	–	–
Guatemala	3,549	3,886	1,478	1,770	–	–	–	–	1,478	1,770	–	–
Haiti	3,426	4,247	2,455	3,276	–	–	–	–	–	–	2,455	3,276
Honduras	1,822	2,018	1,311	1,409	–	–	–	–	1,311	1,409	–	–
Mexico	32,348	35,572	16,620	18,592	–	–	59	11,721	16,561	6,871	–	–
Nicaragua	1,376	1,552	1,220	1,486	–	–	–	–	1,220	1,486	–	–
Panama	995	1,076	970	1,033	–	–	–	–	970	1,033	–	–
Paraguay	1,672	1,808	759	1,521	–	–	–	–	759	[e]	–	1,521[e]
Peru	10,213	10,365	4,604	3,019	–	–	14	47	3,320	2,972	1,270	–
United States of America	174,231	182,953	42,861	43,700	42,861	43,700	–	–	–	–	–	–
Uruguay	2,710	2,827[c]	–	–	–	–	–	–	–	–	–	–
Venezuela	6,320	7,604	4,517	5,696	3,294	5,203[f]	703	173	520	320	–	–
Antigua	56	59[c]	–	–	–	–	–	–	–	–	–	–
Bahamas	138	105[c]	–	–	–	–	–	–	–	–	–	–
Barbados	234	232[c]	232	228	232	228	–	–	–	–	–	–
Bermuda	43	47[g]	–	–	–	–	–	–	–	–	–	–
British Guiana	533	575	500	575	430	515	–	–	67	60	3	–
British Honduras	86	93	86	93	–	–	–	–	86	93	–	–
Dominica	64	59	52	10	–	–	52	–	–	10	–	–
Falkland Islands	2	2	–	–	–	–	–	–	–	–	–	–
French Guiana	30	32	29	32	–	–	–	27	29	5	–	–
Grenada	92	89[c]	34	37	–	–	–	37	28	–	6	–
Guadeloupe	257	270	214	244	35	58	129	186	50	–	–	–
Jamaica	1,627	1,650	1,303	1,045	–	–	–	761	1,303	284	–	–

Table 1—*Status of Malaria Eradication in the Americas, by Population, 1958-1961*[a] *(cont.)*
(Population in thousands)

Country or other political unit	Total population		Population of originally malarious areas									
			Total		Malaria eradication claimed (maintenance phase)		Consolidation phase		Attack phase		Preparatory phase	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961
Martinique	262	277[c]	170	176	170	176	–	–	–	–	–	–
Montserrat	14	15[c]	–	–	–	–	–	–	–	–	–	–
Netherlands Antilles	193	190[c]	–	–	–	–	–	–	–	–	–	–
Panama Canal Zone	55	42	55	42	–	–	–	41	55	1	–	–
Puerto Rico	2,282	2,406	2,265	2,391	2,265	2,391	–	–	–	–	–	–
St. Kitts-Nevis-Anguilla	58	60[g]	–	–	–	–	–	–	–	–	–	–
St. Lucia	92	86	74	72	–	–	–	72	74	–	–	–
St. Pierre-Miquelon	5	5[g]	–	–	–	–	–	–	–	–	–	–
St. Vincent	82	84[c]	–	–	–	–	–	–	–	–	–	–
Surinam	275	300	275	185	–	–	136	115	139	70	–	–
Trinidad and Tobago	785	868	785	868	35	37	160	197	590	634	–	–
Virgin Islands (U. K.)	8	8[g]	–	–	–	–	–	–	–	–	–	–
Virgin Islands (U. S.)	24	34	–	–	–	–	–	–	–	–	–	–
Total	387,276	416,008	135,409	147,292	52,866	56,979	1,996	17,879	46,196	39,021	34,351	33,413

--- No information.
– None.

(*a*) Population refers to 1958 and 1961 census or mid-1958 and 1961 estimate unless otherwise indicated.
(*b*) Preparatory phase or areas not sprayed regularly.
(*c*) 1960 estimate.
(*d*) Sprayings suspended in some large cities, but not yet considered in consolidation phase.
(*e*) 135,000 inhabitants protected during three months included under preparatory phase.
(*f*) 4,271,271 inhabitants in areas where malaria has been eradicated, as registered by PAHO.
(*g*) 1959 estimate.

Table 2—*Status of Malaria Eradication in the Americas, by Area, 1958-1961*

(*Area in km²*)

Country or other political unit	Total area		Originally malarious area									
			Total		Malaria eradication claimed (maintenance phase)		Consolidation phase		Attack phase		Preparatory phase	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958[a]	1961
Argentina	4,011,594[b]	4,011,594[b]	270,000	270,400	26,200	40,100	23,000	16,490	70,800	213,810	150,000	–
Bolivia	1,098,581	1,098,581	842,018	824,260	–	–	–	297,489	842,018	526,771	–	–
Brazil	8,513,844	8,513,844	7,448,997	7,338,759[c]	41,164	41,164	–	136,969	–	3,628,861	7,407,833	3,371,000
Canada	9,974,375	9,974,375	–	–	–	–	–	–	–	–	–	–
Chile	741,767	741,767	55,287	55,287	55,287	55,287	–	–	–	–	–	–
Colombia	1,138,355	1,138,338	1,026,433	1,026,433	–	–	–	(*d*)	1,026,433	1,026,433[d]	–	–
Costa Rica	50,900	50,900	31,526	31,526	–	–	–	–	31,526	31,526	–	–
Cuba	114,524	114,524	---	37,376	---	–	---	–	---	–	---	37,376
Dominican Republic	48,734	48,279	41,010	39,219	–	–	–	–	41,010	19,610	–	19,609
Ecuador	270,670	291,906	153,766	152,862	–	–	–	–	153,766	152,862	–	–
El Salvador	20,000	21,146	19,310	19,300	–	–	–	–	19,310	19,300	–	–
Guatemala	108,889	108,889	80,380	80,350	–	–	–	–	80,380	80,350	–	–
Haiti	27,750	27,750	19,098	19,098	–	–	–	–	–	–	19,098	19,098
Honduras	112,088	112,088	87,383	87,389	–	–	–	–	87,383	87,389	–	–
Mexico	1,969,269	1,969,367	978,185	1,147,564	–	–	36,790	860,564	941,395	287,000	–	–
Nicaragua	148,000	148,000	127,199	131,000	–	–	–	–	127,199	131,000	–	–
Panama	74,470	74,470	68,497	68,497	–	–	–	–	68,497	68,497	–	–
Paraguay	406,752	406,752	42,286	406,752	–	–	–	–	42,286	–	–	406,752
Peru	1,249,049	1,249,094	943,228	943,228	–	–	5,110	14,551	237,478	928,677	700,640	–
United States of America	9,346,751	9,346,751	2,257,809	2,255,891	2,257,809	2,255,891	–	–	–	–	–	–
Uruguay	186,926	186,926	–	–	–	–	–	–	–	–	–	–
Venezuela	912,050	912,050	600,000	600,000	400,414	430,920[e]	43,712	44,786	155,874	124,294	–	–
Antigua	280	280	–	–	–	–	–	–	–	–	–	–
Bahamas	11,396	11,396	–	–	–	–	–	–	–	–	–	–
Barbados	431	431	430	430	430	430	–	–	–	–	–	–
Bermuda	53	53	–	–	–	–	–	–	–	–	–	–
British Guiana	215,800	214,970	214,970	214,970	4,921	5,180	–	–	19,684	209,790	190,365	–
British Honduras	22,965	22,965	22,965	22,965	–	–	–	–	22,965	22,965	–	–
Dominica	789	790	640	152	–	–	640	–	–	152	–	–
Falkland Islands	11,961	11,961	–	–	–	–	–	–	–	–	–	–
French Guiana	91,000	86,000	90,000	86,000	–	–	–	86,000[f]	90,000	(*f*)	–	–
Grenada	344	344	185	186	–	–	–	186	151	–	34	–
Guadeloupe	1,780	1,780	1,136	1,136	69	69	752	1,067	315	–	–	–

Table 2—*Status of Malaria Eradication in the Americas, by Area, 1958-1961 (cont.)*
(*Area in km²*)

Country or other political unit	Total area		Originally malarious area									
			Total		Malaria eradiction claimed (maintenance phase)		Consolidation phase		Attack phase		Preparatory phase	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958[a]	1961
Jamaica	12,188	11,293	10,319	8,912	–	–	–	4,071	10,319	4,841	–	–
Martinique	1,102	1,102	300	300	300	300	–	–	–	–	–	–
Montserrat	83	84	–	–	–	–	–	–	–	–	–	–
Netherlands Antilles	961	961	–	–	–	–	–	–	–	–	–	–
Panama Canal Zone	1,432	1,432	1,432	1,432	–	–	–	1,432[f]	1,432	(*f*)	–	–
Puerto Rico	8,897	8,897	8,865	8,865	8,865	8,865	–	–	–	–	–	–
St. Kitts-Nevis-Anguilla	396	396	–	–	–	–	–	–	–	–	–	–
St. Lucia	616	603	580	516	–	–	–	516	580	–	–	–
St. Pierre-Miquelon	240	240	–	–	–	–	–	–	–	–	–	–
St. Vincent	389	389	–	–	–	–	–	–	–	–	–	–
Surinam	143,470	142,822	143,470	142,803	–	–	3,320	1,534	140,150	141,269	–	–
Trinidad and Tobago	5,128	5,118	5,118	5,118	295	295	26	26	4,797	4,797	–	–
Virgin Islands (U. K.)	174	174	–	–	–	–	–	–	–	–	–	–
Virgin Islands (U. S.)	344	344	–	–	–	–	–	–	–	–	–	–
Total	41,057,557	41,072,216	15,592,822	16,028,976[e]	2,795,754	2,838,501	113,350	1,465,681	4,215,748	7,710,194	8,467,970	3,853,835

... No information.
– None.

(*a*) Preparatory phase or areas not sprayed regularly.
(*b*) Including the "Antarctica."
(*c*) Including a few areas not classified by phase.
(*d*) Sprayings are suspended in 12,295 km² corresponding to some large cities, but not yet considered in consolidation phase; 13,338 km² are included in which spraying is not done or is done irregularly.
(*e*) Of which 407,945 km² are registered by PAHO.
(*f*) Spraying is continued in a limited part of the area shown as in consolidation phase.

Table 3—*Comparative Percentage Distribution of Population and Area in the Americas, 1958 and 1961, by Status of Malaria Eradication*

Status	Percentage distribution			
	Population[a]		Area[a]	
	1958[b]	1961	1958[b]	1961
Total	100.0	100.0	100.0	100.0
Non-malarious areas	63.4	64.6	60.8	59.8
Originally malarious areas	36.6	35.4	39.2	39.9
Preparatory phase	10.5	8.0	21.3	9.7
Attack phase	11.9	9.4	10.6	19.4
Consolidation phase	0.5	4.3	0.3	3.7
Maintenance phase	13.7	13.7	7.0	7.1

(*a*) Excluding the "Antarctica."
(*b*) Data corrected in accordance with subsequent information.

Table 4—*Personnel Employed in Malaria Eradication Programs in the Americas, 31 December 1958, 1959, 1960, and 1961, by Category*

(*Part-time personnel in parentheses*)

	Title	1958[a]	1959[b]	1960	1961
SPRAYING OPERATIONS	Engineers	93 (3)	92	115 (1)	123 (2)
	Sector chiefs	390 (2)	427	417	377 (2)
	Squad chiefs	1,352 (4)	1,399	1,495 (2)	1,268 (2)
	Spraymen	6,830 (16)	7,487	7,718 (20)	5,847 (40)
	Draftsmen	77	89	105	99
	SUBTOTAL	8,742 (25)	9,494	9,850 (23)	7,714 (46)
EPIDEMIOLOGICAL OPERATIONS	Physicians	242 (28)	245	263 (15)	290 (15)
	Entomologists	37 (1)	25	27 (1)	21 (2)
	Entomological assistants	82 (1)	129	151 (2)	166 (14)
	Statisticians and statistical assistants	41	51	93	91
	Evaluation inspectors	133 (2)	231	309 (8)	355 (2)
	Evaluators	1,142	1,360	2,575 (5)	2,813 (8)
	Microscopists	308 (4)	383	470 (13)	503 (12)
	SUBTOTAL	1,985 (36)	2,424	3,888 (44)	4,239 (53)
ADMINISTRATION AND OTHERS	Administrators	66 (1)	81	96 (1)	82 (2)
	Administrative assistants	324	412	559	460
	Accountants	4 (1)	7	2	8
	Disbursing officers	42 (1)	51	64	65
	Storekeepers	77 (1)	90	94 (1)	90
	Assistant storekeepers	47	88	91	95
	Secretaries	424	421	379	427 (1)
	Others	1,287 (129)	1,888	1,962	1,922 (2)
	SUBTOTAL	2,271 (133)	3,038	3,247 (2)	3,149 (5)
TRANSPORT	Mechanics and assistant mechanics	231 (4)	265	288	286
	Drivers	844 (2)	862	1,096	967 (3)
	Motorboat operators	113 (2)	125	151	204
	Boatmen	75	36	62	37
	SUBTOTAL	1,263 (8)	1,288	1,597	1,494 (3)
	GRAND TOTAL	14,261 (202)	16,244	18,582 (69)	16,596 (107)

(*a*) Revised figures.
(*b*) Part-time personnel included.

Table 5—*Personnel Employed in Spraying Operations in Malaria Eradication Programs in the Americas, 31 December 1958 and 31 December 1961*[a]

(Part-time personnel in parentheses)

Country or other political unit	Total		Engineers		Sector chiefs		Squad chiefs		Spraymen		Draftsmen	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961
Argentina	136	204	1	3	9	10	28	27	93	160	5	4
Bolivia	241	207	3	7	32	25	47	12	158	163	1	–
Brazil (excl. São Paulo)	---	835	---	22	---	35	---	147	---	631	---	–
Brazil (São Paulo)	189(2)	615	(2)	7	12	19	55	90	122	487	–	12
Colombia	1,658	943	23	9	43	46	151	61	1,418	810	23	17
Costa Rica	99	107	2	2	3	3	15	16	78	85	1	1
Cuba[b]	---	81	---	1	---	19	---	61	---	–	---	–
Dominican Republic	183	134	2	2	6	6	28	22	146	103	1	1
Ecuador	301	579	2	9	15	27	50	102	232	440	2	1
El Salvador	266	396	1	1	12	18	49	74	204	301	–	2
Guatemala	290	524	2	1	6	16	21	78	261	426	–	3
Haiti[c]	330	15	7	6	13	–	63	–	247	–	–	9
Honduras	184	291	–	–	10	10	29	47	145	234	–	–
Mexico	2,610	906	36	42	101	46	457	168	1,997	630	19	20
Nicaragua	153	280	–	–	6	8	22	45	125	226	–	1
Panama	172	159	1	–	7	7	27	29	136	122	1	1
Paraguay[d]	105	39	1	3	4	5	16	25	83	–	1	6
Peru	425	392	7	7	22	16	65	75	324	286	7	8
Venezuela	702	413	4	1	48	20	122	66	520	318	8	8
British Guiana	63	22(5)	–	–	1	1	9	5	53	16(5)	–	–
British Honduras	48	20	–	–	8	1	10	4	30	15	–	–
Dominica	1	5	1	–	–	1	–	–	–	4	–	–
French Guiana	29	21(15)	–	–	–	–	9	6	20	15(15)	–	–
Grenada[e]	13	1(1)	–	(1)	1	1	2	–	10	–	–	–
Guadeloupe	37	37	–	–	1	1	6	6	30	30	–	–
Jamaica	201	220	–	–	19	16	33	56	149	148	–	–
Panama Canal Zone	(23)	(25)	(1)	(1)	(2)	(2)	(4)	(2)	(16)	(20)	–	–
St. Lucia[f]	26	–	–	–	2	–	4	–	20	–	–	–
Surinam	74	92	–	–	4	10	13	14	56	67	1	1
Trinidad and Tobago	206	176	–	–	5	10	21	32	173	130	7	4
Total	8,742(25)	7,714(46)	93(3)	123(2)	390(2)	377(2)	1,352(4)	1,268(2)	6,830(16)	5,847(40)	77	99

--- No information.
– None.

(*a*) 1958 figures revised.
(*b*) Program in preparatory phase in 1961.
(*c*) Program suspended during 1959–1960; new program being planned during 1961.
(*d*) Program suspended in March 1961; new program being planned during 1961.
(*e*) In consolidation phase since February 1960.
(*f*) In consolidation phase since October 1959.

Table 6—*Personnel Employed in Epidemiological Evaluation in Malaria Eradication Programs in the Americas, 31 December 1958 and 31 December 1961*[a]

(Part-time personnel in parentheses)

Country or other political unit	Total		Physicians		Entomologists		Entomological assistants		Statisticians and statistical assistants		Evaluation inspectors		Evaluators		Microscopists	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961
Argentina	116(2)	144	7(2)	10	–	1	1	6	–	2	15	10	77	92	16	23
Bolivia	54	143	12	9	1	1	5	3	1	7	–	1	22	104	13	18
Brazil (excl. São Paulo)	---	197	---	43	---	5	---	9	---	–	---	25	---	83	---	32
Brazil (São Paulo)	28(17)	155	(17)	15	10	–	–	11	–	2	–	22	–	54	18	51
Colombia	250	559	29	34	–	1	4	7	3	4	6	58	183	406	25	49
Costa Rica	31	40	1	1	–	–	2	3	3	2	1	3	18	22	6	9
Cuba[b]	---	25	---	8	---	–	---	3	---	–	---	–	---	7	---	7
Dominican Republic	27	20	2	2	1	1	2	–	4	5	–	–	14	7	4	5
Ecuador	67	125	10	11	–	1	5	3	8	16	–	10	30	62	14	22
El Salvador	36	52	2	3	1	1	4	2	1	3	4	4	20	29	4	10
Guatemala	31	103	3	3	1	1	2	12	2	2	1	6	11	66	11	13
Haiti[c]	55	63	5	9	1	1	3	9	–	6	6	6	25	24	15	8
Honduras	41	75	2	1	1	1	–	3	1	2	–	6	18	44	19	18
Mexico	402	1,526	112	94	4	1	29	29	–	2	35[d]	119	182[e]	1,190	40	91
Nicaragua	31	74	4	4	1	1	5	5	–	5	–	6	15	44	6	9
Panama	45	45	1	1	1	1	4	3	–	3	2	2	25	24	12	11
Paraguay[f]	20	51	4	6	1	–	–	5	–	5	6	7	–	19	9	9
Peru	129	197	14	15	8	1	–	6	11	15	–	15	70	104	26	41
Venezuela	470	375	25	14	2	2	–	32	7	7	40	48	353	240	43	32
British Guiana	3	21(1)	1	(1)	1	–	–	–	–	1	–	–	–	18	1	2
British Honduras	10	10	1	1	–	–	–	–	–	–	1	2	8	5	–	2
Dominica	15(6)	6(1)	(6)	(1)	–	–	–	–	–	–	13	–	2	5	–	1
French Guiana	2	1(2)	1	(1)	1	(1)	–	1	–	–	–	–	–	–	–	–
Grenada[g]	4(1)	7(1)	(1)	(1)	–	–	–	–	–	–	–	–	3	6	1	1
Guadeloupe	12(2)	11(5)	1	2	1	1	–	–	–	–	1	1	9	4(5)	(2)	3
Jamaica	34	72	3	2	–	–	–	–	–	–	1	–	16	48	14	22
Panama Canal Zone	(6)	(42)	(1)	(10)	(1)	(1)	–	(14)	–	–	(2)	(2)	–	(3)	(2)	(12)
St. Lucia[h]	4(1)	6(1)	(1)	(1)	–	–	–	–	–	–	–	1	3	5	1	–
Surinam	11(1)	39	1	1	–	–	(1)	–	–	2	–	2	7	30	3	4
Trinidad and Tobago	57	97	1	1	1	–	16	14	–	–	1	1	31	71	7	10
Total	1,985(36)	4,239(53)	242(28)	290(15)	37(1)	21(2)	82(1)	166(14)	41	91	133(2)	355(2)	1,142	2,813(8)	308(4)	503(12)

--- No information. – None.

(*a*) 1958 figures revised. (*b*) Program in preparatory phase in 1961. (*c*) Program suspended during 1959–1960; new program being planned in 1961.
(*d*) Function performed by assistant medical malariologists. (*e*) Field technicians. (*f*) Program suspended in March 1961; new program being planned.
(*g*) In consolidation phase since February 1960. (*h*) In consolidation phase since October 1959.

Table 7—*Personnel Employed in Administrative and Other Services in Malaria Eradication Programs in the Americas, 31 December 1958 and 31 December 1961*[a]

(Part-time personnel in parentheses)

Country or other political unit	Total		Administrators		Administrative assistants		Accountants		Disbursing officers		Storekeepers		Assistant storekeepers		Secretaries		Other	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961
Argentina	148(2)	159	1	3	84	78	–	–	–	–	–	5	–	8	–	3	63(2)	62
Bolivia	73	102	12	6	12	3	2	1	–	3	1	1	–	1	15	10	31	77
Brazil (excl. São Paulo)	---	49	---	–	---	–	---	–	---	–	---	–	---	–	---	–	---	49
Brazil (São Paulo)	237	296	1	14	–	85	–	–	–	10	–	9	–	13	–	–	236	165[b]
Colombia	323	362	1	1	15	8	–	–	25	21	21	18	6	10	71	83	184	221
Costa Rica	30	27	1	1	2	3	–	–	–	–	1	1	–	1	5	5	21	16
Cuba[c]	---	–	---	–	---	–	---	–	---	–	---	–	---	–	---	–	---	–
Dominican Republic	15	8	1	1	2	3	–	–	–	–	1	1	1	1	6	1	4	1
Ecuador	60	101	1	8	3	6	–	4	2	6	8	7	–	2	8	8	38	60
El Salvador	13	51	1	1	1	5	–	–	–	1	1	1	1	1	–	5	9	37
Guatemala	18	61	–	–	4	16	–	–	–	–	–	2	–	2	6	6	8	35
Haiti[d]	99	293	4	4	25	2	–	2	–	1	–	2	–	–	6	16	64	266
Honduras	16	41	1	1	4	8	–	–	–	–	2	1	–	–	5	8	4	23
Mexico	613	662	11	11	120	173	–	–	14	15	15	10	25	26	124	110	304	317
Nicaragua	31	79	–	1	11	1	–	–	–	1	–	1	–	8	–	4	20	63
Panama	26	29	1	1	–	–	–	–	–	–	1	1	–	2	9	8	15	17
Paraguay[e]	28	42	1	1	–	20	1	–	–	–	1	1	–	1	1	3	24	16
Peru	85	134	6	1	34	40	1	1	–	6	5	7	5	6	13	18	21	55
Venezuela	354	379	21	21	3	3	–	–	1	1	16	16	5	5	125	125	183	208
British Guiana	6	11	–	–	–	–	–	–	–	–	–	1	–	1	2	1	4	8
British Honduras	4	4	1	1	–	–	–	–	–	–	–	1	–	–	1	1	2	1
Dominica	1(10)	1(1)	1	(1)	–	–	–	–	–	–	–	–	–	–	–	1	(10)	–
French Guiana	1	1	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–
Grenada[f]	1(1)	(1)	–	(1)	–	–	–	–	–	–	(1)	–	–	–	–	–	1	–
Guadeloupe	9(1)	2	–	1	–	–	(1)	–	–	–	–	–	–	–	1	1	8	–
Jamaica	46(13)	70	–	2	1	2	–	–	–	–	1	1	3	1	20	3	21(13)	61
Panama Canal Zone	(104)[g]	(2)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	(104)[g]	(2)
St. Lucia[h]	3	1(1)	–	–	–	–	–	–	–	–	1	–	–	–	1	(1)	1	1
Surinam	7(2)	12	(1)	1	1	2	–	–	(1)	–	1	1	1	3	1	1	3	4
Trinidad and Tobago	24	172	–	1	2	2	–	–	–	–	1	2	–	3	3	5	18	159
Total	2,271 (133)	3,149 (5)	66 (1)	82 (2)	324	460	4 (1)	8	42 (1)	65	77 (1)	90	47	95	424	427 (1)	1,287 (129)	1,922 (2)

--- No information.
– None.

(*a*) 1958 figures revised.
(*b*) Some personnel of Chagas' disease control program included.
(*c*) Program in preparatory phase in 1961.
(*d*) Program suspended during 1959-1960. New program being planned during 1961.
(*e*) Program suspended in March 1961. New program being planned.
(*f*) In consolidation phase since February 1960.
(*g*) Environmental sanitation and general hospital personnel.
(*h*) In consolidation phase since October 1959.

Table 8—*Personnel Employed in Transport Services in Malaria Eradication Programs in the Americas, 31 December 1958 and 31 December 1961*[a]

(*Part-time personnel in parentheses*)

Country or other political unit	Total		Mechanics and assistant mechanics		Drivers		Motorboat operators		Boatmen	
	1958	1961	1958	1961	1958	1961	1958	1961	1958	1961
Argentina	59	59	22	21	37	38	–	–	–	–
Bolivia	51	73	5	9	38	41	7	23	1	–
Brazil (excl. São Paulo)	---	26	---	–	---	26	---	–	---	–
Brazil (São Paulo)	37	221	3	22	34	196	–	3	–	–
Colombia	429	346	46	58	239	137	72	115	72	36
Costa Rica	16	12	1	2	15	10	–	–	–	–
Cuba[b]	---	–	---	–	---	–	---	–	---	–
Dominican Republic	39	36	6	8	33	28	–	–	–	–
Ecuador	30	76	9	9	19	57	2	10	–	–
El Salvador	50	57	4	10	46	47	–	–	–	–
Guatemala	43	81	7	–	36	81	–	–	–	–
Haiti[c]	14	19	7	2	7	17	–	–	–	–
Honduras	34	55	–	3	32	51	2	1	–	–
Mexico	100	100	63	65	33	23	4	12	–	–
Nicaragua	28	57	–	3	24	50	4	4	–	–
Panama	8	8	3	5	5	3	–	–	–	–
Paraguay[d]	32	20	4	2	24	16	2	1	2	1
Peru	95	63	14	20	81	31	–	12	–	–
Venezuela	96	54	32	32	53	17	11	5	–	–
British Guiana	3	6	–	–	3	4	–	2	–	–
British Honduras	–	3	–	1	–	2	–	–	–	–
Dominica	–	1	–	–	–	1	–	–	–	–
French Guiana	1	5	–	–	1	5	–	–	–	–
Grenada[e]	3	2	–	–	3	2	–	–	–	–
Guadeloupe	5	4	2	–	3	4	–	–	–	–
Jamaica	42	47	–	3	42	44	–	–	–	–
Panama Canal Zone	(4)	(3)	–	–	(2)	(3)	(2)	–	–	–
St. Lucia[f]	–	–	–	–	–	–	–	–	–	–
Surinam	14(4)	32	(4)	7	5	9	9	16	–	–
Trinidad and Tobago	34	31	3	4	31	27	–	–	–	–
Total	1,263(8)	1,494(3)	231(4)	286	844(2)	967(3)	113(2)	204	75	37

--- No information.
– None.

(*a*) 1958 figures revised.
(*b*) Program in preparatory phase.
(*c*) Program suspended during 1959-1960; new program being planned in 1961.
(*d*) Program suspended in March 1961; new program being planned.
(*e*) In consolidation phase since February 1960.
(*f*) In consolidation phase since October 1959.

Table 9—*Means of Transport in Malaria Eradication Programs in the Americas, 1961*

Country or other political unit	Trucks (3 tons or more)	Other trucks and pickups	Jeeps	Automobiles and station wagons	Motorcycles	Bicycles	Motorboats	Other boats	Saddle and pack animals	Other
Argentina	7	79	12	10	1	12	–	–	4	4[a]
Bolivia	2	30	29	1	–	7	22	8	169	–
Brazil (excl. São Paulo)	32	247	356	3	–	–	1	2	267	–
Brazil (São Paulo)	8	158	40	–	22[b]	(*b*)	7	–	2	–
Colombia	19	217	78	30	–	55	165	–	1,066	–
Costa Rica	1	15	8	1	–	6	6	–	–	–
Cuba	–	23	35	11	–	–	–	–	95	–
Dominican Republic	2	34	25	6	–	–	–	–	–	–
Ecuador	3	42	52	8	–	11	27	4	239	–
El Salvador	2	28	16	5	–	1	1	–	–	–
Guatemala	1	49	6	22	31	2	7	1	(*c*)	(*d*)
Haiti	–	37	17	–	–	–	–	–	–	–
Honduras	2	35	21	6	–	–	1	–	46	–
Mexico	16	409	216	6	–	–	16	1	1,263	–
Nicaragua	2	24	18	10	–	–	13	–	–	–
Panama	–	20	12	7	–	–	7	–	–	–
Paraguay	–	21	18	3	–	–	6	1	4	–
Peru	7	120	67	1	–	–	124	71	–	–
Venezuela	3	63	67	23	4	114	27	74	631	–
British Guiana	–	2	3	–	–	–	4	4	–	–
British Honduras	–	5	3	–	–	4	2	–	–	–
Dominica	–	2	1	–	3	–	–	–	–	–
French Guiana	1	2	1	1	–	–	–	–	–	–
Grenada	–	2	1	–	3	–	–	–	–	–
Guadeloupe	2	3	2	1	–	–	–	–	–	–
Jamaica	14	30	23	12	–	–	–	–	–	–
Panama Canal Zone	–	2[e]	–	–	–	–	2[e]	5	–	–
St. Lucia	–	1	2	–	5	–	–	–	–	–
Surinam	2	2	2	4	4	2	26	–	–	–
Trinidad and Tobago	7	6	7	1	–	–	1	–	–	2[f]

– None.

(*a*) Tank trucks.
(*b*) Not specified whether motorcycles or bicycles.
(*c*) Rented.
(*d*) Renting of airplanes, boats, etc., as necessary.
(*e*) Part-time.
(*f*) Tractors.

Table 10—*Spraying Operations of Malaria Eradication Programs in the Americas at the End of 1961*

Year of total coverage	Date	Houses sprayed				Total number of sprayings in year	Insecticide used per house (grams technical)		Average number of houses sprayed per spraying-man-day
		DDT		Dieldrin					
		Cycle	Number sprayed	Cycle	Number sprayed		DDT	Dieldrin	
ARGENTINA. Total coverage began 1 August 1959									
1st	Aug. 59–June 60	1st 2nd	55,849[a] 2,146[b] 81,170[a] 6,909[b]	–	–	146,074	263 255	–	--- ---
2nd	July 60–July 61	3rd 4th	78,487[a] 6,442[b] 74,188[a] 2,803[b]	–	–	161,920	305 334	–	--- ---
3rd[c]	Aug. 61–Dec. 61	5th	73,682[a] 2,052[b]	–	–	75,734	383	–	---
BOLIVIA. Total coverage began 1 September 1958									
1st	Sept. 58–Aug. 59	1st 2nd	116,572 129,119	1st	10,910	256,601	362 331	115	8.3 7.0
2nd	Sept. 59–Aug. 60	3rd 4th	136,601 142,536	2nd	12,268	291,405	319 309	118	7.6 7.2
3rd	Sept. 60–Aug. 61	5th 6th	159,952 134,173	–	–	294,125	331 326	–	7.6 7.5
4th[c]	Sept. 61–Dec. 61	7th[c]	80,375	–	–	80,375	344	–	7.8
BRAZIL, ZONE III-A (Sectors of Ceará, Paraíba and Rio Grande do Norte). Total coverage began 31 August 1959									
1st	Sept. 59–June 60	1st 2nd	144,254 243,050	–	–	387,304	534 487	–	7.4 8.3
2nd	July 60–June 61	3rd 4th	255,398 251,289	–	–	506,687	488 461	–	9.3 9.3
3rd[c]	July 61–Aug. 61	5th[c]	94,626	–	–	94,626	439	–	9.0
BRAZIL, ZONE III-B (Sectors of Sergipe and Alagôas). Total coverage began 22 August 1960									
1st	Aug. 60–June 61	1st 2nd	111,633 144,936	–	–	256,569	402 392	–	8.0 8.3
2nd[c]	July 61–Aug. 61	3rd[c]	60,013	–	–	60,013	358	–	9.0
BRAZIL (SÃO PAULO STATE). Total coverage began 4 January 1960									
1st	Jan. 60–Jan. 61	1st 2nd	455,219 458,926	–	–	914,145	433 404	–	8.4 9.8
2nd	Feb. 61–Jan. 62	3rd 4th	436,048 431,473	–	–	867,521	416 412	–	9.4 9.7
COLOMBIA. Total coverage began 29 September 1958									
1st	Oct. 58–Sept. 59	1st 2nd	1,181,235 1,176,392	–	–	2,357,627	466 425	–	6.6 8.9
2nd	Oct. 59–Sept. 60	3rd 4th	1,196,930 1,162,059	–	–	2,358,989	409 394	–	9.4 9.7
3rd	Oct. 60–Sept. 61	5th 6th	1,181,557 888,459[a] 57,042[b]	–	–	2,127,058	397 402	–	9.7 9.3
4th[c]	Oct. 61–Jan. 62	7th[c]	432,521[a] 53,554[b]	–	–	486,075	412	–	8.8

--- No information.
– None.
(*a*) Sprayed twice. (*b*) Sprayed once. (*c*) Not yet completed.

Table 10—*Spraying Operations of Malaria Eradication Programs in the Americas at the End of 1961 (cont.)*

Year of total coverage	Date	Houses sprayed				Total number of sprayings in year	Insecticide used per house (grams technical)		Average number of houses sprayed per sprayman-day
		DDT		Dieldrin					
		Cycle	Number sprayed	Cycle	Number sprayed		DDT	Dieldrin	
COSTA RICA. Total coverage began 15 July 1957									
1st	July 57–Aug. 58	1st 2nd	53,297 58,624	–	–	111,921	464 419	–	5.1 7.4
2nd	Sept. 58–Sept. 59	3rd 4th	60,800 63,063	–	–	123,863	465 531	–	6.9 7.1
3rd	Oct. 59–Sept. 60	5th 6th	63,884 66,961	–	–	130,845	512 475	–	8.6 9.3
4th	Oct. 60–Sept. 61	7th 8th	66,242 68,277	–	–	134,519	473 485	–	9.4 9.2
5th[a]	Oct. 61–Feb. 62	9th[a]	27,104	–	–	27,104	517	–	8.8
DOMINICAN REPUBLIC. Total coverage began 16 June 1958									
1st	June 58–June 59	–	–	1st	395,597	395,597	–	102	11.4
2nd[b]	July 59–Feb. 60	–	–	2nd[b]	236,579	236,579	–	119	10.5
3rd[a]	Mar. 60–Feb. 62	1st 2nd[a]	332,944 188,138	–	–	521,082	495 473	–	9.0 8.3
ECUADOR. Total coverage began 28 March 1957									
1st	Mar. 57–Mar. 58	1 + 2nd	63,284	1st	257,697	320,981	590	114	8.0
2nd	Apr. 58–Mar. 59	3rd 4th	50,089 83,018	2nd	271,417	404,524	490 436	145	6.9 8.5
3rd	Apr. 59–Mar. 60	5th 6th[c]	72,370 97,790	3rd[c]	271,729	441,889	399 403	122	9.3 8.8
(*d*)	Apr. 60–Dec. 60	(*d*)	227,411	–	–	227,411	424	–	8.9
4th	Jan. 61–Dec. 61	7th 8th	394,246 412,008	–	–	806,254	446 475	–	8.4 8.5
EL SALVADOR. Total coverage began 1 July 1956									
1st	July 56–July 57	1st 2nd	260,035 173,537	1st	128,839	562,411	454 621	158	8.5 8.8
2nd	Aug. 57–July 58	3rd 4th	126,329 111,726	2nd	202,728	440,783	469 450	162	9.4 9.3
3rd	Aug. 58–July 59	5th 6th	273,788 270,719	–	–	544,507	493 527	–	8.6 8.9
4th	Aug. 59–July 60	7th 8th	265,361 276,050	–	–	541,411	573 545	–	7.7 7.7
5th	Aug. 60–June 61	9th 10th	279,481 371,715	–	–	651,196	528 526	–	7.6 8.9
6th[a]	July 61–Dec. 61	11th	377,551	–	–	377,551	536	–	9.1
GUATEMALA. Total coverage began 1 August 1956									
1st	Aug. 56–Aug. 57	–	–	1st	306,306	306,306	–	117	8.4
2nd	Sept. 57–Sept. 58	–	–	2nd	331,090	331,090	–	117	8.5
3rd	Oct. 58–Oct. 59	1st 2nd	301,329 357,104	–	–	658,433	427 542	–	8.8 7.5
4th	Nov. 59–Nov. 60	3rd 4th	368,269 378,636	–	–	746,905	541 560	–	7.1 8.1
5th	Dec. 60–Dec. 61	5th 6th	386,737 393,090	–	–	779,827	588 557	–	7.8 7.9

– None.

(*a*) Not yet completed. (*b*) Cycle suspended due to shift of insecticide. (*c*) Cycle suspended. (*d*) Emergency spraying.

Table 10—*Spraying Operations of Malaria Eradication Programs in the Americas at the End of 1961 (cont.)*

Year of total coverage	Date	Houses sprayed: DDT Cycle	Houses sprayed: DDT Number sprayed	Houses sprayed: Dieldrin Cycle	Houses sprayed: Dieldrin Number sprayed	Total number of sprayings in year	Insecticide used per house (grams technical): DDT	Insecticide used per house (grams technical): Dieldrin	Average number of houses sprayed per spraying-man-day
HONDURAS. Total coverage began 15 July 1959									
1st	July 59–June 60	1st 2nd	236,963 242,059	–	–	479,022	406 368	–	9.8 11.4
2nd	July 60–June 61	3rd 4th	254,699 265,825	–	–	520,524	369 419	–	11.8 10.9
3rd[a]	July 61–Dec. 61	5th	277,941	–	–	277,941	360	–	11.1
MEXICO. Total coverage began 2 January 1957									
1st	Jan. 57–Dec. 57	1st 2nd	2,143,023 2,298,952	1st	678,726	5,120,701	495 417	99	9.3 9.9
2nd	Jan. 58–Dec. 58	3rd 4th	2,103,570 1,971,557	2nd	1,217,556	5,292,683	402 424	111	10.3 10.5
3rd	Jan. 59–Dec. 59	5th 6th	3,050,952 3,219,340	3rd	292,301	6,562,593	434 434	114	10.8 10.4
4th	Jan. 60–Dec. 60	7th 8th	3,027,089 2,869,093	4th	22,390	5,918,572	413 387	93	10.9 11.1
5th	Jan. 61–Dec. 61	9th 10th	1,582,503 852,287	–	–	2,434,790	356 414	–	11.2 10.5
NICARAGUA. Total coverage began 10 November 1958									
1st	Nov. 58–Dec. 59	1st 2nd	205,930 218,645	–	–	424,575	401 325	–	9.2 10.3
2nd	Jan. 60–Dec. 60	3rd 4th	230,478 239,076	–	–	469,554	367 396	–	9.4 8.9
3rd	Jan. 61–Dec. 61	5th 6th	239,375 249,068	–	–	488,443[b]	403 396	–	9.5 9.1
PANAMA. Total coverage began 19 August 1957									
1st	Aug. 57–Aug. 58	–	–	1st	155,963	155,963	–	119	6.5
2nd	Sept. 58–Aug. 59	–	–	2nd	154,638	154,638	–	145	6.9
3rd	Sept. 59–Aug. 60	–	–	3rd	131,270	131,270	–	129	7.3
4th[c]	Sept. 60–Feb. 62	–	–	4th[c]	181,903	181,903	–	140	6.8
PARAGUAY. Total coverage began 30 October 1957									
1st	Nov. 57–Oct. 58	–	–	1st	148,626	148,626	–	105	10.9
2nd	Nov. 58–Oct. 59	–	–	2nd	161,261	161,261	–	111	14.3
3rd	Nov. 59–Oct. 60	–	–	3rd	171,086	171,086	–	119	11.7
4th[c]	Nov. 60–Mar. 61	–	–	4th[c]	56,658	56,658	–	139	9.2
PERU. Total coverage began 17 November 1957									
1st	Nov. 57–Oct. 58	1 + 2nd	286,764[d] 70,266[e]	1st	121,666	478,696	---	---	7.8
2nd	Jan. 59–Dec. 59	(f)	271,065	2nd	341,804	612,869	424	118	8.4
3rd	Jan. 60–Dec. 60	(f)	447,848	3rd	234,643	682,491	468	95	8.4
4th	Jan. 61–Dec. 61	(f)	534,037	4th	25,005	559,042	410	109	7.9

--- No information.
– None.

(a) Not yet completed.
(b) 2,469 houses sprayed with malathion not included.
(c) Program suspended; new program being planned.
(d) Sprayed twice.
(e) Sprayed once.
(f) Owing to different spray-cycle timing in different regions, these data refer to the calendar year.

Table 10—*Spraying Operations of Malaria Eradication Programs in the Americas at the End of 1961 (cont.)*

Year of total coverage	Date	Houses sprayed				Total number of sprayings in year	Insecticide used per house (grams technical)		Average number of houses sprayed per sprayman-day
		DDT		Dieldrin					
		Cycle	Number sprayed	Cycle	Number sprayed		DDT	Dieldrin	
BRITISH HONDURAS. Total coverage began 4 February 1957									
1st	Feb. 57–Jan. 58	–	–	1st	17,082	17,082	–	84	---
2nd	Feb. 58–Dec. 58	1st 2nd	6,419 118	2nd	11,873[a] 7,470[b]	25,880	290 416	99	8.0 8.2
3rd	May[c] 59–June 60	3rd 4th	17,516 18,005	–	–	35,521	329 332	–	7.5 8.0
4th	July 60–June 61	5th 6th	18,013 17,871	–	–	35,884	374 342	–	8.4 8.9
5th[d]	July 61–Jan. 62	7th	15,236	–	–	15,236	322	–	10.2
DOMINICA. Total coverage began 8 June 1959									
1st	June 59–May 60	1st 2nd	2,748 2,604	–	–	5,352	258 217	–	8.1 7.7
2nd	Aug. 60–Oct. 61	3rd 4th	2,722 3,040	–	–	5,762	219 223	–	5.3 6.5
3rd[d]	Nov. 61–Feb. 62	5th[d]	1,550	–	–	1,550	214	–	6.5
GRENADA. Total coverage began 12 February 1957; ended January 1960									
JAMAICA. Total coverage began 2 January 1958									
1st	Jan. 58–Dec. 58	–	–	1st	271,514	271,514	–	60.5	8.9
2nd	Jan. 59–Sept. 59	1st	88,862[a]	2nd	181,319[e]	270,181	226	62.1	9.9
3rd	Oct. 59–Sept. 60	2nd 3rd	269,225 241,046	–	–	510,271	213 179	–	9.9 9.5
4th[d]	Oct. 60–Aug. 61	4th 5th[d]	144,428 87,102	–	–	231,530	178 178	–	9.5 10.2
ST. LUCIA. Total coverage began 16 January 1956; ended September 1959									
SURINAM. Total coverage began 5 May 1958									
1st	May 58–Apr. 59	1st 2nd	31,299 40,211	1st[f]	7,484	78,994	310 318	53	5.8 6.9
2nd	May 59–Apr. 60	3rd 4th	37,563 37,445	2nd[f]	13,331	88,339	274 250	59	8.0 7.8
3rd	May 60–June 61	5th 6th	36,861 16,298	3rd	5,565	58,724	263 211	56	6.2 6.0
4th	July 61–Dec. 61	7th	15,533	4th[d]	1,320	16,853	211	54	5.7
TRINIDAD AND TOBAGO. Total coverage began 2 January 1958									
1st	Jan. 58–Oct. 58	–	–	1st	117,678	117,678	–	141	7.1
2nd	Jan. 59–Dec. 59	1st[g]	68,290	2nd	81,108	149,398	315	126	9.0
3rd	Jan. 60–Dec. 60	2nd 3rd	118,978 119,155	3rd	2,322	240,455	331 306	143	11.5 9.6
4th	Jan. 61–Dec. 61	4th 5th	120,222 123,082	4th	3,317	246,621	320 286	155	11.0 11.1

--- No information. – None.

(*a*) Sprayed once. (*b*) Sprayed twice.
(*c*) During January-April 1959, spraying was limited to emergency spraying of 210 houses with dieldrin.
(*d*) Not yet completed. (*e*) Cycle suspended.
(*f*) Houses sprayed with dieldrin are shown for dates corresponding to DDT cycle, though in 1960 the dieldrin year was July-June; from January 1961 DDT and dieldrin cycles are synchronized.
(*g*) About one third of the houses were sprayed twice during the period shown.

Table 11—*Spraying Achievements of Malaria Eradication Programs in the Americas at the End of 1961*

Year of total coverage	Date	Number of sprayings	Number of houses not sprayed[a]				Per cent of houses not sprayed
			Not sprayable	Refused entry to sprayman	Closed	Tota	
ARGENTINA. Total coverage began 1 August 1959							
1st	Aug. 59–June 60	146,074	5,328	22	1,819	7,169	4.7
2nd	July 60–July 61	161,920	5,550	68	2,607	8,225	4.8
3rd	Aug. 61–Dec. 61	75,734	4,488	51	3,005	7,544	9.1
BOLIVIA. Total coverage began 1 September 1958							
1st	Sept. 58–Aug. 59	256,601	12,482	862	19,094	32,438	11.2
2nd	Sept. 59–Aug. 60	291,405	17,039	438	14,322	31,799	9.8
3rd	Sept. 60–Aug. 61	294,125	18,892	463	9,382	28,737	8.9
4th	Sept. 61–Dec. 61	80,375	4,419	97	2,165	6,681	7.7
BRAZIL, ZONE III-A (Sectors of Ceará, Paraíba and Rio Grande do Norte). Total coverage began 31 August 1959							
1st	Sept. 59–June 60	387,304	---	---	---	46,558	10.7
2nd	July 60–June 61	506,687	16,363	23,959	10,812	51,134	9.2
3rd	July 61–Aug. 61	94,626	2,268	9,110	3,256	14,634	13.4
BRAZIL, ZONE III-B (Sectors of Sergipe and Alagôas). Total coverage began 22 August 1960							
1st	Aug. 60–June 61	256,569	20,552	6,473	11,566	38,591	13.1
2nd	July 61–Aug. 61	60,013	4,051	945	1,838	6,834	10.2
BRAZIL (SÃO PAULO STATE). Total coverage began 4 January 1960							
1st	Jan. 60–Jan. 61	914,145	45,164	8,410	24,379	77,953	7.9
2nd	Feb. 61–Jan. 62	867,521	39,363	5,848	10,991	56,202	6.1
COLOMBIA. Total coverage began 29 September 1958							
1st	Oct. 58–Sept. 59	2,357,627	82,822	85,476	57,804	226,102	8.8
2nd	Oct. 59–Sept. 60	2,358,989	70,006	28,155	88,588	186,749	7.3
3rd	Oct. 60–Sept. 61	2,127,058	46,393	30,737	67,448	144,578	6.4
4th	Oct. 61–Jan. 62	486,075	7,665	8,440	16,244	32,349	6.2
COSTA RICA. Total coverage began 15 July 1957							
1st	July 57–Aug. 58	111,921	0	0	0	0	0.0
2nd	Sept. 58–Sept. 59	123,863	0	0	0	0	0.0
3rd	Oct. 59–Sept. 60	130,845	0	0	0	0	0.0
4th	Oct. 60–Sept. 61	134,519	0	0	0	0	0.0
5th	Oct. 61–Feb. 62	27,104	0	0	0	0	0.0
DOMINICAN REPUBLIC. Total coverage began 16 June 1958							
1st	June 58–June 59	395,597	---	---	---	5,706	1.4
2nd[b]	July 59–Feb. 60	236,579	7,908	916	8,059	16,833	6.7
3rd	Mar. 60–Feb. 62	521,082	16,463	2,780	18,288	37,531	6.7

--- No information.

(*a*) When follow-up spraying is done, the figures represent the net number of houses unsprayed at the end of the spraying cycle.

(*b*) Cycle suspended owing to shift of insecticide.

Table 11—*Spraying Achievements of Malaria Eradication Programs in the Americas at the End of 1961 (cont.)*

Year of total coverage	Date	Number of sprayings	Number of houses not sprayed[a]				Per cent of houses not sprayed
			Not sprayable	Refused entry to sprayman	Closed	Total	
ECUADOR. Total coverage began 28 March 1957							
1st	Mar. 57–Mar. 58	320,981	---	---	---	---	---
2nd	Apr. 58–Mar. 59	404,524	3,168	4,112	9,618	16,898	4.0
3rd	Apr. 59–Mar. 60	441,889	2,430	1,587	5,123	9,140	2.0
(b)	Apr. 60–Dec. 60	227,411	753	1,069	2,518	4,340	1.9
4th	Jan. 61–Dec. 61	806,254	3,184	4,394	11,008	18,586	2.3
EL SALVADOR. Total coverage began 1 July 1956							
1st	July 56–July 57	562,411	---	---	---	218	0.04
2nd	Aug. 57–July 58	440,783	0	0	0	0	0.0
3rd	Aug. 58–July 59	544,507	0	101	355	456	0.1
4th	Aug. 59–July 60	541,411	0	510	1,426	1,936	0.4
5th	Aug. 60–June 61	651,196	0	974	1,989	2,963	0.5
6th	July 61–Dec. 61	377,551	0	840	2,041	2,881	0.8
GUATEMALA. Total coverage began 1 August 1956							
1st	Aug. 56–Aug. 57	306,306	---	---	---	758	0.2
2nd	Sept. 57–Sept. 58	331,090	---	---	---	1,518	0.5
3rd	Oct. 58–Oct. 59	658,433	---	---	---	6,541	1.0
4th	Nov. 59–Nov. 60	746,905	0	783	6,379	7,162	0.9
5th	Dec. 60–Dec. 61	779,827	0	6,846	14,928	21,774	2.7
HONDURAS. Total coverage began 15 July 1959							
1st	July 59–June 60	479,022	6,519	391	1,812	8,722	1.8
2nd	July 60–June 61	520,524	436	601	3,132	4,169	0.8
3rd	July 61–Dec. 61	277,941	0	275	1,874	2,149	0.8
MEXICO. Total coverage began 2 January 1957							
1st	Jan. 57–Dec. 57	5,120,701	77,537	71,619[c]		149,156	2.8
2nd	Jan. 58–Dec. 58	5,292,683	167,483	154,479[c]		321,962	5.7
3rd	Jan. 59–Dec. 59	6,562,593	203,597	215,007[c]		418,604	6.0
4th	Jan. 60–Dec. 60	5,918,572	164,492	248,212[c]		412,704	6.5
5th	Jan. 61–Dec. 61	2,434,790	45,544	79,763[c]		125,307	4.9
NICARAGUA. Total coverage began 10 November 1958							
1st	Nov. 58–Dec. 59	424,575	6,802	2,099	7,282	16,183	3.7
2nd	Jan. 60–Dec. 60	469,554	12,487	2,102	4,841	19,430	4.0
3rd	Jan. 61–Dec. 61	488,443	13,640	1,417	6,619	21,676	4.2
PANAMA. Total coverage began 19 August 1957							
1st	Aug. 57–Aug. 58	155,963	---	---	---	5,047	3.1
2nd	Sept. 58–Aug. 59	154,638	2,247	267	5,857	8,371	5.1
3rd	Sept. 59–Aug. 60	131,270	1,825	530	6,738	9,093	6.5
4th	Sept. 60–Feb. 62	181,903	1,449	2,030	9,144	12,623	6.5

--- No information.

(a) When follow-up spraying is done, the figures represent the net number of houses unsprayed at the end of the spraying year.
(b) Emergency spraying.
(c) Including unspecified other reasons.

Table 11—*Spraying Achievements of Malaria Eradication Programs in the Americas at the End of 1961 (cont.)*

Year of total coverage	Date	Number of sprayings	Number of houses not sprayed[a]				Per cent of houses not sprayed
			Not sprayable	Refused entry to sprayman	Closed	Total	
PARAGUAY. Total coverage began 30 October 1957							
1st	Nov. 57–Oct. 58	148,626	0	0	651	651	0.4
2nd	Nov. 58–Oct. 59	161,261	0	90	1,022	1,112	0.7
3rd	Nov. 59–Oct. 60	171,086	0	28	981	1,009	0.6
4th[b]	Nov. 60–Mar. 61	56,658	0	0	494	494	0.9
PERU. Total coverage began 4 February 1957							
1st	Nov. 57–Oct. 58	478,696	522	72	42,201	42,795	8.2
(c)	Jan. 59–Dec. 59	612,869	16,373	2,163	22,120	40,656	6.2
(c)	Jan. 60–Dec. 60	682,491	12,433	1,479	13,661	27,573	3.8
(c)	Jan. 61–Dec. 61	559,042	7,241	1,138	7,884	16,263	2.8
BRITISH HONDURAS. Total coverage began 4 February 1957							
1st	Feb. 57–Jan. 58	17,082	---	---	---	---	---
2nd	Feb. 58–Dec. 58	25,880	0	0	427	427	1.6
3rd	May 59–June 60	35,521	510	3	334	847	2.3
4th	July 60–June 61	35,884	781	1	322	1,104	3.0
5th	July 61–Jan. 62	15,236	82	0	118	200	1.3
DOMINICA. Total coverage began 8 June 1959							
1st	June 59–May 60	5,352	28	104	182	314	5.5
2nd	Aug. 60–Oct. 61	5,762	55	53	382	490	7.8
3rd	Nov. 61–Feb. 62	1,550	29	4	94	127	7.6
JAMAICA. Total coverage began 2 January 1958							
1st	Jan. 58–Dec. 58	271,514	7,395	9	0	7,404	2.7
2nd	Jan. 59–Sept. 59	270,181	5,217	29	1,834	7,080	2.6
3rd	Oct. 59–Sept. 60	510,271	17,831	141	3,916	21,888	4.1
4th	Oct. 60–Aug. 61	231,530	8,015	24	1,091	9,130	3.8
SURINAM. Total coverage began 5 May 1958							
1st	May 58–Apr. 59	78,994	196	124	4,980	5,300	6.3
2nd	May 59–Apr. 60	88,339	166	1,126	3,838	5,130	5.5
3rd	May 60–June 61	58,724	408	2,083	10,865	13,356	18.5
4th	July 61–Dec. 61	16,853	76	636	4,786	5,498	24.6
TRINIDAD AND TOBAGO. Total coverage began 2 January 1958							
1st	Jan. 58–Oct. 58	117,678	---	---	---	2,519	2.1
2nd	Jan. 59–Dec. 59	149,398	27	1	477	505	0.3
3rd	Jan. 60–Dec. 60	240,455	33	0	1,301	1,334	0.6
4th	Jan. 61–Dec. 61	246,621	0	0	1,895	1,895	0.8

--- No information.

(a) When follow-up spraying is done, the figures represent the net number of houses unsprayed at the end of the spraying year.
(b) Program suspended; new program being planned.
(c) Owing to different spray-cycle timing in different regions, these data refer to the calendar year.

Table 12—*Case-Detection During the Attack Phase in Malaria Eradication Programs in the Americas*

Year of total coverage	Date	Number of inhabitants directly protected by spraying	Number of slides examined	Number of positive slides				Per cent positive
				P. falciparum	*P. vivax*	*P. malariae*	Total	
ARGENTINA. Total coverage began 1 August 1959								
1st[a]	Aug. 59–June 60	535,922	70,760	6	2,491	0	2,497	3.53
2nd[b]	July 60–July 61	609,387	96,991	4	3,876	0	3,880	4.00
3rd	Aug. 61–Dec. 61	280,425	44,270	1	1,279	0	1,280	2.89
BOLIVIA. Total coverage began 1 September 1958[c]								
1st	Sept. 58–Aug. 59	754,635[c]	50,980	273	1,268	302	1,843	3.62
2nd	Sept. 59–Aug. 60	1,295,044	99,241	124	803	179	1,106	1.12
3rd	Sept. 60–Aug. 61	1,278,038	126,384	90	615	30	735	0.58
4th	Sept. 61–Dec. 61	337,098	45,069	10	227	0	237	0.53
BRAZIL (SÃO PAULO STATE). Total coverage began 4 January 1960								
1st	Jan. 60–Jan. 61	3,817,084	124,525	72	9,005	1	9,078	7.29
2nd	Feb. 61–Jan. 62	3,638,449	219,841	262	6,817	3	7,082	3.22
COLOMBIA. Total coverage began 29 September 1958								
1st	Oct. 58–Sept. 59	13,089,121	205,343	731	1,877	18	2,626	1.28
2nd	Oct. 59–Sept. 60	12,701,683	542,570	3,562	4,923	42	8,529	1.57
3rd	Oct. 60–Sept. 61	11,049,985	515,395	8,730	5,822	39	14,591	2.83
4th	Oct. 61–Dec. 61	1,921,334	146,150	2,163	1,656	7	3,826	2.62
COSTA RICA. Total coverage began 15 July 1957								
1st	July 57–Aug. 58	550,660	24,773	115	1,661	10	1,786	7.21
2nd	Sept. 58–Sept. 59	596,007	52,697	135	2,081	6	2,222	4.22
3rd	Oct. 59–Sept. 60	622,215	66,721	91	1,888	1	1,980	2.96
4th	Oct. 60–Sept. 61	628,204	81,977	32	1,798	0	1,830	2.23
5th	Oct. 61–Feb. 62	126,490	35,227	3	543	0	546	1.55
DOMINICAN REPUBLIC. Total coverage began 16 June 1958								
1st	June 58–June 59	2,015,214	29,718	1,522	1,537	1	3,060	10.30
2nd	July 59–Feb. 60	1,202,301	19,362	2,453	1,751	10	4,214	21.76
3rd	Mar. 60–Feb. 62	2,713,307	38,668	3,912	2,862	8	6,782	17.53
ECUADOR. Total coverage began 28 March 1957								
1st	Mar. 57–Mar. 58	1,777,586	47,993	1,169	1,086	3	2,258	4.70
2nd	Apr. 58–Mar. 59	2,171,079	69,085	2,361	2,437	4	4,802	6.95
3rd	Apr. 59–Mar. 60	2,080,775	108,041	2,454	3,833	4	6,291	5.82
(*d*)	Apr. 60–Dec. 60	918,151	92,510	2,761	4,912	19	7,692	8.31
4th	Jan. 61–Dec. 61	3,795,248	213,169	1,489	8,243	1	9,733	4.57

(*a*) Data for entire country; not separated by attack phase and consolidation phase.
(*b*) Data for both attack and consolidation phases July-Dec. 1960; attack phase only, Jan.-July 1961.
(*c*) Jan.-Aug. 1959.
(*d*) During emergency spraying.

Table 12—*Case-Detection During the Attack Phase in Malaria Eradication Programs in the Americas (cont.)*

Year of total coverage	Date	Number of inhabitants directly protected by spraying	Number of slides examined	Number of positive slides				Per cent positive
				P. falciparum	*P. vivax*	*P. malariae*	Total	
EL SALVADOR. Total coverage began 1 July 1956								
1st	July 56–July 57	2,845,568	11,829	774	1,510	0	2,284	19.31
2nd	Aug. 57–July 58	2,102,503	42,216	4,212	4,891	5	9,108	21.57
3rd	Aug. 58–July 59	2,570,500[a]	59,463	4,384	9,136	0	13,520	22.74
4th	Aug. 59–July 60	2,534,965	75,177	3,061	9,566	0	12,627	16.80
5th	Aug. 60–July 61	3,010,514	75,053	3,168	7,620	3	10,791	14.38
6th	July 61–Dec. 61	1,736,431	91,077	1,784	5,992	2	7,778	8.54
GUATEMALA. Total coverage began 1 August 1956								
1st	Aug. 56–Aug. 57	712,788[b]	22,965	1,255	3,858	3	5,116	22.28
2nd	Sept. 57–Sept. 58	1,501,742	47,945	3,909	6,174	1	10,084	21.03
3rd	Oct. 58–Oct. 59	2,854,461	124,519	3,734	9,300	0	13,034	10.47
4th	Nov. 59–Nov. 60	3,099,988	126,667	400	2,967	0	3,367	2.66
5th	Dec. 60–Dec. 61	3,448,877	230,702	865	3,485	6	4,356	1.89
HONDURAS. Total coverage began 15 July 1959								
1st	July 59–June 60	2,254,385	82,673	2,925	3,649	1	6,575	7.95
2nd	July 60–June 61	2,672,662	137,025	1,506	3,716	1	5,223	3.81
3rd	July 61–Dec. 61	1,409,325	94,891	327	2,018	0	2,345	2.47
MEXICO. Total coverage began 2 January 1957								
1st	Jan. 57–Dec. 57	23,399,463	175,080	514	3,856	17	4,387	2.51
2nd	Jan. 58–Dec. 58	23,744,095	399,124	487	2,779	24	3,290	0.82
3rd	Jan. 59–Dec. 59	29,119,920	815,038	443	2,705	54	3,202	0.39
4th	Jan. 60–Dec. 60	25,782,965	1,208,712	245	3,251	73	3,569	0.29
5th	Jan. 61–Dec. 61	10,070,335	828,360	337	8,285	113	8,735	1.05
NICARAGUA. Total coverage began 10 November 1958								
1st	Nov. 58–Dec. 59	2,352,191	38,966	619	1,256	0	1,875	4.81
2nd	Jan. 60–Dec. 60	2,535,535	74,074	4,217	3,311	0	7,528	10.16
3rd	Jan. 61–Dec. 61	2,547,299	109,293	3,001	5,271	0	8,722	7.57
PANAMA. Total coverage began 19 August 1957								
1st	Aug. 57–Aug. 58	670,000[a]	69,429	1,717	---	---	5,634	8.11
2nd	Sept. 58–Aug. 59	667,095	93,338	720	4,196	5	4,921	5.27
3rd	Sept. 59–Aug. 60	562,514	76,984	751	4,479	2	5,232	6.80
4th	Sept. 60–Feb. 62	769,967	137,756	1,591	3,760	2	5,353	3.89
PARAGUAY. Total coverage began 30 October 1957								
1st	Nov. 57–Oct. 58	747,541	13,526	3	496	1	500	3.70
2nd	Nov. 58–Oct. 59	805,232	11,963	3	618	0	621	5.19
3rd	Nov. 59–Oct. 60	844,488	42,396	5	1,028	0	1,033	2.44
4th	Nov. 60–Oct. 61	280,972[c]	28,389	---	---	---	1,419	5.00

--- No information.

(*a*) Estimated.
(*b*) Six months only.
(*c*) Nov. 1960-Mar. 1961.

Table 12—*Case-detection During the Attack Phase in Malaria Eradication Programs in the Americas (cont.)*

Year of total coverage	Date	Number of inhabitants directly protected by spraying	Number of slides examined	Number of positive slides				Per cent positive
				P. falciparum	*P. vivax*	*P. malariae*	Total	
PERU. Total coverage began 17 November 1957								
1st	Nov. 57–Oct. 58	1,867,208	---	77	526	27	649[a]	---
(*b*)	Jan. 59–Dec. 59	2,775,694	148,413	302	4,265	51	4,658[a]	3.14
(*b*)	Jan. 60–Dec. 60	3,345,726	344,507	256	3,559	88	3,903	1.13
(*b*)	Jan. 61–Dec. 61	2,210,988	404,440	185	2,816	66	3,067	0.76
BRITISH HONDURAS. Total coverage began 4 February 1957								
1st	Feb. 57–Jan. 58	46,825	2,132	148	56	52	256	12.01
2nd	Feb. 58–Dec. 58	94,937	8,081	321	226	46	593	7.34
3rd	May 59–June 60	167,846	12,985	542	207	70	819	6.31
4th	July 60–June 61	174,487	15,149	11	71	0	82	0.54
5th	July 61–Jan. 62	73,255	5,907	0	10	0	10	0.17
DOMINICA. Total coverage began 8 June 1959								
1st	June 59–May 60	20,830	5,233	51	0	0	51	0.97
2nd	Aug. 60–Oct. 61	21,445	12,136	2[c]	0	0	2[c]	0.02
3rd	Nov. 61–Feb. 62	5,755	3,766	0	0	1	1	0.03
GRENADA. Total coverage began 12 February 1957; ended January 1960								
1st	Feb. 57–Jan. 58	52,840	3,230	123	0	0	123	3.81
2nd	Feb. 58–Jan. 59	58,196	10,954	50	0	0	50	0.46
3rd	Feb. 59–Jan. 60	59,795	5,283	2	0	0	2	0.04
JAMAICA. Total coverage began 2 January 1958								
1st	Jan. 58–Dec. 58	1,054,894	56,266	199	0	6	205	0.36
2nd	Jan. 59–Sept. 59	1,037,284	27,953	280	0	15	295	1.06
3rd	Oct. 59–Sept. 60	1,964,453	111,039	180	0	14	194	0.17
4th	Oct. 60–Sept. 61	1,041,420	172,005	30	0	15	45	0.03
ST. LUCIA. Total coverage began 16 January 1956; ended September 1959								
1st	Jan. 56–Jan. 57	72,364	4,689	63	0	9	72	1.54
2nd	Feb. 57–Dec. 57	96,326	4,288	15	0	4	19	0.44
3rd	Jan. 58–Feb. 59	113,066	8,378	29	0	9	38	0.45
4th	Mar. 59–Sept. 59	62,324	8,028	3	0	0	3	0.37
SURINAM. Total coverage began 5 May 1958								
1st	May 58–Apr. 59	343,373	37,292	3,356	71	120	3,547	9.51
2nd	May 59–Apr. 60	330,837	46,158	1,665	7	272	1,944	4.21
3rd	May 60–June 61	204,149	43,012	938	3	66	1,007	2.34
4th	July 61–Dec. 61	43,526	10,288	266	0	21	287	2.79
TRINIDAD AND TOBAGO. Total coverage began 2 January 1958								
1st	Jan. 58–Sept. 58	571,953	26,499	318	58	0	376[d]	1.41
2nd	Jan. 59–Dec. 59	726,681	101,039	63	28	1	92	0.09
3rd	Jan. 60–Dec. 60	1,176,907	91,388	9	2	0	11	0.01
4th	Jan. 61–Dec. 61	1,192,989	89,569	0	0	0	0	0.00

--- No information.

(*a*) Including undifferentiated mixed infections.
(*b*) Owing to different spray-cycle timing in different regions, these data refer to the calendar year.
(*c*) One imported case not included.
(*d*) Includes 2 positive cases found in the consolidation phase, not classified by species.

Table 13—*Case-Detection During the Consolidation Phase in Malaria Eradication Programs in the Americas*

Year of consolidation phase	Date	Estimated population in the area (in thousands)	Number of slides examined	Per cent of population sampled (a)	Total number of positive cases found	Origin of infections							Species of parasite		
								Imported							
						Indigenous	Relapsing	from abroad	from attack phase areas within country	Induced	Introduced	Unclassified	*P. vivax*	*P. falciparum*	*P. malariae*
ARGENTINA. Consolidation phase in some areas began prior to August 1959															
1st [b]	Aug. 59–June 60	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2nd [c]	July 60–July 61	750	27,480	6.3	16	–	1	–	5	–	10	–	16	–	–
3rd	Aug. 61–Dec. 61	41	16,915	99.0	1	–	1	–	–	–	–	–	1	–	–
BOLIVIA. Consolidation phase in some areas began during 1961															
(d)	Jan. 61–Dec. 61	461	11,975	2.6	14	1	1	5	7	–	–	–	14	–	–
MEXICO. Consolidation phase in some areas began during 1958															
1st	Jan. 58–Dec. 58	59	4,449	7.5	–	–	–	–	–	–	–	–	–	–	–
2nd	Jan. 59–Dec. 59	59	6,560	11.1	–	–	–	–	–	–	–	–	–	–	–
3rd	Jan. 60–Sept. 60	70	4,058	7.7	–	–	–	–	–	–	–	–	–	–	–
4th	Jan. 61–Dec. 61	11,721	745,907	6.4	3,114	1,248	446	3	384	12	90	931	3,004	91	19
PERU. Consolidation phase in some areas began during 1958															
(d)	Jan. 58–Dec. 58	14	669	4.7	3	–	–	1	–	2	–	–	1	–	2
(d)	Jan. 59–Dec. 59	14	1,378	9.8	–	–	–	–	–	–	–	–	–	–	–
(d)	Jan. 60–Oct. 60	15	5,273	42.2	3	–	–	1	–	2	–	–	1	–	2
(d)	Jan. 61–Dec. 61	47	13,088	27.8	1	–	–	–	1	–	–	–	1	–	–
VENEZUELA. Consolidation phase in some areas began prior to 1958															
(d)	Jan. 58–Dec. 58	469	69,614	14.8	50	–	–	–	–	27	23	–	46	2	2
(d)	Jan. 59–Dec. 59	685	101,878	14.9	45	37	7	1	–	–	–	–	43	2	–
(d)	Jan. 60–Dec. 60	242	35,470	14.7	17	–	–	14	–	1	2	–	16	–	1
(d)	Jan. 61–Dec. 61	173	64,522	37.3	57	–	4	15	9	–	29	–	57	–	–
FRENCH GUIANA. Consolidation phase began in all the country in 1960															
(b)	Jan. 60–Sept. 60	32	3,343	13.9	37	36	1	–	–	–	–	–	6	30	1
(b)	Jan. 61–Dec. 61	27	1,197	4.4	33	33	–	–	–	–	–	–	–	33	–

– - None.
... No information.

(a) Annual rates calculated when less than 12 months reported.
(b) No differentiation between consolidation and attack phase was made.
(c) Only for the 4th spraying cycle, Jan.-July 1961.
(d) Data refer to the calendar year.

Table 13—*Case-Detection During the Consolidation Phase in Malaria Eradication Programs in the Americas (cont.)*

Year of consolidation phase	Date	Estimated population in the area (in thousands)	Number of slides examined	Per cent of population sampled (a)	Total number of positive cases found	Origin of infections							Species of parasite		
						Indigenous	Relapsing	Imported		Induced	Introduced	Unclassified	*P. vivax*	*P. falciparum*	*P. malariae*
								from abroad	from attack phase areas within country						
GRENADA. Consolidation phase began February 1960															
1st	Feb. 60–Jan. 61	89	8,076	9.1	–	–	–	–	–	–	–	–	–	–	–
2nd	Feb. 61–Jan. 62	89	13,417	15.1	–	–	–	–	–	–	–	–	–	–	–
GUADELOUPE. Consolidation phase in some areas began prior to 1958															
(b)	Jan. 58–Dec. 58	129	4,877	3.8	–	–	–	–	–	–	–	–	–	–	–
(b)	Jan. 59–Dec. 59	133	6,391	4.8	–	–	–	–	–	–	–	–	–	–	–
(b)	Jan. 60–Dec. 60	145	7,080	4.9	–	–	–	–	–	–	–	–	–	–	–
(b)	Jan. 61–Dec. 61	186	11,857	6.4	–	–	–	–	–	–	–	–	–	–	–
JAMAICA. Consolidation phase in 5 northern parishes began July 1960															
1st	July 60–June 61	313	90,908	29.0	2	–	2	–	–	–	–	–	–	–	2
2nd c	July 61–Mar. 62	761	159,442	27.9	8	1	7	–	–	–	–	–	(d)	(d)	7 d
PANAMA CANAL ZONE. Consolidation phase began during 1960															
(b)	Jan. 60–Dec. 60	41	2,656	6.5	27	27	–	–	–	–	–	–	24	3	–
(b)	Jan. 61–Dec. 61	41	5,984	14.6	25	25	–	–	–	–	–	–	23	2	–
ST. LUCIA. Consolidation phase began October 1959															
1st	Oct. 59–Sept. 60	62	13,716	22.1	–	–	–	–	–	–	–	–	–	–	–
2nd	Oct. 60–Sept. 61	72	17,025	23.6	1	–	1	–	–	–	–	–	–	–	1
3rd	Oct. 61–Mar. 62	72	6,914	19.2	–	–	–	–	–	–	–	–	–	–	–
SURINAM. Consolidation phase in some areas began January 1961															
1st	Jan. 61–Dec. 61	115	14,894	13.0	26	–	–	–	26	–	–	–	–	23	3
TRINIDAD AND TOBAGO. Consolidation phase in Tobago began in 1958															
1st	Jan. 58–Dec. 58	160	2	0.0	2	---	---	---	---	---	---	---	---	---	---
2nd	Jan. 59–Dec. 59	160	361	0.2	5	–	–	5	–	–	–	–	1	4	–
3rd	Jan. 60–Sept. 60	185	17,612	12.7	2	–	–	2	–	–	–	–	1	1	–
4th	Jan. 61–Dec. 61	197	11,602	5.9	1	–	–	1	–	–	–	–	–	1	–

– None.
--- No information.

(a) Annual rates calculated when less than 12 months reported.
(b) Data refer to the calendar year.
(c) July 1961-December 1961, nine complete parishes and four partial parishes; since January 1962 the whole island is under consolidation.
(d) One case unclassified not included.

Table 14—*Comparative Results of Active and Passive Case-Detection in Malaria Eradication Programs in the Americas, 1961*[a]

Country or other political unit	Active case-detection				Passive case-detection				
	Average number of evaluators	Blood slides		Average production per evaluator per month	Average number of notification posts	Average of notification posts producing slides per month	Blood slides		Average of slides per month per productive notification post
		Number examined	Per cent positive				Number examined	per cent positive	
Argentina	73	109,907	0.58	125.3	1,033	281	27,952	13.98	8.3
Bolivia	68	125,459	0.38	154.4	1,629	319	21,252	1.54	5.6
Brazil (São Paulo)	74	137,668	0.45	155.0	3,349	1,232	70,834	9.40	4.8
Colombia	337	249,854	3.29	61.7	8,654	4,866	320,306	2.73	5.5
Costa Rica	22	59,576	0.96	225.6	707	255	28,317	3.90	9.3
Cuba[b]	7	19,304	0.25	229.8	895	341	71,877	4.43	17.6
Dominican Republic	6	8,370	4.80	116.3	387	109	13,576	15.62	10.4
Ecuador	60	86,036	1.18	119.5	2,944	1,085	127,133	6.86	9.8
El Salvador	31	30,496	3.43	82.0	636	490	96,804	11.90	16.5
Guatemala	64	104,913	1.75	136.6	2,009	897	114,715	1.96	10.7
Honduras	34	20,804	1.66	51.0	1,622	929	144,161	2.77	12.9
Mexico	1,018	1,128,733	0.70	92.4	34,236	5,745	445,534	0.89	6.5
Nicaragua	39	52,002	9.28	111.1	1,031	508	57,291	6.80	9.4
Panama	24	31,429	4.98	109.1	975	254	57,532	4.08	18.9
Paraguay	19	7,092	1.28	31.1	1,151[c]	---	22,071	6.55	---
Peru	97	249,825	0.54	214.6	8,534	1,560	167,703	1.02	9.0
Venezuela	240	426,887	0.29	148.3	2,262[d]	400[d]	172,384	0.29	35.9
British Honduras	4	3,048	0.30	63.5	128	99	9,307	0.15	7.8
British Guiana	7	12,480	1.12	148.6	35	12	4,409	2.06	30.6
Dominica	5	8,298	0.04	138.3	26	11	1,815	0.00	13.8
French Guiana	–	842[e]	0.71[e]	–	---	---	355	7.61	---
Grenada	5	10,731	0.00	178.8	29	18	2,041	0.00	9.5
Guadeloupe	9[f]	14,139	0.00	196.4[g]	---	---	6,305	0.00	---
Jamaica[h]	70[i]	153,957	0.02	183.3	693	155	78,776	0.01	42.4
Panama Canal Zone	3[j]	1,246	0.00	34.6	---	---	4,738	5.28	---
St. Lucia	7	6,609	0.00	78.7	83	34	11,219	0.01	27.5
Surinam	27	34,938	1.20	107.8	38	4	1,486	15.30	31.0
Trinidad and Tobago	71	100,653	0.00	118.2	81	13	518	0.19	3.3

--- No information.
– None.

(*a*) Data for entire country; not separated by attack and consolidation phase.
(*b*) Preparatory phase.
(*c*) In October 1961.
(*d*) In January 1962.
(*e*) Special survey.
(*f*) Five part-time.
(*g*) Percentage calculated on basis of five part-time evaluators equal two full-time.
(*h*) January-September.
(*i*) Includes inspectors and personnel taking slides in schools, malariometric surveys, etc.
(*j*) Part-time.

Table 15—*Quadrennial Summary of Case-Detection in the Americas, 1958-1961*

Year	Number of slides examined	Number of slides found positive	Per cent positive
1958	1,716,103	56,705	3.3
1959	2,749,234	75,612	2.8
1960	3,955,027	80,279	2.0
1961	5,275,707	99,551	1.9

Table 16—*National Budgets for Malaria Eradication in the Americas, 1958-1962*
(*In thousands of U.S. dollars*)

Country or other political unit	National budget 1958	National budget 1959	National budget 1960	National budget 1961	National commitments 1962
Argentina	309	312	751	884	1,016
Bolivia	450[a]	437[a]	400[a]	404[a]	507[a]
Brazil (excl. São Paulo)	---	1,310	2,222	2,124	8,621
Brazil (São Paulo)	514	645	1,336	1,197	---
Colombia	1,472	2,410	2,760	3,294	3,134
Costa Rica	238	289	266	254	271
Cuba	50	40[b]	126	402[c]	1,690
Dominican Republic	385	348	---	---	---
Ecuador	460	505	530	972[d]	495
El Salvador	530	543	489	564	709
Guatemala	480	485	970[d]	970[d]	485
Haiti	596	(*e*)	(*e*)	440[a]	1,300[a]
Honduras	258	145	753[d]	718[d]	710[d]
Mexico	4,128	5,540	5,320	4,875	5,200
Nicaragua	231	232	331	338[f]	(*f*)
Panama	427	433	457	419	558
Paraguay	196	202	222	222	222
Peru	815	704	803	746	746
Venezuela	7,788	7,000	4,500	3,376	3,376
British Guiana	89[g]	70[g]	12	26	54
British Honduras	38	46	51	51	56
Dominica	5	8	6	12	12
French Guiana	78	90	89	102	151
Grenada	16	20	12	10	8
Guadeloupe	95	78	114	121	125
Jamaica	274	502	539	564	441
Panama Canal Zone	50	50	50	50	50
St. Lucia	35	35	14	14	16
Surinam	153	175	211	182	---
Trinidad and Tobago	291	293	547	500	455

--- No information.

(*a*) AID counterpart funds.
(*b*) Preparatory phase.
(*c*) January-September.
(*d*) National budget plus assistance from AID.
(*e*) Program suspended.
(*f*) Government budget from July 1961 to June 1962.
(*g*) Coastal area only.

Table 17—*First Discovery of Insecticide Resistance in Anopheline Mosquitoes in the Americas, by Country and Year of Discovery, to 31 December 1961*

(Showing species, insecticide, and maximum degree of resistance found in each instance)

Country or other political unit	1958-1959[a]			1960			1961		
	Species	Insecticide	Per cent resistance (b)	Species	Insecticide	Per cent resistance (b)	Species	Insecticide	Per cent resistance (b)
Argentina	–			–			0		
Bolivia	0			0			0		
Brazil	*aquasalis*	Dieldrin	37	0			*strodei*	DDT	35
Colombia	*albimanus*	Dieldrin	17	*triannulatus*	Dieldrin	55			
	albitarsis	Dieldrin	27				*albitarsis*	Dieldrin	99
								DDT	80
Costa Rica	0			*albimanus*	Dieldrin	17[c]	0		
Cuba	*albimanus*	Dieldrin	30	0			0		
Dominican Republic	*albimanus*	Dieldrin	90	0			*albimanus*	DDT	3
Ecuador	*albimanus*	Dieldrin	94	*punctimacula*	Dieldrin	7	0		
				pseudopuncti-pennis	Dieldrin	16			
El Salvador	*albimanus*	Dieldrin	95	0			0		
		DDT	88						
Guatemala	*albimanus*	Dieldrin	98	0			0		
		DDT	85						
	pseudopuncti-pennis	Dieldrin	90						
Haiti	*albimanus*	Dieldrin	70	0			0		
Honduras	*albimanus*	Dieldrin	93	*punctimacula*	DDT	20	0		
		DDT	65						
Mexico	*albimanus*	Dieldrin	60	0			–		
	pseudopuncti-pennis	Dieldrin	95						
	quadrimacu-latus	Dieldrin	92						
		DDT	84						
Nicaragua	*albimanus*	Dieldrin	98	0			0		
		DDT	91						
	pseudopuncti-pennis	Dieldrin	60						
		DDT	12						
Panama	0			0			0		
Paraguay	0			0			0		
Peru	*pseudopuncti-pennis*	Dieldrin	51	0			0		
United States of America	*quadrimacu-latus*	Dieldrin[d]		0			0		
		DDT[e]							

– No test reports received.
0 No new resistance found during the year.

(*a*) For details, see VIII Report on the Status of Malaria Eradication in the Americas (*Official Document No.* 36, pp. 229-269).
(*b*) Percentage resistant is the percentage surviving the LC_{100} exposure for susceptible strains.
(*c*) A solitary finding, not confirmed in limited repeat tests during 1961.
(*d*) Discovered in 1954.
(*e*) Discovered in 1950 in larvae.

Table 17—*First Discovery of Insecticide Resistance in Anopheline Mosquitoes in the Americas, by Country and Year of Discovery, to 31 December 1961 (cont.)*

(Showing species, insecticide and maximum degree of resistance found in each instance)

Country or other political unit	1958-1959[a]			1960			1961		
	Species	Insecticide	Per cent resistance (b)	Species	Insecticide	Per cent resistance (b)	Species	Insecticide	Per cent resistance (b)
Venezuela	*albitarsis*	Dieldrin	85	0			*nuñez-tovari*	DDT	20
	aquasalis	Dieldrin	80				*pseudopuncti-pennis*	Dieldrin	75
	strodei	Dieldrin	70						
	trianulatus	Dieldrin	81						
British Honduras	*albimanus*	Dieldrin	43	0			–		
French Guiana	0			–			0		
Guadeloupe	–			–			0		
Jamaica	*albimanus*	Dieldrin	90	0			–		
Surinam	0			–			0		
Trinidad and Tobago	*aquasalis*	Dieldrin	96	*neomaculi-palpus*	Dieldrin	70	–		

– No test reports received.
0 No new resistance found during the year.

(*a*) For details, see VIII Report on the Status of Malaria Eradication in the Americas (*Official Document No.* 36, pp. 229-269).
(*b*) Percentage resistant is the percentage surviving the LC_{100} exposure for susceptible strains.

Table 18—*PASB/WHO Full-time Professional and Technical Staff Assigned to Country, Intercountry, and Interzone Malaria Eradication Projects in the Americas, 1958 to 1 July 1962*

Country or other political unit	Medical officers					Sanitary engineers					Sanitary inspectors					Entomologists					Other				
	1958	1959	1960	1961	1962	1958	1959	1960	1961	1962	1958	1959	1960	1961	1962	1958	1959	1960	1961	1962	1958	1959	1960	1961	1962
Argentina	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bolivia	1	1	1	2	1	1	1	1	1	1	3	4	4	4	3	–	–	–	–	–	–	–	–	–	–
Brazil (excl. São Paulo)	1	–	–	–	2	1	1	1	1	2	–	–	–	–	2	–	–	–	–	–	–	–	–	–	1[a]
Brazil (São Paulo)	–	–	–	–	–	1	1	1	1	1	2	3	3	3	1	–	–	–	–	–	–	–	–	–	–
Colombia	1	2	2	2	2	1	1	1	1	1	4	6	6	5	4	–	–	–	1	–	1[b]	1[b]	1[b]	1[b]	1[b]
Costa Rica	1	1	1	1	1	–	–	–	–	–	1	1	1	2	2	–	–	–	–	1	–	–	–	–	–
Cuba	–	1	1	1	1	–	–	–	1	1	–	–	–	1	2	–	–	–	–	–	–	–	–	–	–
Dominican Republic	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	–	–	–	–	–	–	–	–	–	–
Ecuador	1	1	1	2	2	1	1	1	1	1	2	4	4	4	4	–	–	–	–	1	–	–	–	–	–
El Salvador	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	–	–	–	–	–	–	–	–	1[c]	1[c]
Guatemala	1	1	1	1	1	–	1	1	1	1	2	3	2	3	3	–	–	–	–	–	–	–	–	–	–
Haiti	2	–	–	1	2	1	–	–	1	1	3	2	2	2	3	–	–	–	–	–	3[d]	2[e]	1[c]	–	–
Honduras	1	1	1	1	1	–	1	1	1	1	1	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Mexico	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	–	–	1[e]	2[f]	2[f]
Nicaragua	1	1	1	1	1	–	1	1	1	1	1	2	2	2	2	–	–	–	–	–	–	–	–	1[c]	1[c]
Panama	1	1	1	1	1	1	1	1	–	1	1	2	2	2	2	–	–	–	1	–	–	–	–	–	–
Paraguay	1	–	1	1	1	1	1	1	1	1	1	2	2	2	2	–	–	–	–	1	–	–	–	–	–
Peru	1	1	1	1	1	1	1	1	1	1	3	5	5	5	5	–	–	–	–	–	–	–	–	–	–
British Honduras	–	1	1	1	1	–	–	–	–	–	–	1	1	1	1	–	–	–	–	–	–	–	–	–	–
Jamaica	1	1	1	1	1	1	1	1	–	–	2	1	2	2	2	–	–	–	–	–	–	–	1[g]	1[g]	1[g]
Surinam	1	–	1	1	1	–	–	–	–	–	1	2	2	2	2	–	–	–	–	–	–	–	–	–	1[g]
Windward Islands	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
Interzone or intercountry projects	6	9	9	9	9	3	4	3	3	2	2	3	1	1	1	3	4	6	7	5	3	11[h]	14[i]	13[j]	13[k]
Total	24	25	27	31	34	16	19	18	18	19	35	52	49	51	51	4	5	7	10	9	7	14	18	19	21

– None.

(*a*) Administrative officer.
(*b*) Malaria statistician.
(*c*) Entomological aide.
(*d*) One health educator and two administrative officers.
(*e*) Engineering aide.
(*f*) Health educator and assistant engineer.
(*g*) Health educator.
(*h*) Three administrative officers, one laboratory technician, two parasitologists, and five entomological aides.
(*i*) Six administrative officers, two parasitologists, two entomological assistants, and four entomological aides.
(*j*) Six administrative officers, two parasitologists, one entomological assistant, two entomological aides, one laboratory technician, and one statistician.
(*k*) Five administrative officers, two parasitologists, one entomological assistant, three entomological aides, one laboratory technician, and one operations analyst.

Table 19—*Personnel Trained in Malaria Eradication Techniques at International Centers, 1949-1961 and First Semester of 1962*[a]

Country or other political unit	Total	Venezuela				Mexico			Jamaica									Brazil			
		1949-1961		1962		1957-1960			1958-1961[b]					1962[c]					1958-1962			
		Physicians	Sanitary engineers	Physicians	Sanitary engineers	Physicians	Sanitary engineers	Sanitary inspectors	Physicians	Sanitary engineers	Sanitary inspectors	Entomologists	Others	Physicians	Sanitary engineers	Sanitary inspectors	Entomologists	Other	Physicians	Sanitary engineers	Entomologists	Other
Argentina	23	2	1	2	–	4	3	7	–	–	–	–	–	–	–	–	–	–	1	–	1	2
Bolivia	35	9	7	–	–	3	6	5	–	–	–	–	1	1	–	–	–	–	–	–	3	–
Brazil	62	11	1	1	–	19	16	13	1	–	–	–	–	–	–	–	–	–	–	–	–	–
Chile	7	1	–	–	–	1	1	2	1	–	–	–	–	–	–	–	–	–	1	–	–	–
Colombia	76	29	5	–	–	11	7	5	–	–	–	–	–	–	–	–	–	–	4	3	6	–
Costa Rica	11	3	1	–	–	1	1	4	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Cuba	14	3	1	–	–	5	1	2	–	–	–	–	–	–	–	–	–	–	–	–	2	–
Dominican Republic	6	2	–	–	–	1	1	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Ecuador	16	6	1	–	–	1	–	4	–	–	–	–	–	1	–	–	–	–	–	2	1	–
El Salvador	13	1	–	–	–	2	–	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Guatemala	23	3	1	–	–	2	3	12	–	–	–	–	–	–	–	–	–	–	–	–	2	–
Haiti	23	4	1	1	1	–	–	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Honduras	15	–	2	–	–	–	–	12	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Mexico	31	14	10	–	–	–	2	1	–	–	–	–	–	–	–	–	–	–	–	–	4	–
Nicaragua	13	2	1	–	–	2	–	6	–	–	–	–	–	–	–	–	–	–	1	–	1	–
Panama	13	1	–	–	–	1	1	9	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Paraguay	21	4	1	1	1	2	–	9	–	–	–	–	–	–	–	–	–	–	–	1	2	–
Peru	39	3	2	–	–	9	7	12	1	–	1	–	–	–	–	–	–	–	–	–	4	–
Puerto Rico	14	–	1	–	–	–	–	1	–	–	12	–	–	–	–	–	–	–	–	–	–	–
United States of America	36	–	–	–	–	–	2	1	2	7	9	6	4	–	–	–	2	3	–	–	–	–
Uruguay	3	1	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Venezuela	4	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	1
British Guiana	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
British Honduras	6	–	–	–	–	–	–	3	–	–	3	–	–	–	–	–	–	–	–	–	–	–
Dominica	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
Surinam	11	–	–	–	–	–	–	–	–	–	2	–	4	–	–	4	–	1	–	–	–	–
Other WHO Regions	215	2	–	–	–	1	–	–	73	38	17	23	26	16	2	9	4	1	1	–	–	2
Total	726	101	36	5	2	66	51	137	78	46	46	29	35	18	2	14	6	5	9	7	28	5

– None.

(*a*) Excluding nationals of the host country.
(*b*) 94 sponsored by AID and 81 by WHO.
(*c*) 22 sponsored by AID and 17 by WHO.

Table 20—*Fellowships for Study Travel in Malaria Eradication, 1958-1961*[a]

Country or other political unit	Total	Physicians				Engineers		Entomologists			Other			
		1958	1959	1960	1961	1960	1961	1958	1959	1961	1958	1959	1960	1961
Argentina	1	–	–	–	–	–	1	–	–	–	–	–	–	–
Bolivia	2	–	–	–	–	–	–	–	–	1	–	–	–	1[b]
Brazil	21	9	2	3	1	2	–	3	1	–	–	–	–	–
Chile	1	–	–	1	–	–	–	–	–	–	–	–	–	–
Colombia	6	1	–	1	1	–	–	1	–	2	–	–	–	–
Costa Rica	3	1	–	–	–	–	1	–	–	1	–	–	–	–
Cuba	7	–	1	2	1	–	–	–	–	1	–	–	–	2[c]
Dominican Republic	1	–	–	–	–	–	1	–	–	–	–	–	–	–
Ecuador	4	–	–	1	1	–	2	–	–	–	–	–	–	–
El Salvador	3	–	–	–	2	–	–	–	–	–	–	–	1[d]	–
Haiti	9	2	–	2	2	–	–	–	–	–	2[d]	–	1[e]	–
Honduras	3	–	–	–	2	–	–	–	–	–	1[f]	–	–	–
Mexico	7	3	–	1	–	–	–	–	1	2	–	–	–	–
Nicaragua	4	–	–	–	3	–	–	–	–	–	–	–	–	1[c]
Panama	1	–	–	–	1	–	–	–	–	–	–	–	–	–
Paraguay	4	–	–	–	–	–	–	–	–	3	1[g]	–	–	–
Peru	1	–	–	–	–	–	–	–	–	1	–	–	–	–
Venezuela	5	3	–	1	–	–	–	–	–	–	–	–	–	1[c]
British Guiana	5	–	–	–	–	–	–	–	–	–	–	4[h]	–	1[c]
British Honduras	1	–	–	–	–	–	–	–	–	–	–	–	–	1[d]
Dominica	3	–	–	–	–	–	–	–	–	–	1[d]	–	1[d]	1[c]
Grenada	2	–	–	–	–	–	–	–	–	–	1[d]	–	1[d]	–
Guadeloupe	1	1	–	–	–	–	–	–	–	–	–	–	–	–
Jamaica	6	–	–	–	–	–	–	–	–	–	–	–	–	6[c]
St. Lucia	1	–	–	–	–	–	–	–	–	–	–	–	–	1[d]
Surinam	8	–	–	–	–	–	–	–	–	–	2[i]	–	–	6[c]
Trinidad and Tobago	1	–	–	–	–	–	–	–	–	–	1[d]	–	–	–
Total	111	20	3	12	14	2	5	4	2	11	9	4	4	21

– None.

(*a*) In the years not shown, no fellowships were awarded.
(*b*) Health educator.
(*c*) Sanitarian.
(*d*) Laboratory technician.
(*e*) Statistician.
(*f*) Chemist.
(*g*) Accountant.
(*h*) Three laboratory technicians, and one pharmacist.
(*i*) One sanitary inspector and one laboratory technician.

Table 21—*Equipment and Supplies, Excluding Drugs, Contributed by PAHO to Malaria Eradication Programs in the Americas, 1958 to December 1961*

Country or other political unit	Protective equipment						Laboratory supplies						Others				
	Helmets	Bands	Visors	Gloves	Ponchos	Life-jackets	Mailing tubes	"Surgi-tube" (rolls)	Plastic tubes	Micro-scopes	Micro-scope ac-cesories	Slides (gross)	Vehicles and motors (a)	Insecti-cides (lbs.)	Kardex files	Test kits (adults)	Test kits (larvae)
Argentina	–	–	–	–	–	–	6,000	10	20	–	20	–	–	–	–	1	–
Bolivia	50	180	160	40	80	55	10,000	10	20	–	–	–	3	–	–	4	–
Brazil	–	–	–	–	–	45	283,000	20	40	71	1	–	2	–	–	27	6
Colombia	–	–	–	–	–	450	100,000	10	20	2	–	–	–	–	–	17	2
Costa Rica	–	–	–	–	–	35	500	10	40	–	–	–	–	–	40	1	–
Cuba	–	–	–	–	–	–	10,000	20	20	10	1	–	1	–	–	–	3
Dominican Republic	166	332	664	166	166	–	7,000	12	20	2	–	–	–	–	–	2	–
Ecuador	206	412	824	206	206	151	50,000	30	20	–	10	–	1	–	–	4	–
El Salvador	230	476	952	238	238	30	10,000	10	20	–	–	–	1	600	12	4	1
Guatemala	397	500	1,000	250	255	24	25,000	10	40	1	–	1,340	1	–	6	2	1
Haiti	341	682	1,364	341	341	–	4,500	11	–	–	–	–	2	–	–	1	1
Honduras	165	330	660	165	165	10	15,000	10	40	–	–	70	–	–	1	2	–
Mexico	–	–	–	–	–	75	400,040	20	–	–	–	–	–	–	–	27	1
Nicaragua	117	234	468	117	117	–	16,000	10	40	–	–	22,680	1	–	31	4	1
Panama	137	274	548	137	137	50	14,000	20	40	1	–	35	–	–	25	3	–
Paraguay	174	808	408	102	773	40	30,000	18	20	–	–	–	2	–	–	5	1
Peru	618	1,236	3,672	368	668	200	75,000	10	20	–	–	–	(1)	46,410	–	3	–
British Guiana	36	72	144	96	36	–	2,000	–	–	–	–	–	–	–	–	–	–
British Honduras	38	38	76	19	19	10	900	10	20	–	–	–	2	–	–	1	–
Dominica	–	–	–	–	–	–	630	–	–	–	–	–	1[b]	–	–	–	–
Grenada	–	–	–	–	–	–	120	–	–	–	–	–	–	–	–	–	–
Jamaica[c]	25	200	400	194	209	–	22,500	10	20	–	–	–	1	–	–	8	5
St. Lucia	–	–	–	–	–	–	110	10	20	–	–	–	3[d]	–	–	–	–
Surinam	5	10	20	5	5	–	2,550	10	20	–	–	–	1(4)	–	–	2	1
Trinidad and Tobago	–	–	–	–	–	–	1,150	10	20	–	–	–	–	–	–	3	1
Total[e]	2,705	5,784	11,360	2,444	3,415	1,175	1,086,000	291	520	87	32	24,125	22(5)	47,010	115	121[f]	24

– None.

(*a*) All station wagons unless otherwise indicated; marine motors in parentheses.
(*b*) Motorcycle.
(*c*) 210,000 imperial gallons of kerosene also provided.
(*d*) One station wagon and two motorcycles.
(*e*) Plus approximately US $5,000 in miscellaneous items.
(*f*) Plus 40 delivered to the Zone Offices for emergency distribution and intercountry projects.

Table 22—*Drugs Provided for Malaria Eradication Programs in the Americas by PAHO, 1958-1961*

(In thousands of tablets)

Country or other political unit	1958-1960				1961[a]					Total				
	Chloroquine 150 mg.	Primaquine		Pyrimethamine 25 mg.	Chloroquine 150 mg.	Primaquine		Pyrimethamine 25 mg.	Chloroquine Primaquine combined	Chloroquine 150 mg.	Primaquine		Pyrimethamine 25 mg.	Chloroquine Primaquine combined
		15 mg.	5 mg.			15 mg.	5 mg.				15 mg.	5 mg.		
Argentina	1,144	35	15	297	–	20	20	–	–	1,144	55	35	297	–
Bolivia	1,619	25	20	21	–	–	–	–	–	1,619	25	20	21	–
Brazil (excl. São Paulo)	18,853	270.5	130	–	–	–	–	–	200	18,853	270.5	130	–	200
Brazil (São Paulo)	2,143	37.5	–	184	–	–	–	–	–	2,143	37.5	–	184	–
Colombia	6,876	137.5	–	664	–	–	–	–	–	6,876	137.5	–	664	–
Costa Rica	589	11	6	98	324	79	13	115	30	913	90	19	213	30
Cuba	50	8	2	–	780	22	7	80	–	830	30	9	80	–
Dominican Republic	2,234	39	164	10	–	–	–	–	–	2,234	39	164	10	–
Ecuador	2,129	148.5	120	140	461	–	–	55	–	2,590	148.5	120	195	–
El Salvador	1,520	76.5	50	118	–	36	–	–	300	1,520	112.5	50	118	300
Guatemala	2,488	282	30	27	48	51	8	–	160	2,536	333	38	27	160
Haiti	3,277	57.5	–	280	350	–	–	–	–	3,627	57.5	–	280	–
Honduras	1,026	31	14	88	516	17	18	–	30	1,542	48	32	88	30
Mexico	7,500	252	160	400	–	411	545	1,800	–	7,500	663	705	2,200	–
Nicaragua	827	17.5	6	6	550	62	14	–	30	1,377	79.5	20	6	30
Panama	1,328	37.5	20	110	47	5	–	36	–	1,375	42.5	20	146	–
Paraguay	560	25	5	48	900	–	–	–	–	1,460	25	5	48	–
Peru	3,132	80.5	40	196	2,200	50	13	–	–	5,332	130.5	53	196	–
British Guiana[b]	10	1	–	260	76	3	3	–	–	86	4	3	260	–
British Honduras	185	7	2	6	5	5	5	–	–	190	12	7	6	–
Dominica	50	1	–	45	40	–	–	–	–	90	1	–	45	–
Grenada[c]	43	0.5	–	45	–	–	–	–	–	43	0.5	–	45	–
Jamaica	880	18	–	288	–	–	–	–	50	880	18	–	288	50
St. Lucia[d]	68	1	–	70	–	–	–	–	–	68	1	–	70	–
Surinam	626	9	10	247	200	–	–	250	200	826	9	10	497	200
Trinidad and Tobago[e]	964	1,058	869	120	–	–	–	60	–	964	1,058	869	180	–
Total	60,121	2,667	1,663	3,768	6,497	761	646	2,396	1,000	66,618	3,428	2,309	6,164	1,000

– None.

(*a*) Figures revised according to transfers among some countries in 1961.
(*b*) During 1961, 2,000 lbs. of chloroquine diphosphate powder and 350 lbs. of tricalcium phosphate were also provided.
(*c*) During 1961, 20,000 tablets of aspirin were also provided.
(*d*) During 1961, 36,000 tablets of aspirin were also provided.
(*e*) During 1961, 400,000 tablets of camoprim were also provided.

Table 23—*International Contributions to Malaria Eradication Programs in the Americas, 1958-1961 and Estimated 1962*

(*U.S. dollars*)

Country or other political unit	Date of initiation of total coverage	1958-1961				1962 (estimated)			
		PAHO/SMF	WHO/TA	UNICEF[a]	AID(USA) (fiscal year)[b]	PAHO/SMF	WHO/TA	UNICEF[a]	AID(USA) (fiscal year)[b]
Argentina	Aug. 1959	35,372	–	345,000	–	39,124	–	69,000	–
Bolivia	Sept. 1958	268,549	59,762	654,000	1,727,000[c]	96,929	14,530	90,000	–
Brazil (excl. São Paulo)	Aug. 1959[d]	339,719	–	–	8,232,000	273,524	–	–	1,900,000
Brazil (São Paulo)	Jan. 1960	164,358	–	–		93,416	–	–	
Colombia	Sept. 1958	479,807	17,031	3,189,000	1,756,000	200,934	–	580,000	150,000
Costa Rica	July 1957	135,605	–	195,000	–	72,690	–	80,000	–
Cuba	1962	132,274	–	–	–	–	76,960[e]	–	–
Dominican Republic	June 1958	252,188	–	473,000	–	87,854	–	250,000	–
Ecuador	Mar. 1957	214,233	81,122	973,000	740,000	126,343	19,960	338,000	420,000
El Salvador	July 1956	233,893	28,401	961,000	–	99,945	–	307,000	–
Guatemala	Aug. 1956	242,040	34,511	875,000	1,320,000	109,954	–	339,000	517,000
Haiti	Jan. 1962[f]	458,173	19,336	350,000	880,000	103,591	–	275,000	945,000
Honduras	July 1959	151,432	36,909	613,000	1,293,170	83,363	–	204,000	410,000
Mexico	Jan. 1957	160,134	222,810	7,490,000	–	307,717	71,422	930,000	–
Nicaragua	Nov. 1958	194,452	6,192	590,000	800,000	83,616	–	226,000	433,000
Panama	Aug. 1957	162,315	39,408	412,000	–	89,422	–	250,000	–
Paraguay	Oct. 1957	154,835	29,577	318,000	275,000	101,451	–	–	–
Peru	Nov. 1957	286,781	90,903	1,568,000	100,000	88,781	34,159	330,000	–
Venezuela	1945	5,471	–	–	–	830	–	–	–
British Guiana	Jan. 1947	42,518	–	11,000	–	38,411	–	9,000	–
British Honduras	Feb. 1957	88,987	–	74,000	–	58,660	–	30,000	–
Dominica	June 1959	14,693	–	14,500	–	3,000	–	2,000	–
French Guiana	May 1948	–	–	–	–	–	–	–	–
Grenada	Feb. 1957	30,715	–	14,500	–	12,499	–	–	–
Guadeloupe	Nov. 1955	1,226	–	–	–	–	–	–	–
Jamaica	Jan. 1958	237,244	–	544,600	57,000	61,727	–	20,000	15,000
Panama Canal Zone	---	–	–	–	–	–	–	–	–
St. Lucia	Jan. 1956	41,514	–	10,500	–	12,498	–	–	–
Surinam	May 1958	161,610	–	116,800	–	89,956	–	20,000	–
Trinidad and Tobago	Jan. 1958	29,713	–	278,000	–	1,650	–	–	–
Intercountry projects and general services		3,556,182[g]	–	–	–	911,959[h]	–	–	–
Total		8,276,033	665,962	20,069,900	17,180,170	3,249,844	217,031	4,349,000	4,790,000

--- No information. – None.

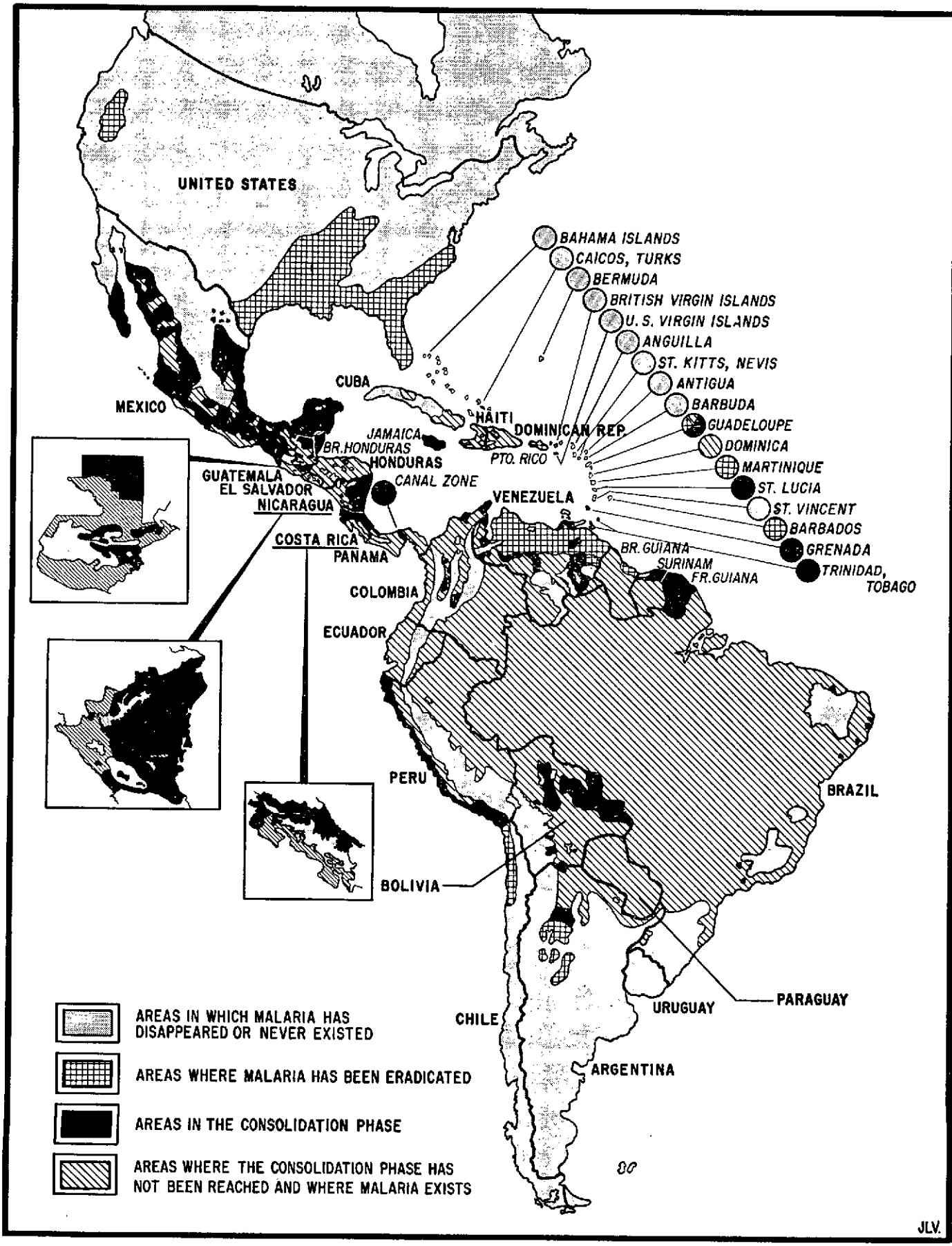
(*a*) UNICEF contributions are listed under year of implementation even though allocation may have been made in a previous year.

(*b*) AID fiscal year does not necessarily coincide with fiscal years of the countries shown. (*c*) Counterpart funds.

(*d*) Program developed by stages; date of first area shown. (*e*) WHO/MESA funds. (*f*) Reinitiated in January 1962 after suspension in 1958.

(*g*) PAHO/SMF and estimated PAHO/Reg. funds. (*h*) PAHO/SMF, PAHO/Reg., and WHO/Reg. funds.

SMF = Special Malaria Fund. MESA = Malaria Eradication Special Account.



STATUS OF THE MALARIA ERADICATION PROGRAM IN THE AMERICAS, 1st. AUGUST 1962.

Annex 3

ESTIMATED REQUIREMENTS FOR THE SPECIAL MALARIA FUND OF THE PAN AMERICAN HEALTH ORGANIZATION [1]

The XIII Meeting of the Directing Council of the Pan American Health Organization (Washington, D.C., October 1961), in Resolution XXVI,[2] took note of the estimates for the future requirements for the Special Malaria Fund of the Pan American Health Organization (Document CD13/20);[3] requested the Director to prepare annual revisions of these estimates for study by the Directing Council; and urged the Governments to support the Fund so that eradication activities may proceed as rapidly as possible.

As was mentioned in the X Report on the status of malaria eradication in the Americas (Document CSP16/20),[4] the Organization is expanding its active participation in field research projects, in cooperation with some Governments, to determine the effectiveness of mass drug treatment, of the use of larvicides, etc., and to obtain experience in the managing and costing of these complementary methods of attack in areas where the available insecticides alone cannot halt the transmission of malaria.

Simultaneously, almost all programs are intensifying their epidemiological activities to the maximum of their present financial resources, in order to determine the extent of the disappearance of malaria from wide areas and to measure the limits and the magnitude of the remaining "hard core" problem areas.

During 1962, the supply of drugs from PAHO for both radical treatment of cases in areas of disappearing malaria and mass chemoprophylaxis projects, has been substantially increased. Moreover, a pilot project of larviciding is being furnished with special equipment and materials. A variety of larvicides, new and old, such as Paris green, and equipment for dusting by hand and air are among the items provided. These operations require that the PAHO Special Malaria Fund give increasing assistance to Governments.

It is well known that mass drug treatment and larviciding cost more than house spraying with insecticides, but whenever the available insecticides alone cannot interrupt transmission in an area of refractory malaria, there is no other alternative than to make an additional effort; areas already freed of the disease must be protected at all costs. In the light of present experience, a mass drug treatment costs approximately $2.65 per capita per year, of which $0.65 is the price of drugs and $2.00 the cost of distribution, including supervision, transportation, etc. Unless a new drug with long-lasting effect becomes available, mass chemoprophylaxis must be made at intervals of two or four weeks, depending upon the prevalence of malaria in the area. Unfortunately, we have not yet gained sufficient experience from which to estimate the per capita cost of larviciding.

In addition, it is important to state that most of the present campaigns do not have an adequate program of epidemiological operations, as recommended by the WHO Expert Committee on Malaria.

The estimate for the Special Malaria Fund for 1963, as contained in *Official Document No.* 40 (Program and Budget, 1963-1964), is $3,249,137. This sum will cover the present assistance to the Governments, but may well need a substantial increase if the Organization is to be responsible for providing all drugs and/or equipment and larvicides required by problem areas even now known to exist in the Hemisphere.

The possibility of discovery of new problem areas as the campaign presses forward must be kept in mind as a factor which could require future changes in program and budget.

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[1] Document CSP16/25.

[2] *Official Document PAHO* **41**, 29-30.

[3] *Ibid.*, 319-340.

[4] See Annex 2, pp. 48-49.

Annex 4

REPORT ON THE STATUS OF SMALLPOX ERADICATION IN THE AMERICAS [1]

Background

The Governing Bodies of PAHO/WHO have expressed their interest in, and concern with, smallpox in the Americas and its eradication in a series of resolutions, which are set out chronologically below:

(a) May 1949, 7th Meeting of the PAHO Executive Committee, Washington, D.C.: Resolution XIII [2] approved a proposal of the Director of the Bureau that the countries of the Hemisphere cooperate in the execution of programs aimed primarily at the eradication of smallpox in the Americas; and authorized the Director to discuss this problem with the Governments and to offer them the cooperation of PASB/WHO.

(b) October 1950, XIII Pan American Sanitary Conference, Santo Domingo, Dominican Republic: Resolution XIX [3] recommended to the countries the development of systematic programs of smallpox vaccination and revaccination with a view to eradicating the disease; and resolved to develop these programs under the auspices of the PASB, which in agreement with the interested countries would take the necessary measures to solve the problems that might arise, whether sanitary, economic, or legal.

(c) September 1951, V Meeting of the PAHO Directing Council, III Meeting of the WHO Regional Committee, Washington, D.C.: Resolution XXXII [4] called the attention of Governments to the Fourth World Health Assembly recommendation on raising the level of protection against smallpox.

(d) September 1952, VI Meeting of the PAHO Directing Council, IV Meeting of the WHO Regional Committee, Havana, Cuba: Resolution IV-1-C [5] approved the sum of $75,000 from the Working Capital Fund for the initiation of a program to eradicate smallpox. Resolution XXIII [6] authorized the Executive Committee to include the supplementary program against smallpox in the intercountry programs of the 1954 PAHO budget and to assign an amount sufficient to ensure its continuity.

(e) October 1953, VII Meeting of the PAHO Directing Council, V Meeting of the WHO Regional Committee, Washington, D.C.: Resolution III-1-C [7] resolved to give special importance to the eradication of communicable diseases such as smallpox. Resolution XXVII,[8] in reply to a WHO inquiry requesting suggestions from the Regional Committee on which to base a study of measures for a world-wide campaign against smallpox, stated that since 1950 PAHO had considered the execution of smallpox eradication campaigns to be one of its basic programs; it suggested that WHO promote intergovernmental agreements with a view to preventing border epidemics, promote the production of high-quality glycerinated or dried vaccine and for this purpose provide equipment or advisory services, or both, according to the needs of the countries, and furnish advisory services to countries desiring to intensify or reorganize their vaccination programs. It further recommended to the countries that smallpox vaccination campaigns be an integral part or the starting point of permanent public health programs.

(f) October 1954, XIV Pan American Sanitary Conference, VI Meeting of the WHO Regional Committee, Santiago, Chile: Resolution XIII [9] authorized the Director to use $144,089 of the 1953 surplus funds for intensifying the smallpox campaign in the Americas.

(g) September 1958, XV Pan American Sanitary

[1] Document CSP16/11.
[2] Document CE7.W-17, mimeographed.
[3] *PASB Publication* **257**, 17-18.
[4] *PASB Publication* **270**, 37-38.
[5] *Official Document PAHO* **2**, 8-9.
[6] *Ibid.*, 18-19.
[7] *Official Document PAHO* **8**, 7-8.
[8] *Ibid.*, 21-22.
[9] *Official Document PAHO* **14**, 627.

Conference, X Meeting of the WHO Regional Committee, San Juan, Puerto Rico: Resolution VI[1] declared that the eradication of smallpox was a public health necessity urgently requiring the attention of all the countries of the Americas; urged the Governments of countries where smallpox still existed to carry out nation-wide plans for eradication; requested the cooperation of Governments in supplying smallpox vaccine and technical advice so as to eradicate smallpox throughout the Hemisphere; recommended that PASB take all necessary measures to reach this goal, including collaboration in vaccine production, advice in campaign organization, and the holding of intercountry meetings to coordinate activities; and requested PASB to prepare a definition of eradication suitable for uniform application in the countries.

(h) September 1959, XI Meeting of the PAHO Directing Council, XI Meeting of the WHO Regional Committee, Washington, D. C.: Resolution XXI[2] expressed satisfaction that smallpox had already disappeared in some countries of the Americas and that nation-wide and intensive campaigns were being conducted in others; recommended that Governments give special attention to the maintenance of high levels of immunity in their countries; called upon the Governments of countries where smallpox still existed and nation-wide vaccination programs had not yet been initiated to undertake such programs as soon as possible; and recommended that Governments study ways and means of producing and storing sufficient quantities of smallpox vaccine for national vaccination programs and the control of possible epidemics.

(i) August 1960, XII Meeting of the PAHO Directing Council, XII Meeting of the WHO Regional Committee, Havana, Cuba: Resolution XVII[3] urged Governments of countries where smallpox still existed but where no eradication programs had been undertaken to implement such programs as soon as possible; recommended that Governments provide the public health services with the necessary facilities for the laboratory diagnosis of suspect cases of smallpox; and called the attention of Governments to the importance of the correct application of the special measures concerning smallpox set forth in the *International Sanitary Regulations*.[4]

(j) October 1961, XIII Meeting of the PAHO Directing Council, XIII Meeting of the WHO Regional Committee, Washington, D. C.: Resolution XXXII[5] took note of the report of the Director on the status of the smallpox eradication program in the Americas; approved the criteria for smallpox eradication proposed by the PASB/WHO; urged Governments of countries that had not yet eliminated smallpox to accelerate or initiate eradication programs; recommended that the Governments endeavor to produce smallpox vaccines in amounts sufficient not only to meet the needs of their own countries but also to maintain a reserve for meeting emergency situations and for rendering assistance to other countries that may require the vaccine; and recommended that so long as smallpox continued to represent an international problem the countries endeavor to maintain adequate levels of immunity in the population, and that they ensure strict application of the provisions of the *International Sanitary Regulations*, especially Article 3 on the notification of cases.

The resolutions summarized above clearly demonstrate the resolve of the Governing Bodies of PAHO to eliminate smallpox from the Western Hemisphere as soon as possible by means of the extensive and orderly use of vaccination.

Criteria for the Eradication of Smallpox

The XV Pan American Sanitary Conference requested PASB to prepare a definition of smallpox eradication that would be applicable to all countries. After thorough study and consultation with scientific authorities,[6] criteria for the eradication of smallpox were drawn up, and after discussions with the World Health Organization these criteria were submitted to the XIII Meeting of the Directing Council in October 1961, which unanimously approved them. These criteria are as follows:

From a practical viewpoint, countries in which smallpox is endemic may consider the disease eradicated when no new cases of smallpox occur during the three years immediately following the completion of a suitable vaccination campaign.

Although the particular conditions in individual coun-

[1] *Official Document PAHO* **27**, 26-27.
[2] *Official Document PAHO* **32**, 25.
[3] *Official Document PAHO* **36**, 22.
[4] *International Sanitary Regulations, Annotated Edition.* Geneva, World Health Organization, 1957, 129 p.
[5] *Official Document PAHO* **41**, 32-33.
[6] *Official Document PAHO* **27**, 26-27.

tries may require a change in the manner of conducting the vaccination program, it is generally accepted that the correct vaccination of 80 per cent of each of the sectors of the population, within not more than five years, will result in the disappearance of smallpox.

Countries where smallpox has been eradicated should adopt measures to maintain such eradication through either a permanent immunization program or, in the event of the disease being reintroduced into the country, the combined application of isolation and immunization measures. In countries exposed to the risk of the introduction of smallpox—for example, when the disease is endemic in neighboring countries—it is recommended that an attempt be made to maintain suitable levels of immunity in the population through: (a) the vaccination of all new members of the population; and (b) the periodic revaccination of the population, especially the more exposed sectors.

In view of increasing international travel, the strict application of the pertinent provisions of the International Sanitary Regulations is recommended as a measure to protect countries free from the disease until such time as smallpox eradication is accomplished throughout the world.[1]

Extent of the Problem

Between 1947 and 1961, 165,846 cases of smallpox were reported to the Pan American Sanitary Bureau.

Table 1 shows the distribution of smallpox in the Western Hemisphere, by country and by year. From 1951 onwards the total annual number of cases remained more or less stationary until 1954, when there was a considerable increase; the number then fell progressively until 1958, when it began to rise, only to diminish again in 1961.

Of the 1,923 cases of smallpox reported to PASB in 1961, 1,411 (73.37 per cent) occurred in Rio de Janeiro, Brazil; 491 (25.53 per cent) in Ecuador; 16 (0.83 per cent) in Colombia; 4 (0.20 per cent) in Argentina; and 1 (imported) in Uruguay. In 1962, up to 30 May, Argentina had reported 3 cases, Brazil 244 (State of Guanabara only), and Ecuador 74.

Table 1 also shows that smallpox occurred in all the countries of South America in the last 15 years. The disease spread rapidly from one country to another, and in all of them gave rise to epidemics of various magnitudes that caused serious harm. In some, the disease found favorable conditions and became endemic; in others, soundly conceived vaccination programs carried on for short periods of time led, or are leading, to the disappearance of the disease. Smallpox no longer exists in Bolivia, Chile, Paraguay, Peru, Venezuela, and British Guiana. It is about to disappear in Argentina,, and Ecuador may be able to eliminate it in the near future. In Colombia the last reported cases occurred in August 1961. In Brazil, on the other hand, the number of smallpox cases continued to increase.

Mexico eliminated smallpox in 1952.

Except for Guatemala, where a case of smallpox was reported in 1953; Panama, where cases occurred in 1947 and in 1958; and British Honduras, where there were cases in 1948, the countries of Central America are free of the disease.

In the Caribbean area, smallpox cases occurred only in Martinique (1951), in the Netherlands Antilles (1951), and in Trinidad and Tobago (1948).

Owing to the lack of regular smallpox vaccination programs most of the population of the countries and territories of Central America, Panama, and the Caribbean area is susceptible to the disease. The same holds true in Uruguay (Table 2).

In Costa Rica, the Dominican Republic, Guatemala, Haiti, and Honduras practical measures have recently been, or will soon be, taken to develop smallpox vaccination programs aimed at raising the level of immunity.

Smallpox vaccine of acknowledged efficacy, easy to produce and simple to apply, has been known for slightly over 150 years. New techniques have led to the preparation of lyophilized vaccine that can withstand adverse environmental conditions, especially temperatures,, without its basic properties being affected.

In Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, Uruguay, and Venezuela (Table 3) there are suitably equipped laboratories manned by trained technicians capable of producing a sufficient amount of both glycerinated and dried vaccine to cover the needs of each country, and even to supply it to neighboring countries and territories that need but do not produce it. PAHO/WHO provided material and equipment and furnished technical advisory services for preparing such vaccine, as well as fellowships for training personnel in large-scale production techniques. In addition, the Organization has made available to the Governments the services of an internationally known laboratory for testing the purity and potency

[1] *Official Document PAHO* **41**, 352-353.

Table 1—*Reported Cases of Smallpox in the Americas, 1947-1961*

Area	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Argentina	46	166	1,176	4,462	1,404	982	309	256	55	86	335	27	36	65	4
Bolivia	500	831	805	644	728	432	429	624	372	499	1,310	183	7	1	—
Brazil[a]	869	1,288	670	706	1,190	1,668	923	1,035	2,580	2,385	1,411	1,232	2,629	2,644[b]	1,411[d]
British Guiana	—	—	—	—	11	—	—	—	—	—	—	—	—	—	—
British Honduras	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Chile	—	5	4	3,564	47	15	9	—	—	—	—	—	1	—	—
Colombia	4,903	7,356	3,040	4,818	3,844	3,235	5,526	7,203	3,404	2,572	2,145	2,009	950	209	16
Costa Rica	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cuba	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—
Dominican Republic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ecuador	2,984	3,856	657	241	174	665	708	2,516	1,831	669	913	863	1,140	2,185	491
El Salvador	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guatemala	11	6	4	10	3	1	1	—	—	—	—	—	—	—	—
Haiti	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Honduras	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Martinique	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Mexico	1,125	1,541	1,060	762	27	—	—	—	—	—	—	—	—	—	—
Netherlands Antilles	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Nicaragua	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Panama	1	—	—	—	—	—	—	—	—	—	—	8[b]	—	—	—
Paraguay	2,207	1,451	175	135	282	797	770	207	57	132	103	21	—	35	—
Peru	537	7,105	6,305	3,753	1,218	1,360	172	115	—	—	—	—	—	—	—
Trinidad-Tobago	—	13	—	—	—	—	—	—	—	—	—	—	—	—	—
United States of America	176	57	49	39	11	21	4	9	2	—	1	—	—	—	—
Uruguay	326	—	9	3	—	16	7	1	45	42	2	—	—	19[f]	1[e]
Venezuela	6,315	6,358	3,951	2,181	280	109	72	13	2[f]	4[c]	—	—	—	—	—
Total	20,009	30,034	17,910	21,318	9,221	9,301	8,930	11,979	8,348	6,389	6,220	4,343	4,763	5,158	1,923

(*a*) State capitals only.
(*b*) Includes four imported cases.
(*c*) Clinical diagnosis only.
(*d*) State of Guanabara only.
(*e*) Imported case.
(*f*) Includes two imported cases.

Table 2—*Smallpox Vaccinations, 1960-1962*

Area	1960	1961	1962 (to 30 April)
Argentina	1,608,597	4,407,020	535,819
Bolivia[a]	42,603	34,215	—
Brazil	4,910,091	—	—
Chile	1,276,000	131,966	—
Colombia	1,988,386	1,250,685	191,083
Costa Rica	14,657	79,553	21,012
Cuba	38,635	129,647	55,410
Dominican Republic	26,057	10,000	—
Ecuador	507,361	—	221,318
El Salvador	29,383	24,554	—
Guatemala[b]	58,160	120,590 (Nov. 61)	3,423
Haiti	441	3,135	—
Honduras[c]	17,843	9,509 (Oct. 61)	9,425
Mexico	3,637,334	3,250,000	1,379,775[d]
Nicaragua	8,803	19,385	3,335
Panama	24,835	31,596	6,643
Paraguay	122,897	110,142	28,283
Peru	884,392	969,808	—
Uruguay	214,360	188,674	81,754
Venezuela	920,969	1,140,842	336,337
French Guiana	—	—	667
Guadeloupe	—	—	750
Martinique	14,094	—	1,734
Aruba	—	—	—
Curaçao	3,665	—	2,400
Surinam	3,665	—	1,000
Antigua	1,859	1,186	446
Bahamas	—	—	—
Barbados	10,741	—	73,046
Bermuda	—	579	—
British Guiana	—	—	3,760
British Honduras	4,050	—	4,418
Dominica	—	—	—
Grenada	3,402	—	—
Jamaica	79,060	—	—
Montserrat	1,204	903	618
St. Kitts-Nevis-Anguilla	3,300	—	—
St. Lucia	—	—	1,257
Trinidad and Tobago	3,839	11,438	1,271

(*a*) To November 1961.
(*b*) To November 1961.
(*c*) To October 1961.
(*d*) To 31 March 1962.

of the vaccines prepared in national laboratories (Table 4).

PAHO/WHO also continued to cooperate with the Governments in the study and planning of smallpox vaccination programs aimed at eradicating the disease or preventing its occurrence, and in their development and evaluation.

A summary of the smallpox eradication activities of the Governments is given below.

Argentina. A vaccination program to be carried out jointly by the National Government and the provincial governments and aimed at reaching 80 per cent of the population in 16 provinces was begun in October 1960. Between then and 30 April 1962, a total of 5,621,896 persons were vaccinated.

The total number of vaccinations given during 1961, both in the 16-province special program and in the remainder of the country, was 4,407,020.

In 1961, 19,300,000 doses of glycerinated vaccine were produced, and in the first four months of 1962, 4,750,000 doses. Four cases of smallpox occurred in 1961 and 3 in 1962 up to 30 May.

Bolivia. A national vaccination program that was begun in 1957, and was to have reached 80 per cent of the country's population, was interrupted in December 1959 for various reasons, after 2,758,567 persons had been vaccinated and 700,000 still remained to be vaccinated. Since the percentage of the population protected against smallpox is very low in some places and nil in others, it is urgently necessary to complete this program.

The dried vaccine production laboratory, for which the Organization provided the equipment, produced 269,000 doses of vaccine in 1961. During that year (up to November), a total of 34,215 persons were vaccinated against smallpox. No smallpox cases were reported in 1961.

Brazil. In Brazil smallpox is endemic, and epidemic outbreaks of varying intensity frequently occur. There were 1,411 cases of the disease in Rio de Janeiro in 1961, and in 1962, up to 6 June, Guanabara State reported 261 new cases.

That a national vaccination program is urgently needed in order to eradicate the disease from the country is evident. The Government of Brazil has recognized the need and decided to initiate the program experimentally in some areas of Rio de Janeiro and in Sergipe State, and subsequently to extend it to Alagôas State. Once the most suitable work methods have been established, the vaccination campaign will be extended throughout the country until 80 per cent of the population is reached.

The Organization provided equipment for producing dried vaccine to Rio Grande do Sul and

Table 3—*Smallpox Vaccine Production, 1960-1962*
(*Number of doses*)

Area	1960		1961		1962 (1 January to 30 April)	
	Glycerinated vaccine	Dried vaccine	Glycerinated vaccine	Dried vaccine	Glycerinated vaccine	Dried vaccine
Argentina	6,600,000	–	19,300,000	–	4,750,000	–
Bolivia	–	310,000	–	269,000	–	–
Brazil	11,792,304	889,700	–	–	–	–
Chile	960,000	530,000	1,050,000	360,000	691,000	252,500
Colombia	–	2,473,240	–	2,809,865	–	1,224,025
Costa Rica	–	–	–	–	–	–
Cuba	1,360,000	–	518,500	–	242,500	–
Dominican Republic	–	–	–	–	–	–
Ecuador	–	1,055,740	41,020	1,095,220	9,000	287,490
El Salvador	60,300	–	127,650	–	76,515	–
Guatemala	484,400	–	283,400	–	217,420	–
Haiti	–	–	–	–	–	–
Honduras	20,200	–	–	–	–	–
Mexico	10,477,800	–	12,661,794	–	7,467,714	–
Nicaragua	15,300	–	40,000	–	424,000	–
Panama	–	–	–	–	–	–
Paraguay	–	–	–	–	–	–
Peru	563,465	1,362,300	433,400	1,299,900	–	–
Uruguay	1,982,000	68,500	1,480,000	70,000	1,260,000	–
Venezuela	3,925,000	316,000	278,000	4,600,000	1,963,000	257,000
Surinam	–	–	15,000	–	–	–

Table 4—*PAHO/WHO and UNICEF Funds Allotted to Smallpox Eradication Projects 1948-1961*
(*In U.S. dollars*)

Projects	PAHO/WHO	UNICEF	Total
AMRO-60	71,746	—	71,746
Argentina-2	9,736	—	9,736
Bolivia-8	10,263	—	10,263
Brazil-38	44,696	—	44,696
Chile-32	12,172	—	12,172
Colombia-17	103,789	15,000	118,789
Cuba-8	30,741	—	30,741
Ecuador-20	62,918	—	62,918
Haiti-18	3,848	—	3,848
Mexico-31	5,307	—	5,307
Paraguay-15	10,164	—	10,164
Peru-51	1,148	—	1,148
Uruguay-12	6,870	—	6,870
Venezuela-12	5,728	—	5,728
Total	379,126	15,000	394,126

Pernambuco States, and supplied additional laboratory equipment to the Oswaldo Cruz Institute to enable it to increase its capacity for producing lyophilized vaccine; in addition, a fellowship was awarded to a medical officer to allow him to visit various scientific centers in South America, the United States, and Europe that are producing dried vaccine on a large scale.

Chile. The National Health Service, through its local executive agencies, is responsible for the regular program of smallpox vaccination in the country, which consists in vaccinating all the newborn and immigrants, and revaccinating 20 per cent of the population every five years.

The Institute of Bacteriology, for which the Organization furnished additional laboratory equipment in 1958, produced 1,050,000 doses of glycerinated and 360,000 doses of dried vaccine in 1961. In that year a total of 131,966 persons were vaccinated.

Colombia. The smallpox vaccination program initiated in October 1955 was completed on 10 April 1962. A total of 11,273,085 persons were vaccinated; of these, about 4,484,000 were primovaccinations.

According to the population census made by the smallpox eradication campaign, the country has a population of 12,117,509. The number of persons vaccinated, therefore, represents 93 per cent of the total population. The house-to-house technique was employed and over 2,050,000 home visits were made.

No new cases of smallpox have occurred in Colombia since September 1961. This fact is of special importance if it is borne in mind that the system used in the eradication program ensures the early detection and reporting of new cases, which are subjected to careful clinical and epidemiological examination.

At this time it is especially important to establish procedures and systems for maintaining the level of immunity at that achieved during the eradication campaign. This is especially important in Colombia because of its proximity to areas where smallpox is still endemic.

The Samper Martínez Institute produced 2,809,865 doses of dried smallpox vaccine in 1961, and 1,224,025 doses during the first four months of 1962.

The smallpox eradication campaign in Colombia is a good example of proper planning, organization, and operation, which is reflected in the absence of any cases for almost one year. The Organization collaborated with the Government of Colombia in the conduct of this program by furnishing a full-time consultant and a specialized consultant in large-scale dried vaccine production, and by providing fellowships abroad to enable three professionals to study dried vaccine production and the organization and development of vaccination campaigns.

Cuba. In 1961 a total of 518,500 doses of glycerinated vaccine were prepared. The Organization furnished laboratory equipment for dried vaccine production. In 1961, 129,647 persons were vaccinated, and in the first quarter of 1962, 55,410 persons.

Ecuador. When the smallpox eradication program in Ecuador was resumed in 1958, its aim was the vaccination within five years of 80 per cent of the country's population, which in July 1961 was estimated at 4,455,000.

Between 1958 and December 1961 a total of 1,885,096 persons were vaccinated in the Provinces of Loja, Esmeraldas, El Oro, Los Ríos, Guayas, Chimborazo, Pinchincha, and Manabí. During that same period there were 510,571 primovaccinations. Over 1,500,000 persons who live in remote areas in the mountains and on the coast still remain to be vaccinated.

The reasons for the low number of vaccinations are the irregular development of the program and the frequent interruptions. To overcome the financial and administrative difficulties, the Government of Ecuador introduced important changes early in 1962 to speed up the allocation and utilization of funds. Earlier, at the end of 1961, the Government had asked the United Nations Technical Assistance Emergency Fund for material assistance consisting of 11 vehicles for the transportation of personnel, laboratory equipment to increase dried vaccine production, and field equipment; it also requested two sanitary inspectors to cooperate with local personnel in the organization, development, and supervision of field activities. The request amounted to approximately $57,000. Since the UN/TA Emergency Fund was not in a position to carry the costs of the entire request, the balance was made up by PASB and UN/TA.

The Institute of Hygiene produced 41,020 doses of glycerinated vaccine and 1,095,220 doses of dried vaccine in 1961, and 287,490 doses of dried vaccine between 1 January and 30 April 1962.

Haiti. The smallpox vaccination program, which was begun in 1957 and suspended in 1958, has now been resumed. However, the Government is interested in finding the best way of conducting this program in keeping with the possibilities and resources available. PASB personnel is cooperating with the Government in a study of this problem. A total of 3,135 persons were vaccinated in 1961.

Mexico. In Mexico the local health services are responsible for maintaining a high level of immunity against smallpox. This is done by conducting a regular immunization program. In 1961, 3,250,000 persons were vaccinated; in 1962 (up to 31 March), 1,379,775 persons.

Paraguay. In September 1957 Paraguay began a program aimed at vaccinating at least 80 per cent of the country's population within three years. The program was concluded in February 1960, by which time 1,462,904 persons, or 86.7 per cent of the population as estimated on 30 June 1959, had been vaccinated. Glycerinated vaccine produced in Uruguay was used in the campaign and the method of numerous small population nuclei was used. The maintenance of a satisfactory level of immunity is the responsibility of the health service. Thus, in

1961, 110,142 persons were vaccinated and, in the first four months of 1962, 28,283. These figures show that the maintenance work is not extensive enough.

Except for the 35 cases reported in 1960 among nomadic groups that could not be located in the jungle areas during the vaccination campaign, no case of smallpox has been reported in Paraguay since the second half of 1958. There were no secondary cases despite the opportunities for infection, a fact that demonstrates the efficacy of the vaccine used and the soundness of the technique employed.

Peru. As a consequence of the smallpox eradication campaign begun in 1950, which covered 87 per cent of the country's population, there have been no cases since December 1954. In 1961, 969,808 persons were vaccinated.

The National Institute of Hygiene produced 1,299,900 doses of dried vaccine and 433,400 doses of glycerinated vaccine in 1961.

Uruguay. Uruguay reported one imported case of smallpox in 1961 and one autochthonous case in May 1962.

Because there is no regular immunization program, the percentage of the population protected against this disease is low. It is therefore necessary for Uruguay to undertake a national smallpox vaccination campaign to remedy the situation as soon as possible.

In 1961 the laboratory of the Municipality of Montevideo produced 70,000 doses of dried vaccine and 1,480,000 doses of glycerinated vaccine. During the first four months of 1962 it produced 1,260,000 doses of glycerinated vaccine.

Venezuela. After a campaign begun in 1957 which covered the entire country, no cases of smallpox have occurred in Venezuela. The local health services have included smallpox vaccination in their regular activities.

In 1961 the production of dried smallpox vaccine was 4,600,000 doses and of glycerinated vaccine, 278,000 doses. Up to 30 April 1962, 257,000 doses of dried and 1,963,000 doses of glycerinated vaccine had been produced.

The Organization assisted the Government of Venezuela by providing the necessary laboratory equipment for dried vaccine production.

General Considerations

It is difficult to express the economic consequences of smallpox in figures. Nevertheless, there are certain indicators. If 14 days is accepted as the average duration of the disease, then the 165,846 cases of smallpox in the period 1947-1961 represent 2,321,844 bed-days. Most of these cases must have been hospitalized, which means that elaborate and costly isolation measures were applied. The deaths that occurred—in addition to their human worth, which cannot be measured—represented productivity lost and homes deprived of support.

Every smallpox epidemic causes violent upheavals in the health administration of the country where it occurs. To meet the emergency requires the postponement of other urgent activities, the costly displacement of personnel, and other disturbances. Equally important are the repercussions on international trade and traffic.

Communicable diseases, especially those which owing to their rapid spread can readily affect a large number of persons, are a source of concern to health authorities. Smallpox, which fits that description, is one of the most important of these diseases.

Limited vaccination campaigns are not justified in the face of the known efficacy of nation-wide campaigns which, when carried out within reasonable periods of time and according to established technical standards, bring about the disappearance of the disease. The concerted action of the countries of the Hemisphere must lead to the eradication of smallpox in the Americas.

Once the threshold of continent-wide eradication has been crossed, only general surveillance measures will be necessary, especially in international ports and airports. The countries will then be able to assign the human, economic, and material resources previously employed in smallpox control activities to other health areas equally important.

The brilliant success in eliminating smallpox—at the cost of great effort—in most countries of the Americas, is dimmed by the persistence of important foci of the disease in the midst of areas already free. Under these circumstances, it will be necessary to continue to conduct regular smallpox vaccination programs to protect at least 80 per cent of the population within periods not exceeding five years in order to prevent the reintroduction of the disease into these countries. This measure, which has many financial and administrative implications, can only be discontinued when smallpox has been eradicated from the entire Hemisphere.

At the present time Brazil and Ecuador are the chief foci of smallpox in the Americas. Ecuador has an eradication program under way which, with the

financial and administrative changes recently introduced by the Government and the special material assistance provided by the United Nations Technical Assistance Emergency Fund, UN/TA, and PASB, should make it possible to complete the campaign within the next two years. As to Brazil, the recently initiated campaign should be accelerated as much as possible so that the smallpox eradication campaign may reach its peak at the earliest possible moment.

Annex 5

REPORT ON THE STATUS OF AËDES AEGYPTI ERADICATION IN THE AMERICAS [1]

By resolution of the Directing Council at its I Meeting (Buenos Aires, 1947), the Pan American Sanitary Bureau was entrusted with the promotion and coordination of the *Aëdes aegypti* eradication campaign in the Americas. In compliance with this mandate, the PASB has been making every possible effort, within its budgetary limitations, to cooperate with the countries in carrying out programs aimed at eliminating this vector from the Western Hemisphere.

During the 15 years that have elapsed since that resolution was adopted by the Directing Council, many difficulties have arisen and have been solved, to such an extent that the results can be considered very satisfactory.

The Governing Bodies of the Organization have declared *A. aegypti* eradicated from Bolivia, Brazil, British Honduras, the Canal Zone, Chile, Costa Rica, Ecuador, El Salvador, French Guiana, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, and Uruguay.

In Mexico the campaign has reached its final stage, and the special survey to verify eradication is under way. All the countries of Central America are free of the vector.

All of Colombia except the city of Cúcuta, which was reinfested in 1961, is also free of *A. aegypti.* In Venezuela the work is progressing well, and in Argentina the campaign will reach its final stage at the end of 1962. In all the other countries and territories of South America except Surinam, the vector has been eliminated.

At present, the problem persists in the United States of America and in certain parts of the Caribbean area, where for geographic, economic, and administrative reasons it is difficult, despite the efforts being made, to achieve the necessary coordination for conducting the program in the various territories at more or less the same time in order to prevent reinfestation of the areas already free of the vector.

The Governing Bodies of the Organization have placed repeated emphasis on the need for countries still infested to make every possible effort to eradicate *A. aegypti,* because this is the only way to prevent the eradication program in the Americas from becoming indefinitely prolonged and to avert the risk of losing everything that has been achieved so far.

At its XIII Meeting (Washington, October 1961), the Directing Council recommended (Resolution XXXIV) [2] that countries and territories still infested which had not initiated an eradication campaign, should do so at the earliest possible date, and that those whose campaigns were progressing satisfactorily or were in the final stage, should accelerate their activities, so that they might all complete the campaign within a five-year period and be able to report the eradication of *A. aegypti* to the XVII Pan American Sanitary Conference in 1966.

The following summary indicates the status of the program up to April 1962 in all the countries and territories other than those that have already eradicated *A. aegypti.*

Argentina. The first anti-*aegypti* work carried out in Argentina was for control purposes. However, in 1953 an eradication campaign was begun, and in September 1954 a letter-agreement for mutual cooperation was signed by the Ministry of

[1] Document CSP16/12.

[2] *Official Document PAHO* **41**, 34.

Welfare and Public Health and the Pan American Sanitary Bureau. The letter-agreement, with some modifications, was extended on three occasions.

At the start, administrative difficulties slowed down the progress of the campaign; nevertheless, the work went on, following the policies and guidelines laid down in the plan of operations approved in January 1955.

By August 1961, 796,093 km² of the 1,500,000 km² presumably infested had already been treated. The results obtained in the work already carried out in the central and southern regions showed that the original estimate needed to be revised.

For this reason, and bearing in mind the geographic and climatic conditions, it was considered advisable to examine a further 126,000 km², which included parts of the Provinces of Rioja, Córdoba, and Santa Fe and the northern part of the Province of Buenos Aires. In addition, other areas in the Provinces of San Luis, Mendoza, and San Juan were surveyed.

The results of these investigations showed that the vector was absent, and it appears unnecessary to survey another 500,000 km² included in the plan of operations. The definitive delimitation of the area to be surveyed is under consideration.

From the beginning of the campaign to June 1962, 3,671 localities had been surveyed, of which 165 were found initially positive. The final verification confirming eradication still remains to be made in only three of these localities—Rosario, Córdoba, and Freyre. It is hoped that this will be completed by the end of November 1962.

Colombia. The campaign in Colombia reached its final phase in 1961. However, after two years of negativity, the *A. aegypti* was again found in September 1961 in Cúcuta, near the border with Venezuela. The infestation was intense (with an index of 45.2 per cent) and generalized. Steps were taken by the Government, with the assistance of the Organization, to eliminate the mosquito. Up to April 1962, 11,000 houses had been treated, and it is expected that the remaining 9,000 houses will be treated during July. The first post-treatment verification will be made in August and September 1962.

Cuba. According to the data available, Cuba may be considered completely infested with *A. aegypti,* except for some almost uninhabited coastal areas and the highest mountainous parts of the country.

Eradication activities have been considerably intensified since 1959, when the Government increased the campaign budget, which is at present satisfactory.

The work in the Province of Havana will be finished in 1962, and the campaign will then be extended to the neighboring Provinces of Pinar del Río and Matanzas. The progress achieved in the entire area is satisfactory, but the results obtained in some parts of greater Havana in 1961 were not so good, because of decreased susceptibility of *A. aegypti* to DDT. This problem has been solved by changing the insecticide.

The eradication of *A. aegypti* from Cuba is expected by the end of 1964, if the work progresses at the same rate and no major problems arise in the future.

Dominican Republic. Eradication activities began in 1952, with the cooperation of the Organization, but progress up to the first half of 1962 has been slow for administrative reasons, particularly lack of personnel. It is expected that the necessary facilities for intensifying the program will be available in the second half of 1962. The eradication program is being reorganized. *A. aegypti* resistance to DDT and dieldrin has been verified in the Dominican Republic.

Haiti. In 1958 the Government, for financial reasons, requested the interruption of the eradication program. Ecologic conditions in Haiti are very favorable to *A. aegypti* and, in view of the situation existing when the activities were suspended, infestation in the country must now be very high and extensive.

The emergency public health programs submitted by the Government of Haiti to the Tripartite Commission for the Alliance for Progress include a project for the reactivation of the *A. aegypti* eradication campaign.

Mexico. The program is in its final stage. The initially infested areas in the southern and central parts of the country are now considered free of *A. aegypti.* Only small northern areas in the vicinity of the United States border still lack inspection.

The special survey of the entire initially infested area of the country, which is necessary for the verification of eradication, is continuing, and is expected to be completed early in 1963. The work is being done with the cooperation of PASB. Except in the city of Mérida, which was found to be infested, the results of the verification have so far been negative.

United States of America. According to the latest data available, *aegypti*-infested areas in the country and territories under its administration include the States of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, South Carolina, Tennessee, and part of Texas, and also Puerto Rico and the Virgin Islands. No eradication work is being undertaken in the U.S.A.

The breeding of *A. aegypti* is under surveillance and control at international airports and in the dock areas of the principal seaports of the southeastern states.

Venezuela. In 1962 the *A. aegypti* eradication campaign regained the vigor it had lost in the second half of 1961 because of a reduction in the budget. The initial verification was completed in the States of Aragua, Carabobo, and Mérida and continued in the States of Zulia, Lara, Trujillo, and Yaracuy, in the last two of which it is being completed. Post-treatment verifications in the areas already negative, aimed at proving or consolidating eradication, were carried out in the Federal District and the State of Miranda.

Of the 5,620 localities included in the initial survey, 557 were found to be positive. Of these, 547 have already been treated and 22 are still positive. The area surveyed, comprising 16 per cent of the country, has 4,348,154 inhabitants. The area already free of the vector covers 118,595 km².

It is hoped that the eradication of *A. aegypti* will be completed in Venezuela in 1964.

British Guiana. The situation here can be very dangerous. *A. aëgypti* has been discovered in the capital, Georgetown, perhaps in such a widespread form that a complete program will be necessary to free the territory from it again. Furthermore, in an explosive combination, jungle yellow fever has been found present in rural areas, and measures have been taken to vaccinate persons exposed and to prevent the virus from reaching the capital. It was learned that two cases—in October and November 1961—came to the capital and died in the hospital there, and that only several months later were the health authorities notified. This has now alerted the authorities to the potential threat.

French Guiana. The territory of French Guiana, which had been free of *A. aegypti,* was reinfested in 1960. This reinfestation was eliminated, and during 1961 no positivity was found.

Surinam. The *A. aegypti* infestation in this territory is high and extensive, as shown by the preliminary survey carried out in 1960 by the Government with the collaboration of PASB. The Government decided to start an eradication campaign in 1962, and assigned the sum of 180,000 guilders for the first year. The PASB consultant has visited the territory and prepared a plan of operations for a program to be initiated in the second half of 1962. The Organization will cooperate in providing technical assistance and some supplies and equipment. Surinam is the only territory in South America that so far has not had eradication activities.

Jamaica. Because the eradication activities on this island were not satisfactory, the Government decided to suspend the program and reappraise the situation. With personnel from the antimalaria campaign, a survey was initiated in January 1961 to determine the extent of infestation. The survey is revealing widespread positivity all over the island, and possibly only two parishes in the western region, Westmoreland and Hanover, are showing negativity; the 11 others are positive. The city of Montego Bay, previously considered negative, was found positive, and susceptibility tests made in the city showed that *A. aegypti* adults and larvae are resistant to dieldrin, DDT, and BHC. A complete appraisal of the susceptibility of the mosquito in the other regions is needed. Steps are being taken by PASB to provide the services of an entomologist who will study this problem not only in Jamaica but also in other areas of the Caribbean where the situation is similar.

Only after the results of the survey are known will it be possible to propose a new program.

Bahamas. The campaign is considered suspended. The funds and personnel assigned to the campaign were insufficient and the results were unsatisfactory. There is low susceptibility of *A. aegypti* to DDT.

Bermuda. The island is considered negative, and only the special verification to confirm eradication is lacking.

Barbados. The campaign has been delayed on this island, but recently renewed interest by the local health authorities has led to a great improvement. Infestation is concentrated mostly in the capital, Bridgetown, with some small foci in other parts of the island. *A. aegypti* resistance to DDT has been verified.

British Virgin Islands. The campaign in this group of islands has been in progress since 1960, with the cooperation of PASB. Some difficulties were encountered in inspecting houses owing to the absence of the occupants and the shortage of transportation to the out-islands. The index in Tortola is about 3 per cent.

Trinidad and Tobago. These two islands had been considered negative for some time, but in 1961 the vector was found in one locality in the interior of Trinidad and in the dock area of Port-of-Spain, probably imported from some other island. Steps were taken to eliminate this reinfestation.

St. Kitts, Nevis, and Anguilla. The first two islands have already become negative. Work continues in Anguilla to complete eradication, but the local health authorities are not satisfied with the results, and more intensive action is necessary to make the island negative.

St. Vincent and Grenadines. This area, which in 1959 was considered negative, was reinfested in 1960, and surveys carried out in 1961 still showed positivity. No treatment was carried out during 1961.

Antigua and Barbuda. These two islands were reinfested in 1961 after being negative and under surveillance since 1958. Steps were taken to eliminate the reinfestation.

Montserrat. The island was reinfested in 1960, but after prompt action it is again negative.

St. Lucia. This island was reinfested in 1960 after being free of *A. aegypti* for a long time. Reinfestation was eliminated early in 1960, but the island become positive again in 1961.

Grenada and Carriacou. In this group, Grenada has been negative for a long time but Carriacou and Petite Martinique continue to be positive. Tests carried out in Carriacou indicate that *A. aegypti* is resistant to DDT and to dieldrin and has low susceptibility to BHC.

Martinique. There is no specific campaign against *A. aegypti* in Martinique. The local authorities are carrying out a campaign against insects in general, but the results against *A. aegypti* are poor. PASB is not cooperating in this program.

Guadeloupe. Very little progress has been made since the campaign was started in 1956. Only the capital and the neighboring communities were covered and negativity was never achieved. Resistance of *A. aegypti* to DDT was observed in Basse Terre, the capital.

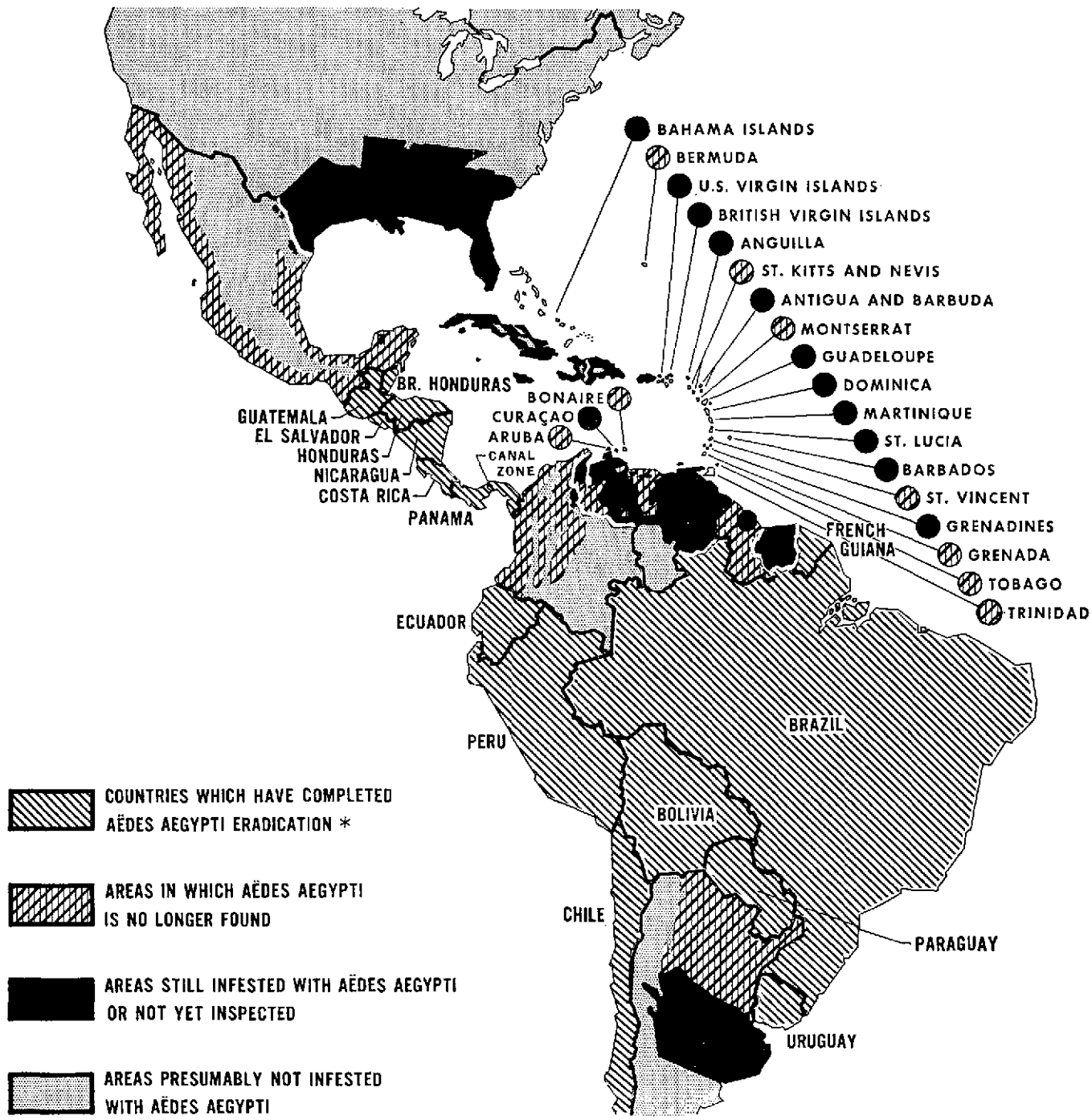
Netherlands Antilles. The situation in this group is in general satisfactory. Aruba, Bonaire, and Saba are already negative and only lack special verification to confirm eradication. St. Eustatius was reinfested in 1961. Some work was carried out, and the results of the first inspections were negative. Curaçao, which had been reported negative, was found to have a pocket of infestation. Residual spraying of the area was carried out in order to eliminate *A. aegypti.*

The following table shows the data for the programs in each country and territory, and the map gives an over-all view of the results obtained and the work still remaining to be done in order to eradicate *A. aegypti* in the Americas.

Country or other political unit	Date started	Latest report available	Area assumed initially infested (km²)		Localities inspected					Present status
						Initially positive				
			Total	In-spected (%)	Number	Total	Treated	Verified		
								Number	Still positive	
Argentina	VI. 53	VI. 62	1,500,000	66.7	3,671	165	165	165	–	NA
Bolivia	VI. 32	VI. 62	100,000	100.0	282	65	65	65	–	E
Brazil	I. 31	III. 62	5,358,822	100.0	268,576	36,119	36,119	36,119	–	EV
Chile	VI. 45	VI. 62	104,373	100.0	301	48	48	48	–	EV
Colombia	XI. 50	VI. 62	280,000	100.0	3,801	354	354	354	1	PA
Costa Rica	IV. 49	VI. 62	20,000	100.0	1,342	104	104	104	–	E
Cuba	III. 54	VI. 62	100,000	15.7	447	323	314	270	107	PA
Dominican Republic	X. 52	VI. 62	42,020	80.4	1,420	351	351	319	15	PA
Ecuador	VI. 46	VI. 62	69,454	100.0	2,824	337	337	337	–	EV
El Salvador	IV. 49	VI. 62	18,675	100.0	909	190	190	190	–	EV
Guatemala	I. 49	VI. 62	36,423	100.0	2,485	138	138	138	–	EV
Haiti	X. 53	IX. 58	27,750	49.4	2,379	605	602	435	27	P
Honduras	IX. 49	VI. 62	69,929	100.0	600	53	53	53	–	EV
Mexico	I. 51	VI. 62	1,000,000	100.0	4,235	600	600	600	–	NA
Nicaragua	I. 50	VI. 61	65,263	100.0	3,126	18	18	18	–	E
Panama	II. 49	VI. 60	56,246	100.0	2,853	44	44	44	–	E
Paraguay	I. 48	VI. 62	200,000	100.0	1,561	98	98	98	–	EV
Peru	I. 40	VI. 62	638,000	100.0	4,320	191	191	191	–	EV
United States of America	–	–	777,000	–	–	–	–	–	–	P
Uruguay	X. 48	VI. 62	187,000	100.0	1,020	133	133	133	–	EV
Venezuela	VI. 48	VI. 62	600,000	85.0	5,620	557	547	482	22	PA
France:										
French Guiana	V. 49	IV. 60	91,000	100.0	222	55	55	55	–	E
Guadeloupe	I. 57	X. 61	1,619	4.9	53	38	38	27	20	P
Martinique	XI. 53	III. 62	1,000	100.0	34	21	19	19	2	PA
Netherlands:										
Aruba	III. 52	VI. 62	174	100.0	9	9	9	9	–	NA
Bonaire	IX. 52	III. 62	246	100.0	6	6	6	6	–	NA
Curaçao	X. 51	VI. 62	448	100.0	r) 5	r) 5	r) 5	r) 5	r) 2	PA
Saba, St. Eustatius, St. Martin	VII. 58	VI. 62	60	100.0	34	30	30	30	15	PA
Surinam	–	XII. 60	48,000	---	231	74	–	–	–	P
United Kingdom:										
Antigua	VIII. 54	VI. 62	283	100.0	50	47	47	47	11	PA
Bahamas	VI. 54	VI. 62	11,396	1.3	13	11	11	11	9	P
Barbados	III. 54	VI. 62	171	100.0	99	r) 98	r) 98	r) 98	58	PA
Bermuda	I. 51	XII. 51	53	100.0	r) 9	9	9	9	–	N
British Guiana	III. 46	VI. 62	4,662	100.0	93	21	21	21	2	PA
British Honduras	X. 50	VI. 62	22,965	100.0	84	2	2	2	–	E
Cayman, Turks, Caicos	–	–	689	–	–	–	–	–	–	P
Dominica	II. 51	X. 56	789	90.0	136	66	66	66	16	P
Grenada	XI. 52	VII. 59	311	100.0	8	8	8	8	–	N
Grenadines	XI. 52	VI. 62	65	100.0	7	5	5	5	3	PA
Jamaica	II. 50	III. 62	11,424	100.0	r) 14	r) 12	---	---	---	P
Montserrat	V. 56	VI. 62	83	100.0	33	16	16	16	—	NA
St. Kitts, Nevis, Anguilla	V. 50	XII. 61	396	100.0	62	33	33	33	16	PA
Saint Lucia	V. 53	XII. 61	259	100.0	50	50	50	50	6	PA
Saint Vincent	III. 53	VI. 62	332	100.0	8	8	8	8	–	NA
Trinidad and Tobago	I. 51	VI. 62	3,108	100.0	128	122	122	122	–	NA
Virgin Islands	III. 60	V. 62	174	74.6	23	23	23	23	9	PA
United States of America:										
Canal Zone	1948	IX. 60	1,432	100.0	21	2	2	2	–	EV
Puerto Rico	V. 50	III. 61	8,896	61.8	481	248	248	248	116	P
Virgin Islands	–	–	124	–	–	–	–	–	–	P

P = Positive for *A. aegypti;* N = Negative for *A. aegypti;* A = Program in operation; E = Eradication completed; V = With vigilance; – = Zero or no activity; --- = Not available; r = Revised.

STATUS OF THE AËDES AEGYPTI ERADICATION CAMPAIGN
APRIL 1962



* ERADICATION CARRIED OUT ACCORDING TO THE STANDARDS ESTABLISHED BY THE PAN AMERICAN HEALTH ORGANIZATION

Annex 6

PROGRESS REPORT ON TUBERCULOSIS CONTROL IN THE AMERICAS [1]

Satisfactory determination of the prevalence and incidence of tuberculosis in the Americas is not possible, owing to the lack of complete and accurate information in most countries.

The mortality statistics available indicate that this disease constitutes one of the principal causes of death in several countries of the Americas. Data on annual reported cases of tuberculosis with rates per 100,000 for the period 1955-1961 are provided in Table 1, and the number of deaths per 100,000 appear in Table 2. These data are incomplete because in many areas lacking adequate medical facilities cases are not diagnosed and reported; likewise, because of incomplete medical certification, not all deaths due to tuberculosis are certified as such. However, although incomplete, these data are useful as a basis for estimates—with full recognition of the need for a study of the tuberculosis problem in a given country, in order to plan a program for rapidly reducing morbidity and mortality.

The Organization's policy in the field of tuberculosis control, as in other fields of public health, has evolved with the years. Periodic revisions of this policy have been made as new control measures have been introduced, established measures improved, and increasing experience gained in the application of such measures.

As long as there were no means for a direct attack on the etiologic agent, the main goal of tuberculosis control was to increase the resistance of the susceptible individual. Therefore, BCG vaccination was a very important part of the earlier tuberculosis control activities of the Organization, with the assistance of UNICEF.

The introduction of potent antituberculosis drugs made possible a direct attack on the tubercle bacillus in the reservoirs of human infectors.

At present, tuberculosis can be regarded as a communicable disease that can be brought under control by methods based on public health practice applied to communities. Existing and potential sources of infection—the tuberculosis cases—must be found and rendered noninfectious, and susceptible individuals must be protected.

In practice, this means a program of case-finding and treatment and of vaccination and chemoprophylaxis. Case-finding must be based on the simplest diagnostic methods now available: miniature X-ray and laboratory examination, and tuberculin testing. Treatment, in order to be economically feasible, must be ambulatory in the majority of cases. It may be stressed that whatever the type of case of pulmonary tuberculosis diagnosed, treatment will have to be limited in practice to chemotherapy, and the drugs given will have to be self-administered.

Thus the elements of tuberculosis control are very simple, but their application to local circumstances will require, in each case, an experimental study of the magnitude of the problem and of methods. This must include the quantitative and qualitative objectives to be attained and the available and needed resources in both physical facilities and personnel, with due consideration to priorities adopted by the health authority in its over-all public health plans. Only after such an experimental phase has been completed can a rational long-term plan be evolved for a national program of control.

The Organization's policy is that such a study can best be made in a national pilot area that will permit: (a) the magnitude of the problem to be assessed in a representative sample of population; (b) quantitative and qualitative control objectives to be laid down, and achievements over a specified period of time to be measured with particular regard to the administrative efficiency of the methods used; (c) an appraisal to be made of the minimal resources required to attain such objectives, bearing in mind that tuberculosis control must as far as possible be carried out as an integral part of the public health program, and not as a highly specialized and

[1] Document CSP16/14.

Table 1—*Reported Cases of Tuberculosis, All Forms (001-019), with Rates per 100,000 Population in Countries of the Americas, 1955-1961*

Country	NUMBER							RATE						
	1955	1956	1957	1958	1959	1960	1961[a]	1955	1956	1957	1958	1959	1960	1961[a]
Argentina	16,577	18,307	19,647	16,508	17,387	18,865	---	86.7	93.9	98.9	81.5	84.3	90.0	---
Bolivia	859	745	596	522	1,779	1,136	1,207	26.6	22.8	18.0	15.5	52.2	32.9	34.5
Brazil[b]	10,883	11,556	13,735	7,986	14,079	9,943	---	120.8	171.7	204.2	115.7	138.2	100.8	---
Canada[c,d]	9,184	8,405	7,979	7,502	6,579	6,345	6,488	58.6	52.3	48.2	44.1	37.7	35.6	35.6
Chile	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Colombia[e]	12,273	11,048	13,787	14,579	13,858	14,392	15,436	110.8	93.0	114.6	119.3	110.1	106.5	111.3
Costa Rica	681	700	605	560	649	624	---	71.6	70.9	58.6	52.0	57.6	53.3	---
Cuba	1,749	1,951	1,838	1,177	1,849	1,856	2,624	28.5	31.2	28.8	18.0	27.8	27.3	37.8
Dominican Republic	1,799	2,149	2,184	2,199	2,189	2,122	---	71.2	82.2	80.8	78.6	75.6	70.9	---
Ecuador	4,542	4,466	4,699	5,463	4,692	5,223	---	123.1	117.5	119.6	134.9	112.0	121.0	---
El Salvador[e]	2,518	2,615	3,011	2,918	3,872	5,251	5,388	243.5	239.0	262.7	231.2	294.0	358.2	355.9
Guatemala	2,721	2,157	1,942	1,153	3,649	3,802	3,362	83.5	64.4	56.3	32.5	99.9	101.0	86.9
Haiti	799	779	1,188	2,218	3,067	2,860	3,332	24.2	23.3	35.1	66.5	88.5	81.6	94.0
Honduras	---	---	---	1,439	1,609	4,566	1,985	---	---	---	78.7	85.3	233.8	98.3
Mexico	8,257	9,421	10,392	11,157	11,348	12,417	11,803	27.8	30.9	33.1	34.5	34.1	35.6	32.7
Nicaragua	964	1,051	1,014	1,330	744	581	707	77.4	81.6	76.1	96.5	52.2	39.3	46.2
Panama	826	1,323	1,878	1,385	1,673	1,487	1,104	89.5	139.6	193.0	138.5	162.9	140.9	101.8
Paraguay[e]	640	1,158	1,381	1,206	1,126	1,113	---	89.4	124.1	135.3	107.6	65.2	63.0	---
Peru[e]	19,408	19,818	22,552	19,336	22,796	19,485	22,053	472.9	450.3	472.8	397.5	425.3	348.4	382.7
United States of America[d,f]	77,368	69,895	67,171	63,537	57,535	55,494	53,623	46.9	41.6	39.3	36.5	32.5	30.8	29.3
Uruguay	3,705	653	3,164	3,134	2,134	1,928	1,613	141.6	24.4	116.2	113.6	76.4	68.2	56.4
Venezuela[e]	8,699	8,062	7,211	7,494	7,887	8,722	8,658	260.4	232.7	200.3	201.2	204.3	217.7	208.2

--- Data not available.
* Disease not notifiable.

(*a*) Provisional data.
(*b*) Federal District and State capitals except: São Paulo 1956–1958; Niteroi, 1955, 1957, and 1958. Incomplete data for 1960.
(*c*) Excluding Northwest Territories 1955–1958.
(*d*) Newly reported active cases.
(*e*) Reporting area.
(*f*) Including Alaska and Hawaii.

Table 2—*Number of Deaths from Tuberculosis, All Forms (001-019), with Rates per 100,000 Population in Countries of the Americas, 1955-1960*

Country	NUMBER						RATE					
	1955	1956	1957	1958	1959	1960	1955	1956	1957	1958	1959	1960
Argentina	4,786	3,844	---	---	---	---	25.0	19.7	---	---	---	---
Bolivia	1,184[a]	---	---	---	---	---	37.2[a]	---	---	---	---	---
Brazil[b]	---	4,026	8,522	7,973	8,434	---	---	67.1	87.4	79.7	84.2	---
Canada	1,382	1,256	1,183	1,027	959	823	8.8	7.8	7.1	6.0	5.5	4.6
Chile	4,530	4,129	4,110	3,776	4,073	4,032	67.0	59.5	57.7	51.7	54.6	52.9
Colombia	3,570	3,487	3,614	3,662	3,841	4,074	28.2	26.9	27.3	27.1	27.8	28.8
Costa Rica	220	198	217	165	163	151	23.1	20.0	21.0	15.3	14.5	12.9
Cuba	---	---	1,175	1,076	1,146	---	---	---	18.4	16.5	17.2	---
Dominican Republic	768	767	614	476	512	---	30.4	29.4	22.7	17.0	17.7	---
Ecuador	1,213	1,313	1,420	1,454	---	---	32.9	34.6	36.1	35.9	---	---
El Salvador	456	363	406	432	384	408	20.8	16.0	17.3	17.7	15.2	15.6
Guatemala	1,311	1,439	1,272	1,306	1,207	1,266	40.2	43.0	36.9	36.8	33.1	33.6
Haiti	---	---	---	---	---	---	---	---	---	---	---	---
Honduras	266	278	286	244	297	265	16.0	16.2	16.2	13.3	15.7	13.6
Mexico	7,708	8,434	9,494	9,399	9,168	9,719	26.0	27.6	30.2	29.1	27.5	27.8
Nicaragua	82	88	72	97	113	123	6.6	6.8	5.4	7.0	7.9	8.3
Panama	203	292	267	266	238	288	22.0	30.8	27.4	26.6	23.2	27.3
Paraguay[c]	242	243	219	220	244	292	---	---	28.6	27.7	28.7	32.4
Peru[d]	2,460	2,582	3,224	2,627	3,182	---	98.3	100.1	118.5	83.6	89.4	---
United States of America[e]	15,016	14,137	13,390	12,417	11,474	---	9.1	8.4	7.8	7.1	6.5	---
Uruguay	635	---	599	519	507	---	24.3	---	22.0	18.8	18.2	---
Venezuela	1,932	1,723	1,731	1,547	1,466	1,411	32.4	27.8	26.9	23.2	21.2	19.6

(*a*) 1954.

(*b*) For 1956, State of Guanabara (then Federal District) and seven state capitals; for 1957–1959, State of Guanabara and capitals of other States and Territories with exceptions.

(*c*) Rates for 1957–1960 based on population of information area.

(*d*) Principal cities.

(*e*) Including Alaska and Hawaii.

costly service; and (d) calculation of the cost of achieving the planned objectives.

Once such a pilot phase has been completed, it should be possible for the national health authority to make a long-term plan for the development of a national program, again over a specified period of time. The rapidity with which such a program can develop will depend on (a) the priority given to tuberculosis among other health problems, considering the resources likely to be available to the health authority; and (b) the rhythm at which minimal facilities can be developed and personnel trained for such a program.

In planning the extension of tuberculosis control beyond the first pilot experimental phase, the national health authority should bear in mind that (a) the administration of the program must rely largely on facilities and personnel of the general public health services; and (b) the expansion phase of the program should also have quantitative and qualitative objectives and should remain subject to periodic assessments by the authorities responsible for the pilot area. Orientation and training of the personnel required can also be carried out in the pilot area as a continuous process during both the experimental and the expansion phases.

At its 36th Meeting (Puerto Rico, 1958), the Executive Committee of PAHO affirmed that tuberculosis "is one of the primary unsolved health problems in many countries of the Americas," and instructed the Director to report to a future meeting of the Directing Council on the financial outlay that would be required to formulate a continental plan to combat tuberculosis.[1]

The problem of tuberculosis was discussed at length during the XIII Meeting of the Directing Council (Washington, 1961). Document CD13/17, Rev. 1,[2] "Financial Outlay Required to Formulate a Continental Plan to Combat Tuberculosis," presented by the Director, estimated that the additional financial outlay for an expanded tuberculosis program was about $63,000,000 per year over a period of 10 years, for a grand total of $630,000,000, including the costs of a variety of control measures —therapeutic, preventive, and educational. The discussion that followed the presentation of the document indicated the need for obtaining additional information on the nature and scope of the problem in each country, in order to carry out a detailed study that will serve as a basis for formulating tuberculosis control programs.

Through Resolution XXXVI [3] the Council recommended to Governments: (a) the carrying out of tuberculosis studies in their respective territories in order to gain a better knowledge of the incidence and prevalence of the infection and the disease, and the organization of intensive case-finding; (b) studies to determine the costs in each country of specific control measures, to aid in drawing up national plans for tuberculosis control with adequate financing; (c) acceptance as 10-year goals of stated reductions in mortality and morbidity rates, and in infection prevalence ratios; and (d) review by each Government of its present resources and program to make possible more effective use of available resources.

The Directing Council also authorized the Director to attempt to obtain additional financial resources that will make it possible to carry out a continental plan to combat tuberculosis, including the investigation of all problems that bear a relation to the disease, in order to help reach the most rapid solution possible.

To assist the Governments in the control of tuberculosis, the Organization is expanding, within the budgetary possibilities, its activities in this field through a regional project (AMRO-110) and several country projects. This assistance consists in (1) the training of national personnel in the new techniques and procedures for the management of the tuberculosis problem; (2) 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 available resources in physical facilities and trained personnel that could be used for an effective program, the evaluation of needs and possible ways to fulfill them, etc.; and (3) the establishment of national pilot project areas.

In the past, the collaboration of the Organization has been devoted mostly to mass BCG-vaccination programs. In 16 countries and territories (British Guiana, British Honduras, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Leeward Islands, Mexico, Paraguay, Surinam, Trinidad-Tobago, and Windward Islands), campaigns have been carried

[1] *Official Document PAHO* **27**, 424.
[2] *Official Document PAHO* **41**, 359-362.
[3] *Ibid.*, 35-36.

out. In addition, assistance has been given to three countries for the organization of BCG-producing laboratories.

In the last four years, however, the emphasis has shifted and is now placed on better organization of dispensaries. Special attention is given to chemotherapy and chemoprophylaxis, which now rank high among public health measures against tuberculosis. The appointment of a Regional Consultant in Tuberculosis in mid-1960 has stimulated the work in this field. However, difficulties encountered in recruiting suitable tuberculosis consultants have delayed the assistance provided by the Organization.

Upon the satisfactory completion of a national BCG-vaccination campaign in 1958, the Government of *Guatemala* requested the cooperation of the Organization in carrying out a pilot control project, based on chemotherapy of patients and chemoprophylaxis of contacts. The program started in September 1958 in the Department of Escuintla and was later extended to the Departments of Santa Rosa and Sacatepéquez. An evaluation was made in 1961 of the work carried out in the first two departments with the rearranging of the program and preparation of standards and procedures.

In 1959, the Government of *Mexico* requested PAHO's assistance in a tuberculosis survey and control program. The training of personnel for this program (Mexico-38) and the preparation of the general standards for the control of the disease in the country have been completed. Regrettably, difficulties encountered in recruiting an international consultant and in the provision of the mobile X-ray units delayed the initiation of this program. Fortunately, the consultant was appointed in the second part of 1961 and the equipment arrived in January 1962. The program started in Baja California and the preliminary prevalence survey is now going on, with follow-up of all discovered cases and contacts. The laboratory of the University of Mexico continued to receive collaboration and stimulation in the investigation and study of atypical mycobacteria.

In *Cuba*, the Government has shown itself very much interested in carrying out a tuberculosis control program and has requested the cooperation of the Organization. So far, several hospitals have been enlarged, and the number of beds for tuberculosis patients was thereby increased significantly.

The BCG-vaccination campaign was completed in 1961 in the *Dominican Republic*. With the cooperation of the Organization a plan of operations has been prepared for a pilot project in San Cristóbal, to begin in 1963 with the assistance of UNICEF. It is expected that the training of the necessary personnel will be completed during 1962.

In *Honduras*, a consultant of the Organization assisted the Government in 1961 in the preparation of the plans for a pilot control project in the southern part of the country (Choluteca). UNICEF's cooperation has been requested by the Government for this project.

In *Panama*, an intensive case-finding program has been carried out during the past several months as part of the Central Area public health project. To assure maximum participation from a predominantly rural population and maximum cooperation on the part of patients, suspects, and contacts under treatment or supervision, a scheme of mobilizing village leaders is being used. The success of this plan is encouraging the Government to utilize the same approach in other fields of public health. The tuberculosis control program is assisted by the Organization and UNICEF.

A PAHO tuberculosis consultant has been cooperating with the Government of *Colombia* since 1961, in reorganizing its tuberculosis control service. Particular advances have been made in improving communication and in setting up uniform standards and a more effective system of record-keeping. A pilot project has been drawn up for the area around Santa Marta; here a special study will be made of how to motivate ambulatory tuberculosis patients and contacts to continue taking the drugs for a long enough time. The project will receive UNICEF assistance.

At the end of 1961 a detailed critical review of the administrative and technical aspects of the activities of the Antituberculosis League of *Ecuador* was made by a PAHO short-term consultant.

In *Peru*, tuberculosis is a serious public health problem despite the efforts of official and private agencies to control the disease. Although tuberculosis mortality has diminished, a parallel reduction in number of patients has not been possible; according to official statistics, this number has remained stationary. Surveys carried out in urban communities revealed a prevalence of 2.34 per cent. A similar study completed last year in the Puno area showed a prevalence of active disease of 2.8 per cent.

The Government of Peru has requested the Organization's and UNICEF's cooperation for a pilot

tuberculosis control project in the Tacna area. This project is ready to begin operations, awaiting only the arrival of X-ray equipment to be provided by UNICEF, and the PAHO tuberculosis consultant who is being recruited. A PAHO nursing consultant in tuberculosis has been on site since 1960, assisting in both the Puno and the Tacna areas.

In *Chile* a pilot project has been proposed for a suitable population group south of Santiago (Comunas La Cisterna y La Graña). It will emphasize intensive ambulatory and domiciliary treatment and will work out the most efficient methods of follow-up, which can be applied to the remainder of the country.

Several studies undertaken in 1960 in the high plateaux (*Altiplano*) of *Bolivia* indicated that tuberculosis is a serious public health hazard in that area. In 1961 the Government requested the cooperation of the Organization and of UNICEF for the establishment of a pilot project for the study of tuberculosis prevalence and control of the disease, and for training national personnel in tuberculosis control methods. The Organization will provide the services of a tuberculosis specialist and a nurse as consultants for this project, which will start in 1963.

The Organization has also cooperated with the Government of *Brazil* in the preparation of a plan for a pilot project on tuberculosis control to be carried out in the State of Rio Grande do Norte, with the assistance of UNICEF. This program was planned to start in 1961 but difficulties in the provision of the mobile X-ray units delayed its initiation. It is expected that the project will begin early in 1963.

A survey to determine the prevalence of tuberculosis in several provinces of *Argentina* started in the second half of 1960, with the cooperation of the Organization—which provided the services of three consultants—and the assistance of UNICEF. The survey in the Province of El Chaco was completed satisfactorily in 1961 and is being extended to Neuquén Province, this time carried out by national personnel only.

The organization of the National Tuberculosis Center at Santa Fe, with the cooperation of PAHO and UNICEF, was crystalized in 1961. The objectives of the Center include the development of a demonstration program for tuberculosis control in an urban and a rural area of Santa Fe Province; the training of physicians and other technicians; the instigation of studies in the field of tuberculosis control and in public health education; consultation to the provinces in their plans of tuberculosis control; and finally, stimulation and coordination of these activities with those developed by other agencies. Considerable progress has been made in the development of the project. The center at Recreo (Santa Fe), which combines a sanatorium, a large pilot dispensary, and a school for tuberculosis control, has been remodeling quarters, receiving equipment, and engaging personnel. Control activities have begun in the project area, and of special interest was the inauguration of the first course in May 1962. On this occasion only, the course was limited to Argentine physicians. Two short-term consultants of PAHO are serving on the faculty, as well as a staff specialist of the Zone VI Office.

The Recreo center will serve as a technical and research fountainhead for the tuberculosis control program of Argentina, and as an inter-American training center in its teaching aspects.

Under the stimulation of the PAHO Field Office at El Paso, the activities of the El Paso-Juárez tuberculosis committee are being extended to other twin-city border communities.

At the Pan American Zoonoses Center, expansion of the laboratory facilities is proposed in order to permit large-scale typification of mycobacteria. If financial aid is found for this project, it will be possible to study the extent of the role of bovine infection in human tuberculosis in several countries of Latin America.

Plans are advanced for holding a seminar in 1963 in Argentina, with the objective of discussing ways and means to utilize the new technical developments in the prevention of tuberculosis, and to stimulate action in country projects. This seminar will be attended by experts on tuberculosis control, epidemiologists, and public health administrators of the South American countries. Another seminar is scheduled for 1964, for the Middle America and Caribbean countries and territories.

Summarizing, it is gratifying to note the surge of increasing interest in tuberculosis control throughout the Hemisphere. From one pilot project in operation four years ago, there are now 10, either operating or soon to begin to operate. Thus, 10 countries are following the first recommendation of Resolution XXXVI of the XIII Directing Council.

These 10 centers of investigation, training, and model operation will have a positive influence in the

countries where they are created. The projects will emphasize, above all, that aspect of tuberculosis control which now, beyond any doubt, will dominate the field for the next many years: the ambulatory-domiciliary treatment of cases along with the protection of contacts by vaccine and by drugs. The technical means are available and the new centers will study the methodology of bringing them to all who need them, and will explore ways of motivating the populations to cooperate in the faithful long-term use of the drugs. This is a turning point in the history of the world-wide movement against tuberculosis; hospital treatment and vaccination, hitherto so prominent, begin to play secondary roles, and the administration of drugs to ambulatory patients assumes primary importance.

Annex 7

REPORT ON THE NUTRITION PROGRAM IN THE AMERICAS [1]

INTRODUCTION

In recent years, considerable emphasis has been placed on nutrition programs in the Americas for the following reasons, among others: (a) the awareness of public authorities of the seriousness and consequences of nutrition problems in the Hemisphere; (b) the progressive decline of certain communicable diseases, which has resulted in the emergence of other problems formerly not accorded high priority in public health programs; (c) better scientific knowledge of the problems and the means to solve them; and (d) the possibility of more extensive resources, both national and international, for a solution of these problems.

The XIII Meeting of the PAHO Directing Council (Washington, D.C., October 1961) discussed at length all aspects of the nutrition problem in the Americas and approved Resolution XI,[2] which enumerated the most urgent problems and recommended the measures to be adopted by Governments, as well as by the Pan American Health Organization, in order to solve them.

This report has been prepared in response to the final paragraph of the above-mentioned resolution, which reads:

To request the Director to present annually to the meetings of the Council a report on the nutrition activities carried out in accordance with this program, and on the progress made in overcoming the problems in this field.

[1] Document CSP16/6.

[2] *Official Document PAHO* **41**, 21-22.

The document presented by the Bureau last year gave a detailed account of the nature of the nutrition problem in Latin America; accordingly, the present report is intended merely to supplement the information on the programs that have been carried out, special emphasis being given to those completed during 1962.

THE PROBLEM

Resolution XI of the XIII Meeting of the Directing Council stated that the seriousness of the nutrition problem in the Americas was shown by a diversity of evidence, among which was the fact that the per capita food production in Latin America was higher before World War II than in 1959-1960.

Unfortunately, the situation has deteriorated rather than improved during the past year. The population growth has continued to exceed the increase in food production. The per capita food production index was 3 per cent lower in 1960-1961 than in 1959-1960 and was 5 per cent lower than before World War II.

The indices appear below: [3]

[3] *The State of Food and Agriculture.* Food and Agriculture Organization, Rome, 1961.

Per Capita Food Production	*Index*
Average before World War II	104
1948-1949 to 1952-1953	97
1953-1954 to 1957-1958	101
1958-1959	105
1959-1960	102
1960-1961	99

The slight gain made in 1958-1959 was lost in 1960-1961. The per capita production decline has been attributed to climatic factors, but that only shows that greater efforts are needed.

The afore-mentioned resolution of the Directing Council stated that the "problem of nutrition in the Americas severely affects the state of health of the population, resulting in high mortality and morbidity, especially among children, as well as inadequate physical development and output of work, all of which have deep repercussions on the social and economic development of the countries."

It is obvious that the magnitude of the nutrition problem in the Americas can now be appraised much more accurately than formerly. The mortality of children in the age group 1 to 4 years continues to be 20 to 30 times higher in some countries than in those that are more advanced technologically, and the association between mortality and the nutritional status of the areas is becoming increasingly clear.

Calorie-protein deficiency in children continues to be the most serious problem in the Americas. A large number of children are being hospitalized for ailments ranging from the extreme form of marasmus to the classic manifestation of kwashiorkor (infantile pluricarencial syndrome). The problem is serious not only because of the high mortality rate, but because those conditions have repercussions on the future physical and mental development of the people. Other specific serious problems in the Americas are the anemias and endemic goiter, which were dealt with at length in Document CD13/14 [1] presented by the Bureau at the XIII Meeting of the Directing Council in 1961.

In certain areas, vitamin A deficiency constitutes an important cause of eye lesions and even blindness.

Aside from those specific manifestations, the people in Latin America generally show signs of chronic malnutrition, characterized by insufficient development of height and weight in relation to their ethnic potential, an attitude of indifference, fatigue, and as a result, low productivity.

For the above reasons, the nutrition problem ought to be regarded—as stated in Resolution XI of the 1961 Meeting of the Directing Council—as one of the top priority problems in national health planning.

[1] *Official Document PAHO* **41**, 363-374.

PASB PERSONNEL

In 1960 the Bureau had one nutrition adviser. In 1962 there were five advisers, stationed in Colombia, Guatemala, Haiti, Trinidad, and Washington, to give advisory services to the Governments of all countries in the Region. Another adviser has been included in the 1963 budget.

It is to be hoped that this increase in personnel will benefit the nutrition activities being promoted by Governments in their respective countries.

The Bureau believes that such a marked increase in personnel for nutrition activities is in keeping with the recommendation made in 1961 by the Directing Council (Resolution XI, par. 3):

> To give its full support to the recently initiated intensification of activities in this field, and to recommend that, in view of the severity of the problem, the Director include in future proposed budgets the necessary allocations to ensure the progressive development of these activities.

NUTRITION IN NATIONAL HEALTH PLANS

One of the objectives of the Ten-Year Public Health Plan of the Alliance for Progress (Resolution A.2) approved at the Meeting of Punta del Este [2] is "to make substantial improvements in the feeding and nutrition of the most vulnerable sectors of the community by increasing the consumption of animal or vegetable protein." Another, undoubtedly one of the most impressive aims, is "to reduce the present mortality rate in children under five years of age by one half."

Obviously, those objectives are mutually interrelated. It will be difficult to reduce the mortality rate of children under five years of age by one half if there is not an improvement in their nutrition, especially an increase in their intake of high-quality proteins within a satisfactory over-all consumption of calories. To attain those objectives, nutrition programs must be soundly planned.

With that end in view, PASB invited a group of experts to attend a meeting in January 1962 and to prepare a report suggesting immediate and long-range measures to be applied in nutrition within the framework of national health plans in Latin America.

The meeting lasted for four days, during which

[2] *OAS Official Records*, OEA/Ser.H/XII.1 (Eng.), 1961, pp. 30-31.

the group discussed problems in Latin America, available resources, the order of priority of programs, the urgently needed measures, the training of personnel, the establishment or consolidation of nutrition services, the strengthening of maternal and child care programs, and the studies required in order to obtain a better knowledge of problems and their solutions.

The report of the PAHO Advisory Group on Nutrition will be distributed in due course to enable the Governments to utilize it, if they so desire, in preparing or revising their nutrition plans.

EXPANDED NUTRITION PROGRAMS

The programs that began modestly in 1958 have increased appreciably in various countries of the Region. The aim of those programs—which Governments are carrying out with the cooperation of PAHO/WHO, FAO, UNICEF, and on occasions, UNESCO—is to raise the levels of nutrition of the rural family by means of an intense campaign of education and the promotion of food production at the school, family, and community levels, with the participation of the ministries of health, education, and agriculture in a coordinated plan.

The programs began in Chile and Guatemala in 1958; they were extended to Paraguay in 1959; to Brazil, Costa Rica, and Ecuador in 1960; and to Bolivia, Colombia, El Salvador, Nicaragua, and Peru in 1961. Finally, in 1962, three countries—Brazil, Colombia, and Paraguay—extended the program to other areas and six new projects were begun in British Guiana, Honduras, Panama, and in the islands of St. Kitts, St. Lucia, and Trinidad.

A total of 19 projects are now in progress in 16 countries or territories, as follows:

Expanded Nutrition Programs. Number of Projects

Year	Begun	Expanded	Continued	Total
1958	2	–	–	2
1959	1	–	2	3
1960	3	–	3	6
1961	5	–	6	11
1962	5	3	11	19

The interest of Governments in these programs is also revealed by the fact that five new projects are currently being studied. It is within the realm of possibility that, in a year or two, almost all the Latin American countries and many of the Caribbean islands of the West Indies may have such programs. The contribution of Governments to the programs has been difficult to evaluate in monetary terms. Specialized international agencies, FAO and PAHO/WHO, have contributed experts in the fields of nutrition and agricultural extension. To date, UNICEF in the Americas has assigned a total of $1,752,000 in equipment, supplies, and stipends for courses.

There has never before been such a large-scale effort to improve the nutritional status of the people, yet the achievements are slight in relation to the enormity of the problem in the Hemisphere. But it is to be hoped that these programs, in conjunction with the social and economic development plans, may be able to help in improving the well-being of the people.

It would be an ambitious plan for the future, although not an impossibility, to arrange for all schools where physical and social conditions are favorable to undertake a food production program, giving special attention to protective foods, which are those most conspicuously lacking in the diet of rural families. In some areas, it will possibly be better to organize model farms and gardens to instruct the whole community, along with a program of supervised credits for rural families, as some countries have done.

The participation of health centers, as well as of agricultural extension units, is essential for the development of the program, and the respective ministries have understood that fact. The education of mothers, the nutritional rehabilitation of undernourished children, the campaigns against infectious and parasitic diseases, and the practical demonstrations of food preparation are among the activities that health centers are carrying on. The promotion of food production at the family level and of food preservation are some of the most significant activities being developed by agricultural extension units. And so, beginning with areas of 50,000 to 100,000 inhabitants—or even more, if supervision is possible—these programs can be extended in all countries of the Hemisphere in a coordinated action of the ministries of health, education, and agriculture.

DEVELOPMENT OF NEW SOURCES OF PROTEINS

Most Governments have expressed interest in new high-protein products not currently being used for

human consumption. In view of the limited availability of protein from traditional animal sources, such as milk, meat, fish, and eggs, it is obviously necessary to promote intensified production of those foods and also to utilize other potential sources of protein.

The Pan American Sanitary Bureau, along with FAO and UNICEF, has been promoting this policy in areas where the lack of proteins is most pronounced.

The product made at INCAP, known by the generic name INCAPARINA, is currently being produced in two countries; from 1960 to 1961, production was increased by 38 per cent. In May 1962, a plant for the production of INCAPARINA was opened in Nicaragua.

To date, six countries have been authorized by INCAP to produce that vegetable mixture. The selling price is approximately four times lower than that of milk, which the product resembles in protein content and quality.

Other products, based on soy beans and peanuts, are being developed in Latin America. Fish flour is an important source of protein; in Chile it is being used for human consumption, and possibly its use may soon be extended to Peru also.

The Bureau believes that this program to promote new sources of low-cost protein is valuable as an auxiliary tool in the improvement of human nutrition, provided that it is incorporated into the general policy of dietary improvement. Although in certain areas of the Americas it may at present be the key program to alleviate calorie-protein malnutrition in children, the term "auxiliary tool" is simply meant to indicate its limitations.

TRAINING

Fellowships

The Directing Council, at its XIII Meeting, urged to Director "to give special attention to the training of the necessary personnel, so that the different countries may be in a position to properly carry out their nutrition programs."

The Bureau has made great efforts in that direction during the past year.

Thirty-one fellowships were granted for nutrition studies in 1961, that is, almost eight times more than the average of seven preceding years. The awards from 1954 to 1961 are as follows:

1954	2
1955	3
1956	2
1957	4
1958	5
1959	7
1960	5
1961	31

Aside from the fellowships granted with the Organization's own funds, other agencies and foundations were induced to increase funds for that purpose.

Training Centers

Institute of Nutrition of Central America and Panama (INCAP)

One of the training centers most frequently utilized by the Bureau is INCAP. The three types of training offered at the Institute are perfectly attuned to the needs of Latin America, and at the same time are utilized by recipients of fellowships from other parts of the world.

(a) *Course on Public Health Nutrition.* The purpose of the course is to offer physicians who have been graduated from schools of public health intensive theoretical and practical training in nutrition. The principal objective is to give public health physicians a more thorough grounding in nutrition so that extensive knowledge of the subject and experience in it may enable them to perform their activities more effectively.

The course lasts for 10 weeks, and begins each year in mid-June. In response to the demand from other regions of the world, the course is given in English every two years.

(b) *Training of Nonmedical Nutritionists.* An increase in the number of nonmedical nutritionists in Latin America is urgently needed. Their activities in the fields of surveys, organization of programs, training, supervision, and evaluation is essential to the improvement of the status of human nutrition.

The PAHO Advisory Group on Nutrition, at its meeting in January 1962, agreed that the average need was for one nonmedical nutritionist for each 300,000 inhabitants. Several countries have already established that figure as a goal for the coming years. To achieve that average in Latin America, it will be necessary to intensify training activities considerably, but the basis of such a policy will be

to expand the teaching functions of the schools of dietetics already in operation—there are eight in Latin America—so that in addition to training staff who will be qualified to work in hospitals and other institutions, they will also be able to work in the public health field.

INCAP has organized a nine-month course, which will probably be increased to twelve months, to train public health nutritionists. A degree in dietetics, biochemistry, or pharmacy is the requisite for the course.

The collaboration of UNICEF in this training program has permitted INCAP to broaden the scope of its activity in this type of training.

(c) *Medical Nutritionists.* The scarcity of physicians who are specialists in public health nutrition is one of the most serious deterrents to the promotion of nutrition programs in Latin America.

INCAP has established a special course in this subject; its duration depends on the previous training of the candidates, but in no case is it less than one year.

The PAHO Advisory Group on Nutrition came to the conclusion that it would be necessary to train 400 medical nutritionists in Latin America in the next 10 years. Not only the courses offered by INCAP but also other instructional centers in the Hemisphere must be utilized in order to accomplish that objective. The Bureau is giving special attention to the problem.

Finally, INCAP is training professionals in the field of basic nutrition research.

Nutrition Training for Nurses

The Bureau and INCAP, with assistance from UNICEF, are preparing to organize a seminar to be held in 1962. Supervisory personnel in hospital and public health nursing will attend, as well as personnel in charge of the teaching of nutrition in nursing schools. The purpose of the seminar is to discuss the type of training that nurses are receiving and ought to receive in nutrition and dietetics. Preliminary work will be done for the preparation of a book on nutrition for nurses, which will be published by the W. K. Kellogg Foundation and possibly distributed in 1963.

Nutrition Training for Social Service Personnel

At the end of 1962, with the aid of UNICEF and the collaboration of FAO, the United Nations Office of Social Affairs, the Pan American Union, and PAHO, a three-month course will be given at the Inter-American Children's Institute (Montevideo) for executive personnel in charge of the teaching of nutrition in social service schools in Latin America.

This personnel is performing a very important function in community programs, and an appropriate social and economic approach to nutrition problems will permit it to exercise a beneficial influence on the improvement of nutrition. The Bureau will supply two consultants for its public health nutrition classes.

Course on Planning of Education in Nutrition Programs

The Bureau has prepared a plan for a course on the planning of education in nutrition programs, which is now under consideration by FAO and UNICEF. The purpose of the course, which may be held periodically, is to provide the personnel in charge of education in nutrition programs with training in the methodological aspects of planning, so that in the organization of such educational programs all pertinent factors will be taken into account. Attending the course will be nutritionists, health educators, public health nurses, domestic economy staff, agricultural extension personnel, and others responsible for the organization, supervision, and evaluation of education in nutrition programs. The course will last for three months.

Other Training Projects

Other projects are being studied in Latin America, such as the training in nutrition of agricultural extension personnel, at present being considered by FAO and UNICEF; the organization of nutrition departments in medical schools, viewed by the Bureau as an urgent necessity; the strengthening of nutrition programs in schools of public health; and others now in the planning stage.

The Bureau is very much interested in the recommendation made by the Directing Council in 1961, and is sparing no effort to intensify and extend its activity in the training of nutrition personnel, an essential part of nutrition programs which Governments undertake in their countries.

RESEARCH PROGRAM IN NUTRITION

As was stated above, one factor that has led to increased development of nutrition programs in

Latin America has been the existence of a large storehouse of knowledge that needs only to be applied in the field. However, much remains to be learned on the subject.

The Bureau has been engaged in nutrition research activities for a long time, especially at INCAP, and to a lesser degree, in collaboration with the Institutes of Nutrition of Ecuador and of Peru.

Moreover, WHO Headquarters has given some assistance to the Institute of Scientific Research of Venezuela to make a study on anemias.

The recent creation in PASB of an Office of Research Coordination, which will carry out its activities principally through an agreement with the U.S. National Institutes of Health, will make it possible to expand nutrition research to a considerable degree.

The PAHO Advisory Group on Nutrition concluded that a proper orientation of nutrition programs required additional knowledge of the epidemiological aspects of malnutrition, especially of protein-caloric malnutrition in children, hypovitaminosis A, ariboflavinosis, and endemic goiter. It also stated that the effects of malnutrition on physical and mental development had to be ascertained, and that the definition of mortality attributed to malnutrition needed to be improved.

The group also pointed out the necessity for making additional studies on high-protein foods, the relationship between nutrition and infectious diseases, the prevalence and causes of anemias, and the special nutritional needs of nursing mothers.

In addition to these concrete problems, the Group agreed that it was necessary to improve the methodology for evaluation of nutritional status and for nutrition education programs intended for different cultural, social, and economic groups of all ages.

In April, the Bureau called together a group of consultants in Boston to discuss specific projects of high priority in nutrition research, in order to present them at the meeting of the PAHO Advisory Committee on Medical Research, held in Washington in June.

The following four projects were submitted to that Committee:

(a) *The Effects of Nutrition on Physical and Mental Development in Children.* The project consists of a study of the mental and physical development of children in different ethnic, social, and economic groups in various Latin American countries. Initially, it would be carried out in four countries, where qualified experts are available to make such a study.

Since it is known that many preschool-age children in Latin America suffer from manifestations of calorie and protein deficiency, it is important to ascertain the degree to which that deficiency influences their subsequent physical and mental development. Preliminary studies made in Mexico indicate that there is a relationship between underweight and mental backwardness in children, and that both probably result from malnutrition. A more thorough study must be made on different ethnic and social groups in various Latin American countries.

(b) *Etiology of Anemias.* Anemias constitute one of the most serious specific nutrition problems in Latin America and the West Indies. There are many unknown factors in its etiology, and it is hoped that a proper epidemiological approach can clarify the situation.

These studies, along with the project of WHO Headquarters, can be carried out in three or four countries of the Region.

(c) *Endemic Goiter.* A special PASB consultant prepared a specific project for obtaining a better knowledge of the conditions and factors that have a bearing on endemic goiter. While it is evident that iodine deficiency plays an important part in its etiology, there are probably other genetic and dietary factors that explain the differences in the prevalence of goiter and cretinism in certain areas. Plans are being made to conduct studies in four or five countries in order to investigate the etiopathogenesis of the disease.

Meanwhile, the Bureau is continuing to urge Governments to set up salt-iodization programs.

(d) *Interrelationship of Nutrition and Infection.* The high rates of mortality from gastroenteritis, measles, and other diseases accompanied by extreme states of malnutrition indicate the need for a thorough study of this subject.

The interrelationship of nutrition and infectious disease is dynamic, frequently characterized by synergism and less commonly by antagonism. In general, the successful control of malnutrition, especially in children, lessens the propensity toward infection; and the reverse is true since their relationship is mutually dependent. The studies begun at INCAP, to which the 1961 report referred at

length, have encouraged the Bureau to expand the radius of activity to other research centers.

The four projects described—physical and mental development in children, the anemias, endemic goiter, and the interrelationship of nutrition and infection—will soon be promoted by the Bureau as the initial phase of its broad plan of research.

WHO Headquarters will continue to collaborate with the Bureau in its research on anemias and vitamin-A deficiency, which is already in progress.

PUBLICATIONS

In 1962, the Bureau distributed 4,000 copies of the Table of Food Composition for Use in Latin America, prepared by INCAP and the U.S. Interdepartmental Committee on Nutrition for National Defense.

In May 1962, distribution was begun of the Fourth Collection of Scientific Publications of the Institute of Nutrition of Central America and Panama (in Spanish) which contains 36 research papers on nutrition, totaling 373 pages.[1]

The *Boletín* of the Pan American Sanitary Bureau (Vol. LII, No. 4, April 1962) published the conclusions of the Seminars on Education in Nutrition that were held in Quitandinha, Brazil, and Guanajuato, Mexico, in 1960 and 1961, respectively.

FIFTH CONFERENCE ON NUTRITION PROBLEMS IN LATIN AMERICA

The Government of Peru has generously offered its country as the site of the Fifth Latin American Conference on Nutrition Problems, which will be held in La Molina in March 1963. The Conference will be sponsored by FAO and PAHO/WHO, with the collaboration of the Government of Peru. The four preceding Conferences took place in Montevideo (1948), Rio de Janeiro (1950), Caracas (1953), and Guatemala (1957).

One of the outstanding topics of the Fifth Conference will be "National Planning of a Food and Nutrition Policy." Experts in economics, agriculture, and public health, as well as nutrition experts, are expected to attend.

The Bureau wishes to stress the importance of this Conference, whose success will depend on the caliber and number of the participants sent by Governments. The document produced by the meeting can be very valuable as a guide for a food and nutrition policy within the general social and economic development plans prepared in the countries. As in previous Conferences, the Governments themselves will assume responsibility for the expenses of their delegates, while the host Government and the international organizations will assume the responsibility for the organization of the Conference and the publication of its report.

CONCLUSION

The Americas are resolutely moving toward a better future. Although it is not immediately possible to evaluate the results of the efforts being made, it is undeniable that a new spirit of activity has become evident in recent years. The seriousness of the nutrition problem in Latin America demands that it be studied not only as a biological problem but as an economic phenomenon as well. The people's diet could well be thought of in terms of economic capital, and for its administration a sum proportionate to the invested capital could be allotted.

Assuming that the daily cost for food for each person in Latin America is 25 cents, simple arithmetic leads to the conclusion that the annual investment in food is approximately 20 billion dollars. From the economic standpoint, the science of nutrition is nothing more than the knowledge of how to invest the capital produced by earth and sea, with man's help, in the best possible way to obtain the greatest possible return.

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[1] *Publicaciones Científicas del INCAP, Recopilación N° 4 (Scientific Publication PAHO* **59**).

Annex 8

REPORT ON THE STATUS OF THE CONTINENTAL PLAN OF COMMUNITY WATER SUPPLY AND SEWAGE DISPOSAL [1]

The community water supply program of the Pan American Health Organization and the World Health Organization is three years old. It dates from the meetings in 1959 of the Directing Council and the World Health Assembly, at which resolutions were adopted stressing the importance of more rapidly providing all the people with safe and adequate water supplies. The reports presented to the Directing Council in 1959 [2] and 1960 [3] reflect the early activities toward getting the water supply program under way in the Region of the Americas.

Since last year's report, the success of programs undertaken during the first two years has become evident. As with any program, a period of development has to be expected and results cannot be achieved within a few months. For example, the 1959 report showed no international investment that year for water in Latin America; in 1960 there were no loans; but in 1961 and early 1962 a total of US$128,000,000 was committed by the Inter-American Development Bank. Additional loans were made by the Export-Import Bank, and others are under study by the World Bank.

It is interesting to note also that the expenditures of Governments for water supplies appear to be rapidly increasing. During the past year, more than US$100,000,000 have been committed in national budgets, for the most part in addition to the regular amounts normally budgeted.

The new construction financed from loan and national funds will benefit more than 10,000,000 people.

The resolution establishing the water program recognized, it will be recalled, that financing posed the most serious problems in the construction of water systems in the Latin American countries. It will also be recalled that, in the Technical Discussions on water supply at the 1959 Directing Council meeting, the conclusion was reached that investment in water systems could be obtained only when their administration, management, and fiscal policies were sound. On these conclusions the Pan American Health Organization based the philosophy that has guided its operations throughout the past three years. This is that its greatest usefulness in this field lies in concentrating on the creation of well-conceived and well-managed water organizations; the establishment of realistic, revenue-producing rate structures; and the building of investor confidence. The PAHO has therefore placed great emphasis on its program for the development of sound management and fiscal policies. To promote them, it has conducted a number of courses, seminars, and symposia and has rendered advisory services in fields where an understanding of these principles could be best ensured. In future programs, such activities will continue to carry a high priority. The fact that investments in water supply by international banks have increased steadily during 1960, 1961, and 1962 is evidence of the lending institutions' confidence that their loans will be recovered from the water operations. The task now confronting the countries is that of justifying this confidence.

It has been pointed out that the international sources of money are inadequate to solve the water problems of Latin America or any other areas of the world, and that these problems must be finally resolved through the utilization of local resources. If the loans made for water supply act as a catalyst by demonstrating the feasibility of establishing sound water operations in the various countries, the funds will have been well expended.

A brief review of the status of certain aspects of the over-all water program in the Americas will indicate the situation as of the date of this report:

[1] Document CSP16/13.

[2] *Official Document PAHO* **36**, 282-286.

[3] *Official Document PAHO* **41**, 375-379.

Status of PAHO Special Community Water Supply Fund

In the year 1961, contributions to the Special Community Water Supply Fund were pledged in the following amounts: U.S.A., US$150,000; Uruguay, 20,000 pesos. In 1962 to date, the contributions pledged have been as follows: Colombia, US$5,000; U.S.A., US$300,000. At the present levels of expenditure, all funds contributed for the water program will have been expended by 1 January 1963. As shown in the Appendix, these funds are being used primarily for direct consultant help to Governments. Part has been or will be used for regional short courses and study groups, part for short travel fellowships, and part for special studies of regional interest.

The importance which must be placed on the Organization's efforts to achieve good management, and the requests being received from Governments for technical assistance of all types, far exceed the limited funds available from the regular budget, and continuing support of the Special Fund is therefore necessary if concentrated work is to continue in the water supply field.

Status of Long-Range Plans for Water Supply

1. *Urban Water Supply*

Several countries have completed 10-year plans for water supply in their urban areas. In most instances these plans will require additional engineering studies before construction activities can be started. Needed changes in organization and management practices have been undertaken in some cases; in others, much still remains to be done.

In general, the urban water program is progressing and it would appear that if the present level of activity continues, the goals set in the Charter of Punta del Este for urban water supply will be realized in many countries.

2. *Rural Water Supply*

The outlook for rural water supplies and for reaching the Charter goals in 10 years is less optimistic than for urban water. The reasons for this less favorable situation are several. The most important, however, are:

(a) Ministries of health have not the engineering personnel and organization to undertake a job of this magnitude.

(b) Rural project financing is more difficult than urban and requires greater concentration on efforts to obtain local sources of money.

Neither of these obstacles is insurmountable, but without immediate attention and action, the rural objectives will not be met. The action needed ought to include at least the following:

(1) An immediate strengthening of the environmental sanitation services of the ministries of health by:
   (a) Raising the engineering services to a level at which they are directly responsible to the minister.
   (b) Providing the budget and the posts needed to staff the environmental sanitation services at national and local levels.
   (c) Providing salaries and career opportunities for engineers in the health services which will attract and retain competent personnel.

(2) Utilization to a maximum of local sources of funds for rural water supplies by:
   (a) Having engineers, health educators, sanitarians, nurses, doctors, and other health personnel participate in mass-education programs on the need for and ways to obtain safe and adequate water for rural areas.
   (b) Stimulating local self-help projects.
   (c) Developing local committees whose objective, among others, will be to find local funds to help pay for water facilities for their community.
   (d) Assigning to the ministry of health engineers the task of studying new approaches and methods of financing applicable to local conditions.
   (e) Concentrating action on rural communities where people are in greatest need and show the greatest interest in helping themselves through contributions and work.

In summary, the rural water objectives of the Charter of Punta del Este can be reached in each country, but only if the engineering services of the health ministries are immediately strengthened and local participation by the people is stimulated to the maximum.

Status of Projects

Water projects, both urban and rural, are now under way in many countries. In about 26 projects international funds are involved. In these projects there has been, and will continue to be, a time lapse after approval of a loan and the beginning of construction. This is true because final engineering plans and specifications have to be completed, equipment and construction contracts let, and supplies delivered. Management and organizational changes involving legal action are frequently involved, which also require time.

Therefore, it is important to stress that the development of any sound project will require years, rather than months, from beginning to completion.

Government action to ensure the good management on which the success of water projects hinges is less at present than could be hoped for.

Present Status of Waterworks and Sanitation Personnel

The limited numbers of trained personnel in most countries need not be an immediate obstacle to the development of water programs. For the 10-year goals, however, the personnel requirements will exceed the present supply and steps must be taken in each country to immediately utilize to the maximum all existing engineering personnel and to begin to train the additional numbers required. As mentioned earlier, the organization and conditions of employment must be substantially improved or engineering personnel will be discouraged from working as members of the health team.

Status of Loans for Water

It can be predicted that, in the future, conditions for international loans for water supplies will become more rigid. In the past year and a half, new policies and procedures had to be developed. This period is ended. Sound projects able to show good organization leading to good management will have excellent chances to receive money. Poor projects will have poor success in obtaining funds.

Good management and fiscal responsibility will become more and more important.

Status of Water Projects for the Future

An evaluation of the Organization's activities under the water supply program in the past three years leads to the conclusion that considerable activity has developed along the recommended lines, which will ensure the channeling of ever-increasing funds into urban water systems. To ensure the proper use of these loan funds and the ability of the systems receiving them to become self-sufficient and demonstrate the value of good organization and management, continued emphasis is believed necessary on programs that will assist the Governments in strengthening these aspects of the systems. At the same time, the programs within countries will be enabled to expand so as to cover water systems that are entirely locally financed. The evaluation also indicates that, because of the marked progress made in the urban field, increasing attention must be paid to smaller communities and rural areas. Therefore, the Organization's programs will place more and more emphasis on assisting Governments to meet the problem of rural communities. Studies are now under way, and will be continued, on finding finance and administration mechanisms suitable to local water systems in these areas. The objectives of the Organization will thus be broadened to cover the entire gamut of water supply, urban and rural. Great stress will be laid in all future programs on the training of personnel to undertake the work at local levels and on the mobilization of local resources to the utmost possible extent. Attention will also be given to the in-service training of engineers through short courses, seminars, symposia, and travel fellowships. Through the improvement of existing staff and the better utilization of all personnel, it is believed that the existing limited resources can be concentrated in a manner which will best ensure the successful implementation of the planned programs.

It is believed that the actions of the previous meetings of the PAHO Directing Council and the World Health Assembly in noting the importance of water to health, and in providing for priority programs to help solve the world problems of water shortage, have done much to focus the attention of world leaders on the importance of water to social and economic development. The importance of water to housing, tourism, industry, and urbanization further impresses national planners with the necessity to give water a high priority. It is therefore believed that water is firmly established in the minds of economists, bankers, and national officials as a priority item in all national plans.

It is for ministries of health to take advantage of the opportunity and to exercise their duties and responsibilities.

Summary

This brief report has attempted to set forth the activities of the Pan American Health Organization in the regional program of water supply. The activity which has developed in practically every country of the Region during the past year is a clear indication that the basic philosophies of the Organization's program are sound, and that in almost every instance those Governments which have established 10-year plans for water supply will be able to meet their goals if the present level of activity is continued.

Increasing emphasis will be placed by the Organization on finding solutions to problems of rural water supply and making this information available to Governments, with the hope that the 10-year goals for the rural water supply program can also be realized in many areas. The Organization will continue to offer the Governments services of all types to help them solve the many problems with which they are confronted in both urban and rural water supply programs.

Appendix

ACTIVITIES IN WATER SUPPLY DURING THE PAST YEAR

The Organization's activities during the past year in the field of water supply were as follows:

1. Advisory services were provided to the Governments of Bolivia, Colombia, El Salvador, Honduras, Panama, Peru, and Venezuela on long-range national plans for water supply.

2. Advisory services in water supply design were provided to the Governments of Colombia, the Dominican Republic, Ecuador, Guatemala, Haiti, Mexico, St. Lucia, and Venezuela.

3. Training in water supply design was given for engineers from El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, and Panama.

4. Advisory services in water supply accounting were provided to the Governments of Brazil, Colombia, Panama, Peru, and Venezuela.

5. Assistance in water supply management was given to the Governments of Brazil, Colombia, Costa Rica, El Salvador, Nicaragua, Peru, and Venezuela.

6. Support was provided in the technical design problems of water supply in British Honduras, Chile, Ecuador, Guatemala, St. Lucia, and Venezuela.

7. Assistance in the preparation of documentation for loan submissions was given to the Governments of Brazil, Colombia, Ecuador, El Salvador, Guatemala, Panama, Peru, and Venezuela.

8. Consultant services were provided to the Governments of Colombia, Peru, and Venezuela on public information and education in water supply.

9. Assistance was given to the Government of Honduras on matters related to the establishment of a water supply laboratory, and a general assessment was made in six other countries on water laboratories and water quality control.

10. Engineers from all countries of the Region were invited to provide information on water supply design criteria, and an opportunity to discuss these criteria will be given at a regional seminar to be convened in September 1962.

11. Assistance was given to the Governments of Brazil, Colombia, and Guatemala on problems related to the fluoridation of water supply through the use of fluorspar.

12. Assistance in the field of water rates and water supply financing was given to the Governments of Barbados, Bolivia, Brazil, Colombia, the Dominican Republic, Ecuador, Guatemala, Haiti, St. Lucia, and Venezuela.

13. Joint activities of the Organization and the Inter-American Development Bank in the field of technical assistance have been conducted in Bolivia, Brazil, Ecuador, El Salvador, Paraguay, and Peru. These have ranged from preliminary engineering studies to management assistance after loans.

14. Assistance was given in the technical development of well drillers and ground-water development in Argentina, Bolivia, British Guiana, Chile, Colombia, Mexico, Paraguay, and Venezuela.

15. Assistance in the revision of plans and loan presentations was given in the Washington Office to delegations from Brazil, Colombia, Ecuador, Panama, Peru, and Venezuela.

16. General consultations relating to the development of water supply programs were held in Barbados, British Honduras, Dominica, the Dominican Republic, Ecuador, Grenada, Haiti, Mexico, Nicaragua, Paraguay, and St. Lucia.

Annex 9

DIRECTOR'S REPORT ON THE RESEARCH POLICY AND PROGRAM OF THE PAN AMERICAN HEALTH ORGANIZATION [1]

During the quadrennium 1958-1961 and in the first six months of the present year, there have been significant developments in the medical research program of the Organization. The research program was undertaken in the light of the basic objectives of PAHO as stated in Article 1 of the Constitution:

> The fundamental purposes of the Pan American Health Organization shall be to promote and coordinate efforts of the countries of the Western Hemisphere to combat disease, lengthen life, and promote the physical and mental health of the people.

In recognition of these purposes and of the growing importance of research as an essential component of a comprehensive program for the betterment of health in the Americas, and as instructed by Resolution XXXVIII of the XIII Meeting of the Directing Council (Washington, D.C., October 1961),[2] studies have been undertaken to guide an expanded and intensified research and research training effort to solve health problems for which there are presently inadequate or no available answers. As the program develops, it will be related to the particular needs and opportunities for research existing within the countries. It will emphasize research projects requiring coordinated effort by more than one country and research activities that will stimulate a wider application of existing and new knowledge to the special problems of each country. In addition to the great and growing resources of the Americas, PAHO will draw upon the diversified experience of the World Health Organization. The research policies and programs of both Organizations will be fully coordinated, bearing in mind the opportunities and special needs and requirements of the Americas.

Agreement between the Pan American Health Organization and the United States Public Health Service

An important development in the quadrennium which greatly strengthened PAHO's research activities was the agreement, announced jointly on 16 December 1960, between the Pan American Health Organization and the US Public Health Service. The agreement,[3] issued as a "statement of arrangements" between the two organizations, focused on three main points: (1) staff collaboration between the two organizations; (2) further development of PAHO research activities; and (3) definition of forms of USPHS aid that might be applied to PAHO research activities. Under the agreement, the USPHS will consider proposals for grants made by investigators who may wish to participate in research programs coordinated by the Organization, as well as applications for grants in support of research to be conducted directly by the staff of the Organization.

In line with this agreement, the Organization in 1960 encouraged the Bureau of Public Health Economics of the University of Michigan to apply for a research grant from the National Institutes of Health of the USPHS, for a study of the economic implications of malaria eradication in the Americas, and pledged to make a supplementary contribution equal to 10 per cent of the amount granted by the NIH. Consequently, when a grant of US$95,000 was made by the NIH for a three-year study of the problem, the Organization provided US$9,500. This study is now in progress, with the Organization providing assistance in planning the field work and in selecting the areas to be studied.

[1] Document CSP16/35.

[2] *Official Document PAHO* **41**, 37.

[3] *Ibid.*, 383-384.

Another example of effective collaboration under the agreement is the study of comparative mortality rates by causes in nine cities of the Americas, organized in 1961 by the Health Statistics Branch of the Organization, which promises to provide valuable data for future epidemiological studies on geographic differences in the distribution of fatal diseases.

Research and training activities are also expanding at the Institute of Nutrition of Central America and Panama, the Pan American Foot-and-Mouth Disease Center, and the Pan American Zoonoses Center. These programs are solidly founded on proved systems of international cooperation among interested countries. In each case PAHO provides administrative and logistic support and technical supervision. It is gratifying to note that these centers are attracting substantial voluntary grants, on a mounting scale, with which to expand their research efforts. The Organization thus serves its Governments by maintaining a relatively small central core of expert personnel who are able to attract the scientists and grants without which the difficult problems of malnutrition, foot-and-mouth disease, and the zoonoses will not be solved.

It is evident that, as the research interests and activities of the Organization have expanded, an increasing responsibility has devolved upon Headquarters to provide sound policy guidance and logistic support for existing programs and to develop studies looking toward the solution of many other problems of an international nature not at present directly encompassed in the Organization's program.

Office of Research Coordination

Recognizing the Organization's need and its unique resources and objectives, and in the spirit of the agreement of December 1960, the USPHS National Institutes of Health made a grant of $120,750 in 1961 to permit PAHO to make the necessary studies to provide the basis for a sound, effective, and productive expansion of its research policy and program. To assist the Director and the technical branches of the Organization in carrying forward such studies, an Office of Research Coordination was created late in 1961. Among the subjects which have been identified thus far as requiring research and research training efforts on a more intensive and coordinated basis are: arthropod-borne viruses, Chagas' disease, foot-and-mouth disease, leprosy, malaria, plague, and schistosomiasis. Wider areas where intensified research is required are the zoonoses in general, nutrition, dental health, radiation health, mental health, maternal and child health, environmental health, medical care, and health economics.

The present report, together with Document RES 1/19,[1] provides an over-all appraisal of the existing research program and reviews a number of proposals for the expanded program. Expert consultants and staff specialists reviewed the status of knowledge in each field of subject matter, appraised the resources available for research, and suggested promising lines for further investigation.

Report of the PAHO Advisory Committee on Medical Research

To assure the broadest and wisest possible consideration of these complex and difficult problems, the assistance of the PAHO Advisory Committee on Medical Research is invaluable. This group of 12 distinguished scientists, educators, and administrators of the Americas convened in Washington for their first meeting from 18 to 22 June 1962 to consider the reports and recommendations of the expert consultants and of the Organization's technical branches and research centers. The Committee's Report and recommendations, including summaries of the documents which it reviewed, may serve for the information and guidance of the Governments and of the Conference. In some instances, it will be noted that further studies are suggested and additional reports are called for.

In a fast-changing, interdependent world in which revolutionary advances in all branches of science and technology, not least in the biomedical field, are the order of the day, the work of planning and coordination must proceed on a continuing basis. However, this report is made in the fullest confidence that the outlines of a long-term policy on research for the Organization have emerged and that, with the approval of the Conference, its Governments will be assured of an intensified and expanded program of research and research training with which they will wish to cooperate. While the Organization has demonstrated over the years that the pooling of resources in a concerted attack on un-

[1] Report on the First Meeting of the PAHO Advisory Committee on Medical Research, 1962 (mimeographed).

solved problems is a very good method of getting results of benefit to all at a reasonable cost, in the longer run biomedical research in the Americas can be no stronger than the research interest and resources of the countries.

In this connection, the Advisory Committee report recommended (page 6, first paragraph):

> . . . that each country carry out, by means of . . . a national research council, or by some other means, a radical study of the programs in the health and related sciences, so as to identify where research activities should and could be stimulated and career appointments made to advantage. It was recommended that PAHO support these studies by offering the services of consultants.

Such studies would be invaluable to the Organization in shaping its program to meet the needs and opportunities of each country and of the Americas as a whole.

Definition of Research

In considering research broadly, the Committee made some illuminating observations on so-called "fundamental" and "applied" research (page 1, last paragraph):

> It felt that all genuine good-quality research is fundamental if it contributes to the more complete understanding of the multifaceted aspects of complex problems. This is particularly so when dealing with man, who is the central object of its concern.

The Committee observed further (page 2):

> Fundamental science is not distinguished by the use of mathematical, physical, or chemical methods per se, but rather by the relevance of the research to an intellectually and practically satisfactory solution of the problem at hand.
>
> The immediate purpose of supporting research in Latin America is to solve problems related to health in a manner which will promote human welfare . . . The long-range goal is to promote the upgrading of the community in its most human aspects through the cultivation of science.

It was from this broad, philosophical, yet at the same time, practical point of view that these distinguished leaders of science and public affairs approached their analysis of the subject matter in the documents, and their counsel was most helpful and always practical.

Expanded Program and Research Priorities

The Committee reviewed research needs and recommendations for intensified efforts in the study of Chagas' disease, malaria, schistosomiasis, leprosy, plague, arthropod-borne virus diseases, and some of the zoonoses. It also considered reports and recommendations in the more general fields of environmental health, dental public health, maternal and child health, nutrition, radiation health, medical care, and health economics.

The Commitee's analysis, priorities, and recommendations are being studied by the Organization in developing an action program appropriate to its resources. It is clear that the range and diverse character of the expanded program is such that it will take time to implement all of the promising lines of investigation suggested by the Committee.

It can be stated, however, that the Organization and its Governments now have in their hands a solid body of up-to-date knowledge about a wide range of research needs, urgent problems requiring solution, and promising lines for intensified research.

Concerning priorities, the Committee observed (page 3, last paragraph):

> The bases for the establishment of priorities are several. The research project must be relevant to the field of health and it must somehow promise dividends in terms of new and significant knowledge and of increased human welfare. It is rarely possible to obtain an accurate idea of the economic importance of the problem to be studied, because of lack of data in this area. Since this important criterion could so rarely be used, research on diseases with high morbidity and mortality would tend to have a high priority. The *sine qua non* for support is that there be competent individuals in centers with adequate facilities to carry on the project. It is also important that the research project not duplicate other research under way. Other things being equal, preference should be given to those programs which are peculiarly significant for Latin America or to those which involve international cooperation. Finally, even if several of the above conditions are not fulfilled, the Committee felt that a project might be considered if its support will have a favorable effect on the research potential of the country.

The limiting factors in implementing the program endeavors are research resources, skilled manpower, and institutional resources and drive. While there are several outstanding research centers and programs in Middle and South America, the important health problems under consideration call for a sustained research development effort by the Americas as a whole and by each country concerned, to develop national and international institutional resources to accomplish the ends sought.

Recognizing that successful research enterprise begins with imaginative, trained, skillful individuals who have the equipment with which to work, the Committee emphasized (page 2, last paragraph):

A long-range policy in scientific development must have as its basis the detection of young scientific talent, its encouragement, and its promotion through fellowships and other means. All efforts should be made to identify the best existing research centers in order to strengthen and supplement their research and encourage them to foster their own programs of study at the postgraduate level. It is essential to arrange for the education of young trainees within the framework of these centers, so that traveling abroad will be necessary only in exceptional cases. The research and training centers should be supported by providing fellowships for students as well as equipment and funds to cover the expenses of the trainees.

It will be noted that the expanded program is concerned with three broad areas of research which bear directly on the health and well-being of the people of the Americas. These are:

1. Biomedical research on certain communicable diseases about which current knowledge is inadequate or non-existent, to bring about their control and possible eradication;
2. Applied and basic research in environmental health having to do especially with sanitation, pure water supply, waste disposal, and industrial health problems; and
3. Biosocial research dealing with the economics and social anthropology of health and medical care.

From a glance at the past and present program of the Organization, it is clear that during the entire 60-year history of the Organization communicable diseases have had and still have the highest priority. This will continue to be so, but if these diseases are ever to be brought under control there is only one way to do it and that is by acquiring, through biomedical research on the agents and vectors of the diseases, the necessary knowledge to deal with them effectively. These health problems are international ones and the Organization is well equipped to provide leadership and to coordinate intercountry efforts to solve them.

The second category of problems concerns the influences of the environment on health and disease. They are manifold. The unsanitary and other untoward conditions which prevail in many regions of the Americas are well known. These are problems which call for research on the application of known principles to local conditions which vary widely in the Americas. Toward this end, the Committee recommended (page 9, second paragraph) that each country establish an experimental station associated with a technical institution,

. . . where solutions to problems of applied research, adaptation of known principles, and the training of technological personnel could be stimulated. . .

These urgent problems can only be solved by the countries themselves, but PAHO can be of assistance in providing, upon request, expert consultant services in planning the experimental stations and research programs.

The third broad category concerns the social and economic aspects of health and disease and of medical care. Concerning the social-ecological factors, the Committee further recommended (page 9, last paragraph):

The need for exploring anthropological approaches, human behavior, and mechanisms of mass education to accept new ideas and to change existing habit patterns is as important in treating problems associated with the environment as it is in all public health activities, and warrants emphasis in any consideration of applied research.

Recognizing that the gap between what is known about health and disease and what is being applied in practice is large and may be growing, the Committee observed (page 29, last paragraph):

Research in medical care and its economic aspects would help tie up health with the general growth and development of a country, and establish the basis for a general body of doctrines related thereto. This type of research fits in very well with the present timely interest in the rational planning of many aspects of social and economic development in the Hemisphere.

It concluded (page 30, second paragraph) by giving this field of research "a very high priority level on a par with biological and medical research."

As a matter of urgent necessity, therefore, the Organization will extend its best efforts to assist countries in establishing research activities that look toward closing this dangerous gap. It is clear that such action is vital to the success of national plans for development in the decade ahead, under the Charter of Punta del Este.

In this broad and important field, as in the general area of biological and medical research, na-

tional and international research resources for pursuing necessary investigations and for training research workers will determine the pace of progress toward the ends sought.

PAHO Policy on Research

The outlines of a research policy for PAHO that emerge from the considerations previously discussed are clear. The policy has evolved over a period of years as the Organization has gained experience in solving problems in the pursuit of its long-term objectives. However, in facing up to its developing and greatly expanded future responsibilities, in large part reflected in the afore-mentioned documents, it is well to state explicitly the policy which, with the approval of the Conference, will guide the Organization's action program in the quadrennium ahead.

The research policy of PAHO is to assist the Americas in the development of the necessary research resources for solving the most pressing health problems of the people.

The guiding philosophy of the proposed policy is that poor health and disease involve the complex of functions of the human organism as a biological entity, and inseparably also the interaction of the individual with his social and physical environment. In short, biomedical research embraces the study of all the biological and environmental factors which if out of balance and uncontrolled may cause ill health, disease, and incapacity of the individual to function as a normal human being.

To develop healthy modern living conditions involves investigation of how a community, be it rural or urban, lives—an analysis of its systems of communication and cultural institutions and patterns, and of the physical environment within which its health services function. From these basic research data, practical plans can be developed involving not merely needed medical care services, but also the necessary participation of the people themselves in all aspects of preventive medicine and disease control in order to create a healthy, sanitary environment at home, at work, and at play.

As was stated at the outset of this report, the expanded research program, as it is being developed, will be related to the particular needs and opportunities for research existing within the countries. It will emphasize research projects requiring coordinated effort by more than one country and research activities that will stimulate a wider application of existing and new knowledge to the special problems of each country. Research which will solve operational problems of the programs themselves will be undertaken, including especially research that will assist the Americas in implementing the health aspects of national development plans. Besides the growing resources of the Americas, PAHO will draw upon the diversified experience of the World Health Organization. The research activities of both Organizations will be fully coordinated, bearing in mind the opportunities and special needs and requirements of the Americas.

Implementation of the Policy

In implementing the research policy, subject to the approval of the Conference, assistance will be made available to the Organization's Governments, upon request, to assess the status of their research resources and to promote their development for the solution of national health problems. The assistance will take the form of expert consultant services for organizing research activities and training programs in existing educational and research institutions, and also, for helping to organize new institutions as needed. Such assistance will embrace consideration, on a high-priority basis, of the economic and financial aspects of health services and medical care in national development planning, a heretofore neglected field of basic research.

Many countries of the Americas share similar health problems, and when two or more of them seek to pool scarce resources in an international research center to achieve mutually desired ends and request the assistance of PAHO in such undertakings, the Organization will respond within its available resources, as it has done in the past, by offering its experience and counsel in inter-American cooperative efforts. Moreover, PAHO will undertake to use its good offices in attracting the interest of fund-granting organizations, providing that the countries concerned furnish the basic minimum facilities and personnel required for such partnership efforts.

Recognizing that the establishment of an international research center takes time, and realizing that many of the research projects of the expanded program presented herewith should be undertaken with the least possible delay, the Organization will undertake to coordinate the planning of cooperative

research efforts of the countries concerned. It will also endeavor to be of assistance in securing the necessary support funds.

Furthermore, in the future, as in the past, the Organization will seek by all available means to expedite communication among research workers and public health officials, as well as among educational and research institutions. It will continue to sponsor research conferences, media of communication, and fellowships, and institute a program of research traineeships and in other ways expedite the exchange of information and skills in developing the health-sciences community of the Americas.

In furtherance of these ends, the Office of Research Coordination will develop and maintain an up-to-date roster of the health-sciences research institutions and personnel of the Americas, based on national inventories and assessments.

As the policy unfolds in action, an annual review and appraisal will be made and referred to the Advisory Committee on Medical Research for its critical review and recommendations. Annual reports will be made to the Directing Council and to the Governments of the Organization.

The entire program of research development, as well as the policy, will be subject to review at the next Pan American Sanitary Conference in 1966.

Financial Arrangements

The Organization's program of research to date has been maintained and expanded with a relatively small investment by the Governments sufficient to support a small corps of experts, individuals who for the most part cover several fields.

The investment has yielded great dividends because the quality of work has attracted the interest of other scientists and of fund-granting agencies.

Upwards of one million dollars is contributed annually in the form of research grants from the USPHS National Institutes of Health and from private foundations and other sources for projects at research centers and at Headquarters.

Even with an anticipated one-year extension of the present NIH grant for planning and coordination activity, it will become necessary—as the program gathers momentum—for the Organization to fund the costs of the continued function of this office in the amount of $100,000 in 1964, $125,000 in 1965, and $150,000 in 1966.

The program itself, which is reflected in the report of the PAHO Advisory Committee on Medical Research, will be funded project by project as granting agencies become convinced of their merit and of their importance to the health of the Americas.

Conclusion

The Americas are on the move and the Organization's role in the vast international and national efforts to raise the standard of living of the people and create a healthier life for all is an exceedingly important one. To discharge its responsibilities to the Governments during a period of revolutionary advances in science, biomedical research must expand in many directions if the Organization is to continue to merit the same confidence of the international community of the Americas which it has enjoyed for the past 60 years, as a result of the services rendered to combat disease and prolong productive life.

Annex 10

REPORT ON THE RESEARCH PROGRAM ON MORTALITY STATISTICS IN THE AMERICAS [1]

In accordance with the plans presented by the Director to the XIII Meeting of the Directing Council [2] in October 1961, the Organization has initiated a research program in mortality statistics. The purpose of this project is to obtain basic data as comparable as possible to serve as background for epidemiological research in the Americas. Because of differences in extent of certification by medical personnel, terminology in use, nosological viewpoints, lack of diagnostic standards, and methods of certifying the underlying cause of death, mortality statistics for countries at present are not comparable. As a first step in obtaining satisfactory data it was considered advisable to collect information from large cities where some of these problems are not so great, since medical facilities are readily available and most deaths are certified by physicians. The method of procedure is to have each death in the study investigated through interviews in the home, hospital, and clinic, and with the physician to obtain as complete a record as possible of the fatal illness, including results of laboratory and other diagnostic procedures and autopsy findings. A study sample of approximately 2,000 deaths per year among persons between the ages of 15 and 75 years is planned from each of ten cities for 1962 and 1963, giving in all 40,000 questionnaires for analysis.

The Directing Council in 1961 supported this research program in Resolution VII,[3] in which it recommended that Governments give the program full support so that the benefits of this intensive investigation of mortality on a regional basis may be fully utilized, not only to provide clues for epidemiological studies but also to improve the quality of mortality data essential for health planning. It also recommended to the Director of PASB that the Organization assist the investigators in the cities selected, so as to ensure that the coordinated investigations provide comparable basic data and that the results of this research program are fully utilized in health services, in epidemiological studies, and in teaching in medical schools.

During 1961, the planning phases for the research program were carried out, starting with a planning conference in May to consider the soundness of the proposal. Authorities on the subject of classification of diseases and causes of death—Dr. Percy Stocks, formerly Director of the WHO Center on Classification in England; Dr. Darío Curiel, Director of the Latin American Center for Classification of Diseases in Venezuela; and Dr. Iwao Moriyama of the United States National Center of Health Statistics—participated in the development of plans and the design of the questionnaire for the study of fatal illnesses and injuries in cities of the Americas. The conference agreed that it was highly important to establish an accurate and comprehensive picture of mortality by age among the adult population in selected cities of the Americas, and that the effort and expense of such an investigation would be fully justified.

In order to select the cities and collaborators with the necessary qualifications as outlined in the proposal, potential collaborators in medical schools, public health schools, and national health services were visited. Pilot testing of the questionnaire was initiated in August 1961 and more than 500 questionnaires were completed in eight cities. The analysis of the pilot testing demonstrated that the structure and actual content of the questionnaire were in general suitable for the purposes of the study. In November 1961, the United States Public Health Service, through the National Institutes of Health, awarded a grant for the field work of the project, entitled Inter-American Investigation of Mortality, for a two-year period beginning in 1962 and ending in 1964.

The protocol planning conference of the principal collaborators, to develop the final standard ques-

[1] Document CSP16/36.
[2] *Official Document PAHO* **41**, 76-78.
[3] *Ibid.*, 19.

tionnaire and procedures for use in all cities in the investigation, was held from 22-30 January 1962. A Manual of Procedures was issued in order to maintain uniformity throughout the investigation.

Field work was started utilizing deaths of adults 15-74 years of age occurring in January 1962 in five cities: Bogotá, Colombia; Caracas, Venezuela; La Plata, Argentina; Lima, Peru; and São Paulo, Brazil. Work started with the investigation of deaths occurring in March in Guatemala City and Mexico City, and with those in May in Cali, Colombia. Local circumstances delayed the beginning of the project in Santiago, Chile. Delay was encountered in the development of plans for the inclusion of one or more cities in English-speaking countries. However, it is expected that two such cities will be included shortly. The principal collaborators (given in the Appendix) are epidemiologists, statisticians, and other members of faculties of public health schools, medical schools, and national health services.

By the end of June 1962 completed questionnaires in seven cities were available for analysis for this first preliminary report. These questionnaires were reviewed by the medical referees (Dr. Stocks and Dr. Curiel), and the underlying cause of death was assigned independently by the two referees according to the international standards. If in the judgment of the referee the evidence was not sufficient to justify the designation of a single cause, he designated two causes with certain weights.

Because work in the cities started at different times, the numbers of completed questionnaires available for processing from these cities varied considerably, as shown below:

Bogotá	287
Caracas	335
Guatemala City	130
La Plata	384
Lima	339
Mexico City	30
São Paulo	56

Since the numbers of deaths for São Paulo and Mexico City were less than 100, they have been excluded from this analysis. Although the numbers of deaths in the other five cities were not large enough for detailed study, this preliminary analysis has been made principally to evaluate the procedures and to consider the suitability of the data for the purposes of this project.

For the study, cities were selected in which it was felt that hospital facilities and medical care would be readily available for residents and thus the medical histories and diagnostic evidence would be satisfactory. At this time, a summary of such evidence is useful as a measure of the quality of the data from the cities.

The first method of evaluating the material in this respect is through consideration of the deaths according to place of death (Table 1). In three of the five cities, over half of the deaths occurred in a hospital. Deaths occurring in emergency services are included as hospital deaths, since these services usually have the necessary equipment and diagnostic facilities of a hospital.

Over 60 per cent of these deaths were of persons who had been in the hospital in the last year of life or died in the hospital (Table 2). The proportion without medical care in the last year is small. Many of those without care or for whom information could not be obtained—the group under "Not stated"—died from an accident or other violence. Thus the medical care rendered in hospitals or by physicians in clinics, offices, or homes appears to be sufficient to give relatively complete information. Of course, some difficulties have been encountered in obtaining data in the field. On the whole, however, the situation is favorable and the principal collaborators are doing very well in overcoming many difficulties in locating families, physicians, hospital records, etc.

The value of the data is increased if, in addition to clinical histories, laboratory and pathological findings are available for use in the assignments of the causes of death. The proportions of these deaths in which autopsies were carried out are given in Table 3. Here a marked variation is noted for the five cities. In Caracas and Bogotá, the percentages were high; however, many of the medicolegal autopsies in Bogotá were incomplete, performed principally for deaths from external causes. The percentage of the deaths with complete autopsies was highest for Caracas, namely 28.3. The others were 12.2 per cent for Bogotá, 8.5 for Guatemala, 2.6 for Lima, and 1.8 for La Plata. Thus, extension of pathological work in some of the cities is a matter of great urgency. It is expected that this research project will lead to further epidemiological research in cancer and cardiovascular diseases where pathological findings will be essential for accurate diagnosis. The lack of autopsies indi-

Table 1—*Deaths by Place of Occurrence for Five Cities included in the Inter-American Investigation of Mortality, Preliminary Data of June 1962*

Place of Death	Bogotá		Caracas		Guatemala		La Plata		Lima	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total	287	100	335	100	130	100	384	100	339	100
Hospital[a]	161	56.1	195	58.2	49	37.7	186	48.4	177	52.2
Home	107	37.3	112	33.4	78	60.0	175	45.6	113	33.3
Public place[b]	15	5.2	24	7.2	2	1.5	19	5.0	13	3.9
Not stated and other	4	1.4	4	1.2	1	0.8	4	1.0	36	10.6

(*a*) Including other institution and emergency service.
(*b*) Including cases in transit to hospital, physician's office, etc.

cates the immediate need to train pathologists for services in hospitals and medicolegal services so that complete autopsies can be carried out.

Laboratory examinations, electrocardiograms, X-ray examinations, blood pressure readings, etc., were carried out in varying proportions of the cases in these cities and in general indicated that such diagnostic procedures are being used relatively frequently and are thus useful evidence in the determination of the cause of death.

After the data have been collected for the two-year period, it is planned to calculate for each city age-specific and age-adjusted death rates by causes. This type of analysis is impossible at this time since the numbers of deaths in the investigation are small. However, the distribution of deaths by groups of causes is useful for preliminary information regarding mortality in the age group 15-74 years in these cities. The numbers of deaths for 17 cause groups are given in Table 4, with the percentage distributions.

Two medical referees have independently assigned the causes of death, and their decisions have been combined. When a referee was in doubt, he assigned two causes, with the most likely cause given a weight of two and the less likely a weight of one. Thus, as a result of this weighting, the numbers of deaths appearing in the table contain fractions. It is obvious that the causes of death differ in these five cities. The influence of age should be taken into consideration. The population of La Plata, Argentina, is somewhat older than that in the other cities and thus may have proportionately more deaths from certain causes. The distribution of deaths in the preliminary data for these five cities is given by age group in Table 5. Nearly two thirds of the deaths in La Plata were of persons 55-74 years of age, while in the other cities the proportions were lower.

The two leading groups of causes in all cities were malignant neoplasms and diseases of the heart, but their relative importance varied.

Table 2—*Recorded Medical Care in Five Cities Included in the Inter-American Investigation of Mortality, Preliminary Data of June 1962*

Type of care in last year of life	Bogotá		Caracas		Guatemala		La Plata		Lima	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total	287	100	335	100	130	100	384	100	339	100
Hospital	182	63.4	233	69.6	88	67.7	245	63.8	207	61.1
Physician[a]	77	26.8	51	15.2	30	23.1	127	33.1	79	23.3
Other and none	13	4.6	16	4.8	10	7.7	9	2.3	1	0.3
Not stated	15	5.2	35	10.4	2	1.5	3	0.8	52	15.3

(*a*) Excluding patients also receiving hospital care.

Table 3—*Deaths by Type of Autopsy in Five Cities Included in the Inter-American Investigation of Mortality, Preliminary Data of June 1962*

Type of autopsy	Bogotá		Caracas		Guatemala		La Plata		Lima	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total deaths	287	100	335	100	130	100	384	100	339	100
Deaths with autopsies	103	35.9	98	29.3	13	10.0	17	4.4	67	19.8
Hospital autopsies	39	13.6	48	14.3	9	7.0	10	2.6	17	5.0
Complete	30	10.5	48	14.3	9	7.0	7	1.8	8	2.3
Incomplete	9	3.1	–	–	–	–	3	0.8	2	0.6
Not stated	–	–	–	–	–	–	–	–	7	2.1
Medicolegal autopsies	61	21.2	50	14.9	2	1.5	6	1.6	47	13.9
Complete	5	1.7	47	14.0	2	1.5	–	–	1	0.3
Incomplete	56	19.5	–	–	–	–	5	1.3	46	13.6
Not stated	–	–	3	0.9	–	–	1	0.3	–	–
Type of autopsy not stated	3	1.0	–	–	2	1.5	1	0.3	3	0.9

Table 4—*Assignments of Causes of Death by Medical Referees* for Five Cities, Preliminary Data of June 1962*

Groups of causes International Classification of Diseases	Bogotá		Caracas		Guatemala		La Plata		Lima	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total	287	100	335	100	130	100	384	100	339	100
Tuberculosis, all forms (001-019)	26.8	9.3	13.3	4.0	4.3	3.3	3.5	0.9	48.5	14.3
Other infective and parasitic diseases (020-138)	7.5	2.6	10.2	3.0	5.8	4.5	5.5	1.4	4.0	1.2
Malignant neoplasms (140-205)	41.5	14.5	79.0	23.6	33.8	26.0	119.2	31.1	68.0	20.1
Diabetes mellitus (260)	6.0	2.1	9.8	2.9	4.5	3.5	13.0	3.4	6.5	1.9
Vascular lesions affecting central nervous system (330-334)	18.2	6.3	23.3	7.0	6.8	5.2	40.3	10.5	23.8	7.0
Diseases of heart (410-443)	48.7	17.0	82.3	24.6	14.2	10.9	84.8	22.1	54.0	15.9
Other diseases of circulatory system (400-402, 444-468)	11.3	3.9	5.8	1.7	3.7	2.8	14.5	3.8	15.1	4.5
Influenza and pneumonia (480-493)	13.0	4.5	4.2	1.2	1.3	1.0	1.2	0.3	8.7	2.6
Bronchitis (500-502)	4.8	1.7	0.2	0.1	1.2	0.9	8.2	2.1	2.0	0.6
Cirrhosis of liver (581)	5.5	1.9	4.5	1.3	6.7	5.2	10.5	2.7	7.2	2.1
Other diseases of digestive system (530-580, 582-587)	20.3	7.1	15.0	4.5	7.3	5.6	15.2	4.0	21.2	6.2
Nephritis and nephrosis (590-594)	9.7	3.4	4.3	1.3	1.8	1.4	4.0	1.0	10.8	3.2
Deliveries and complications of pregnancy, etc. (640-689)	6.3	2.2	1.7	0.5	3.0	2.3	4.0	1.0	8.0	2.4
Accidents (E800-962)	28.2	9.8	27.5	8.2	6.3	4.9	13.7	3.6	27.8	8.2
Suicide, homicide, and other violence (E963-999)	17.0	5.9	30.3	9.0	2.0	1.5	10.0	2.6	5.2	1.5
All other specified causes (Residual)	21.7	7.6	21.4	6.4	17.6	13.5	29.1	7.6	24.2	7.1
Symptoms, senility, and ill-defined conditions (780-795)	0.5	0.2	2.2	0.7	9.7	7.5	7.3	1.9	4.0	1.2

* Fractions due to multiple assignments by referees.

Table 5—*Deaths by Age Group in Five Cities Included in the Inter-American Investigation of Mortality, Preliminary Data of June 1962*

Age group in years	Bogotá		Caracas		Guatemala		La Plata		Lima	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
15-74	287*	100	335	100	130	100	384	100	339	100
15-34	60	20.9	77	23.0	23	17.7	26	6.8	81	23.9
35-54	103	35.9	96	28.6	33	25.4	110	28.6	104	30.7
55-74	123	42.9	162	48.4	74	56.9	248	64.6	154	45.4

* Includes one with age not stated.

Although the numbers of deaths from these causes are not large enough for conclusions, there appear to be differences in cancer by site and in the types of heart disease in these cities. Thus they suggest that this research project will reveal the background information needed as the basis for further epidemiological research in the Americas.

Tuberculosis was an important cause of death in Lima (ranking third) but only a minor one in La Plata, Argentina. In Bogotá, it was the fourth leading cause, being exceeded by diseases of the heart, malignant neoplasms, and accidents.

The final assignments by the medical referees of causes of death were compared with those on the original death certificates. These comparisons could be made for four cities. It was clear that the additional data collected in this research project permitted assignments to more specific categories. An important group in which the additional information made a more specific assignment possible for each of the cities was maternal deaths, categories 640-689 (diseases of pregnancy, childbirth and the puerperium). For these four cities only 12 deaths were classified as maternal deaths on death certificates. However, the additional information from hospitals and physicians indicated that 20 should be so assigned. This finding is not unexpected, since facts of a delivery or abortion may not always be known to the physician in attendance at the time of death. Also, the additional data permitted changes in assignments to specific sites of malignant neoplasms and types of heart diseases, as well as changes from one group of diseases to another.

In this project, hospital and physician records and interviews with physicians are providing the additional information desired for stating the cause of the fatal illness and the nature of the injury with supporting evidence. Improvements are to be expected in the quality of data as work in the field progresses and as physicians become more familiar with data necessary for assignments of the causes of death.

Although this is only a preliminary report, the analysis indicates that data will be obtained to fulfill the objectives of the research project. Each one of the collaborators has an opportunity to undertake special studies in phases of the project of interest in his city. The development of this research marks the beginning of a new era in collaborative work in the field of statistics in the Americas. The products and by-products will be many. It is believed that the continued interest and support of the Governments will contribute to the success of this Inter-American Investigation of Mortality and thus the foundation will be laid for further collaborative research on the geographic studies of disease.

The Regional Advisory Committee on Health Statistics, at its recent meeting in June 1962, reviewed the progress of this research program. It discussed the problem of excessive mortality in children in the age period 1-14 years in many areas of the Americas due to common communicable diseases of childhood such as measles, whooping cough and diphtheria, diarrheal diseases, and respiratory diseases. In one of the participating cities a study of child mortality has already been started, utilizing the procedures of the Inter-American Investigation of Mortality. It is believed that careful investigation of the causes of excessive mortality in children in several of the cities with high death rates would be advisable. Since virus diseases may be involved in the excessive mortality, it would be desirable that cities in which such an investigation is carried out

have sufficient laboratory facilities, including a virus laboratory, for confirmation of diagnosis.

The Advisory Committee stated that it "believes that as the Organization makes progress in the Investigation of Mortality, it will be in a position to undertake additional research projects. The Committee supports and encourages the Organization to extend its research program for understanding patterns of mortality in the Region." [1]

The Committee also recommended that "the Organization proceed with the planning of epidemiological cancer research and with the promotion of study of the incidence of this disease." [2] It was suggested that a meeting of a group of specialists having a specific interest in programs in this field be convened early in 1963 in order to plan research in cancer epidemiology.

The Organization is actively initiating geographic research for understanding disease in the Region. This program has been made possible by the spirit of cooperation and collaboration of the health leaders of the Americas, as expressed in the establishment of the Pan American Health Organization, in the Pan American Sanitary Code, and in the decisions of the Pan American Sanitary Conferences.

[1] *Scientific Publication PAHO* **65,** 18.

[2] *Ibid.,* 17.

Appendix

PRINCIPAL COLLABORATORS OF INTER-AMERICAN INVESTIGATION OF MORTALITY

Bogotá, Colombia: Dr. Luis E. Giraldo, Assistant Professor, Department of Epidemiology, School of Public Health, National University, Bogotá.

Cali, Colombia: Dr. Pelayo Correa, Professor of Pathology and Head, Department of Pathology, School of Medicine, University of Valle, Cali.

Dr. Bernardo Aguilera (Co-principal Collaborator), Assistant Chief, Department of Preventive Medicine and Public Health, School of Medicine, University of Valle, Cali.

Caracas, Venezuela: Dr. Carlos Luis González, Technical Adviser, Department of Public Health, Ministry of Health and Welfare, Caracas.

Guatemala City, Guatemala: Dr. J. Romeo de León, Jr., Medical Officer, Epidemiology Branch, Division of Public Health, Institute of Nutrition of Central America and Panama (INCAP), Guatemala City.

La Plata, Argentina: Dr. Carlos Ferrero, Director of Biostatistics, Ministry of Public Health of the Province of Buenos Aires, La Plata, and Professor of Biostatistics, School of Public Health, University of Buenos Aires.

Lima, Peru: Dr. Abelardo Temoche, Public Health Officer, National Health Planning Commission, Ministry of Public Health and Welfare, and Professor of Medical Statistics, Medical School of San Marcos University, Lima.

Mexico City, Mexico: Dr. Miguel Angel Bravo Becherelle, Scientific Investigator, Laboratory of Epidemiology and Biostatistics, Institute of Health and Tropical Diseases, Mexico City.

Santiago, Chile: Dr. Adela Legarreta, Professor, Department of Biostatistics, School of Public Health, University of Chile, Santiago.

São Paulo, Brazil: Dr. Elza Berquó, Professor of Biostatistics, Department of Statistics, School of Hygiene and Public Health, University of São Paulo, São Paulo.

Dr. Giraldo García Duarte (Collaborator for Investigation in Ribeirão Prêto), Associate Professor of Hygiene, School of Medicine of Ribeirão Prêto.

Annex 11

REPORT ON HEALTH ACTIVITIES CARRIED OUT IN CONFORMITY WITH THE CHARTER OF PUNTA DEL ESTE, AND THEIR FUTURE PROSPECTS [1]

The cardinal purpose of the Alliance for Progress, as set forth in the Charter of Punta del Este, is to bring a better life to the peoples of the Americas by accelerating economic social development. To achieve that purpose the American republics have agreed to work toward certain fundamental goals in the present decade. They have recognized that, in order to reach those goals, the rate of economic growth in any country of Latin America must not be less than 2.5 per cent per capita per year and, more important still, that well-being and welfare can no longer be belated consequences of that economic growth. They have further agreed that there is a mutual relationship between economic development, living standards, and well-being and that, because past economic development has not automatically resulted in homogenous social betterment, economic growth must go hand-in-hand with social progress.

Health Activities within the Framework of the Charter

The objective of the Charter in the field of health is as follows:

To increase life expectancy at birth by a minimum of five years, and to increase the ability to learn and produce, by improving individual and public health.

To reach that objective, it will be necessary:

. . . to provide adequate potable water supply and sewage disposal to not less than 70 per cent of the urban and 50 per cent of the rural population; to reduce the present mortality rate of children less than five years of age by at least one half; to control the more serious communicable diseases, according to their importance as a cause of sickness, disability, and death; to eradicate those illnesses, especially malaria, for which effective techniques are known; to improve nutrition; to train medical and health personnel to meet at least minimum requirements; to improve basic health services at national and local levels; and to intensify scientific research and apply its results more fully and effectively to the prevention and cure of illness.[2]

The measures which it is recommended that Governments adopt in this endeavor are set forth in Resolution A.2, Ten-Year Public Health Program of the Alliance for Progress.[3] They include the completion and expansion of projects under way, the formulation of projects for gradual development, and the preparation of national health plans for the present decade. However, it must be emphasized that the formulation of plans should not, by any means, interrupt those activities aimed at the solution of current problems. On the contrary, programs should be continued and expanded not only because they serve an immediate social purpose but also because they will be included in a well-conceived national plan. In the formulation and implementation of programs, and in establishing systems of health planning, the Pan American Sanitary Bureau has been assigned specific responsibilities.

This report on the activities the Bureau has undertaken in fulfillment of its responsibilities under the Charter of Punta del Este follows the same pattern as that set forth in Resolution A.2. It deals in turn with short-range and long-range measures, but only in broad outline, since the Director's Quadrennial Report and Annual Report that will be presented at the XVI Pan American Sanitary Conference will contain both a succinct account of the background and a detailed treatment of current activities.

Continuation and Expansion of Current Activities

The Bureau's current activities aimed at the solution of priority problems in all the major health fields in the Americas have been continued and expanded. Major advances have been achieved in

[1] Document CSP16/7.

[2] *OAS Official Records,* OEA/Ser.H/XII.1 (Eng.), 1961, p. 11.

[3] *Ibid.,* pp. 30-32.

malaria eradication programs, many of which are entering or have already entered the consolidation phase. Programs for the eradication of *Aëdes aegypti* have been strengthened, and activities in the field of yaws, smallpox, tuberculosis, leprosy, and other chronic diseases have been augmented. Advisory services for the strengthening of local and national health services have been improved and increased. Greater emphasis has been given to specific fields such as health statistics, medical care, nursing, mental health, radiation protection, and occupational health. In the field of education and training, special importance has been placed on promoting training of auxiliary personnel and advisory services have been continuously provided to professional and subprofessional schools. Detailed reporting of work in each of these areas will be found in the Annual Report of the Director for 1961 (*Official Document No.* 44). Special mention should also be made of water and basic sanitation projects, the formulation and execution of which have gained impetus since the Inter-American Development Bank and other institutions such as the World Bank, the Export-Import Bank, and the Agency for International Development have undertaken to finance water supply and sewage disposal projects.

As a result of the funds allocated for water in the loan program of the Inter-American Development Bank, a substantial number of requests for loans for the construction and improvement of water supply systems have already been presented to the Bank by the Governments. In many of these, the PASB has given help through regular staff and short-term consultants to both the Bank and the Governments in the field of preinvestment studies, preparation of loan requests, and review of the requests. It is anticipated that the volume of this type of service will increase. With the construction now in prospect or in progress, it is evident that there will be a growing demand for consultant services to assure adequate postinvestment management, maintenance, and continued growth of the water systems in response to the needs. To prepare for these activities, the Organization has already added an Engineering Consultant specializing in management, and plans are being developed which will assure the provision of adequate consultant services as well as necessary training programs for the Governments.

In the field of research, a further step has been taken with the establishment of an Office of Research Coordination. This office is already reviewing health research programs and needs throughout the Americas, with particular attention to manpower, material, and other research resources and requirements. This study is being done with the aid of specialized groups to deal with particular diseases or subject matter areas, and will be reviewed by the PAHO Advisory Committee on Medical Research, composed of some of the outstanding research scientists and administrators of the Hemisphere. From this will develop a program for PAHO which will permit the Organization to provide the greatest support to Governments in the field of health research. At the same time it is anticipated that this study will indicate further fields in which the staff of the Organization should engage in research, in collaboration with scientists of the Governments, in projects of an international nature which must be carried out in order to contribute to this solution of health problems.

Projects for Gradual Development

Among the task forces for programming that were envisaged in Resolution A.4[1] of the Charter—for the purpose of undertaking investigations and studies and, drawing on the experience of the Governments, to prepare reports and adopt conclusions of a general nature that might serve as a basis in preparing national development plans—the Bureau was assigned the specific responsibility of organizing the task force on health. The terms of reference of that task force were to analyze the above-mentioned general health objective of the Charter; to consider the most effective measures for reaching its component goals; and to formulate concrete recommendations for the Governments and for international health organizations.

Because the Charter's general health objective comprises several goals, it was deemed advisable to convene a number of advisory groups. In the past three months, these advisory groups, consisting of highly experienced persons from the countries of the Hemisphere as well as from international health organizations, both public and private, have met and dealt in turn with environmental sanitation, medical care, medical education, nutrition, and health planning. Their reports are at present being reviewed and will be submitted to the Governments in due

[1] *Ibid.*, pp. 34-35.

course. It goes without saying that these advisory groups have sought to deal with the problems solely from a Regional standpoint; it will be for the Governments themselves to translate their conclusions and recommendations into national terms.

In addition, the Bureau's staff, working on information supplied by the Governments and by the field personnel, have been engaged in similar studies of other problems that received high priority in the Charter, such as maternal and child health, malaria, smallpox, and tuberculosis, as well as leprosy, treponematoses, schistosomiasis, and plague.

These reports will, it is hoped, serve as guidelines for the planning and execution of programs by the Governments and the international agencies collaborating with them.

Health Planning

Among the major long-term measures which it was recommended that Governments adopt were the preparation of national health plans for the present decade and the creation of planning and evaluation units in the ministries of health, with appropriate representation in the national agencies responsible for the over-all planning of economic development and social progress, in order to ensure due coordination. Planning—the considered assignment of priorities for the allocation of resources—is not an end in itself; it is only a method, a mechanism for channelling investments toward the attainment of specific goals. But the process of planning is a dynamic one, for the attainment of one goal is but the starting point for the attainment of another. It is thus necessary to continuously review the progress achieved; planning and evaluation are therefore complementary—two faces, as it were, of the same coin.

The Bureau has already provided consultant services to the Governments of Haiti and the Dominican Republic to cooperate in the development of national health plans. Further steps are being taken to provide consultant services to Ecuador. Members of the Bureau have begun to work with the panel of planning experts established in accordance with the Charter of Punta del Este to consider the health aspects of the national development plans already presented by several of the Governments.

The Bureau has also made a start on arrangements for the training of the officials who will staff health planning and evaluation units. Negotiations have been completed with the Latin American Institute for Economic and Social Planning, established under the aegis of the United Nations Economic Commission for Latin America and the Inter-American Development Bank, in Santiago, Chile, and the first intensive, three-month training course will be held in October 1962. The Bureau will provide 20 fellowships a year for the next five years to enable senior officials of ministries of health and members of the faculties of public health schools to attend those courses. Negotiations are now under way with the School of Hygiene and Public Health of Johns Hopkins University and with the Agency for International Development to work out a joint short-term training course in planning for health personnel to complement that of ECLA. It is hoped that the first class of 20 can be instituted early in 1963 and that additional three-month courses can be given each year.

In addition, in association with the Center of Development Studies (Centro de Estudios del Desarrollo, CENDES) at the Central University of Venezuela in Caracas, a manual dealing with the principles and methods of planning is being prepared. After further review and practical experience, it is hoped that the manual will serve as a guide in the formulation of health plans within the framework of national development plans.

Planning Services

The planning services of the Bureau are likewise being strengthened so that it may provide Governments with the advisory services they need in the field of health planning and may fulfill its role as the specialized agency for health planning in the Hemisphere. Moreover, consideration is being given to, and arrangements are being contemplated for, closer Bureau cooperation with the economic missions to the countries in order to ensure that the health aspects of national development plans are taken fully into account.

Conclusion

These, then, are the main lines along which the Bureau has been working in fulfillment of its specific responsibilities under the Charter of Punta del Este. They are predicated on the conviction that health must take its rightful place among the components of economic development and social progress. In order for this to happen, ministries of health

must be sure that there is an understanding by decision-making bodies of the interdependence between health, economic development, and social well-being. It must be recognized that "improvements in (health conditions) are desirable in themselves, that they are an essential prerequisite for economic growth, and that therefore they must be an integral element in any meaningful development program for the Region"—as stated in Resolution A.2 of the Charter.

In health planning, the main tasks of Governments will be the establishment of priorities for the investment of resources, both those available domestically and those available in the international capital market; and it will be for the Governments to press, as they have done so successfully in the case of water, for the inclusion of further health projects in requests for loans from international credit institutions.

The Bureau's endeavors in the spirit of the Charter are thus already bearing fruit and are bringing home the realization that funds devoted to health are a form, not of consumption, but of investment—an investment that must be made if the objectives of the Charter are to be attained.

Finally, in the spirit of the Charter of Punta del Este, PAHO is moving forward in close collaboration with the other organs of the inter-American system and the UN system, with the Governments, with the Agency for International Development, and with other public and private agencies, foundations, and professional groups. The objective of this effort is to assist in bringing about the greatest returns to the Governments in terms of improved health for the citizens of the Americas, through—to quote the Charter—"the use of other means of technical assistance, whether multilateral or bilateral, available to the countries of this Hemisphere."

Annex 12

NATIONAL HEALTH PLANS [1]

At its XIII Meeting the Directing Council recommended, in Resolution III,[2] that the Pan American Sanitary Bureau give emphasis to its work of coordination at the international level and continue to provide the Governments with technical advisory services, in particular for the formulation of national health plans. The Director now has the honor to report on the activities the Bureau has undertaken in compliance with that resolution.

It should be pointed out that the years 1961 and 1962 have been a period of intense activity in the matter of national health planning in Latin America, as a result of the decisions embodied in the Act of Bogotá and the Charter of Punta del Este. These two instruments laid the foundations for economic and social development in the Hemisphere in the next 10 years, and spelled out the large-scale measures that would have to be applied if balanced economic and social development were to be attained. They also laid emphasis on the role of health in economic and social development, and set certain goals that would be the basis for health planning in the next 10 years. In addition, the Charter of Punta del Este recommended that, when they considered it advisable, Governments should utilize the technical advisory services of the Pan American Sanitary Bureau for the formulation and execution of their national health plans.

The necessary steps to enable the Bureau to fulfill these commitments were taken immediately. First, an advisory group on planning was convened, comprising experts in various fields of public health, economics, and planning drawn from the entire Hemisphere. This advisory group reviewed the scope of the Charter of Punta del Este and made recommendations on the following aspects of health planning: elaboration of the methodological bases of health planning as part of comprehensive economic and social development; organization of health planning units in the ministries of health or in health services; training of planning personnel; international cooperation in the matter of

[1] Document CSP16/24.

[2] *Official Document PAHO* **41**, 17.

health planning, and various other technical aspects of planning.

Next, a Planning Office was established at Headquarters for the purpose of coordinating planning activities and carrying out the above-mentioned commitments. One of the first tasks of this office was the preparation of a guide to planning, a first draft of which is already being used in assisting some Governments to formulate national health plans. At the same time, an agreement was concluded with the Central University of Venezuela, whereby its Center of Development Studies, in cooperation with the School of Public Health of Venezuela, will prepare a manual on the methodology of health planning.

Arrangements have been made to provide the advisory services that some of the countries have already requested. It should be recognized, however, that the main obstacle to widespread development of the concept of national planning in health lies in the great shortage of trained and experienced planners. The Bureau has therefore been concentrating its greatest efforts on preparation for training health planners in order to ensure that, within the next few years, the countries will have qualified experts available for the task.

It is now hoped to hold, within the next six months, three different courses as the first of a series which will begin to fill the need for training health planners for the Americas. The first of these will be held in Venezuela and is intended for 15 officials of the Ministry of Health and Welfare of that country. It will be conducted, in cooperation with the Bureau, by the Center of Development Studies of the Central University in Caracas. During the course, a health plan for one of the states of the country will be prepared.

The second course, in which the Organization will cooperate with the Latin American Institute for Economic and Social Planning—which was established under the auspices of the Economic Commission for Latin America (ECLA)—will make it possible to train as a fellowship grantee of PAHO one official from each of the countries of Latin America. It is expected that this course will be repeated annually for five years.

The School of Hygiene and Public Health of Johns Hopkins University is now considering the establishment of a parallel type of short course in English. It is anticipated that the Organization will assist in the development of the curriculum, in the staffing, and with the provision of some fellowships.

Direct advisory services to Governments in the organization of short orientation courses for the officials of their health services are also planned. It is further hoped to hold seminars to review the methods and experiences obtained in the implementation of the first few national health plans.

A number of Governments have already begun health planning as called for by the Charter of Punta del Este. Staff members of PAHO, as well as short-term consultants, have provided advisory services in planning to several Governments.

It is anticipated that the alumni of the training courses described above will be integrated immediately into the services of the Governments in such a way as to contribute rapidly to the improvement of the health planning component of national development programming.

The courses to be given, and the very program of PAHO, will evolve in accordance with experience and an appreciation of needs. For planning is a dynamic process, and shifts in program emphasis and direction will be made as indicated by experience at the national and the international levels.

Even at this stage it is evident that sounder statistical bases for planning are urgently needed. As soon as it becomes possible to establish quantitative criteria for defining problems and accurate statistics of programs and services, it is anticipated that these essential components of effective planning and evaluation will make it possible to draw up sound plans for the health aspects of the economic and social development.

It is confidently expected that once health plans are developed, along with the appropriate organizational structure for evaluating and modifying as necessary, several highly important corollary results will become evident. The Governments will be able to define more precisely the areas in which international assistance can be utilized most effectively. With clear-cut definitions of problems and resources available from various sources, it will be possible for the Governments to coordinate the action of the various international bodies providing technical and financial support for social and economic development. And finally, the availability of well-based and well-conceived national health plans will permit improved long-range program planning and budgeting by the international organizations themselves.

Annex 13

REPORT ON BUILDINGS AND INSTALLATIONS FOR HEADQUARTERS [1]

Report of the Director

The Director has the honor to report to the XVI Pan American Sanitary Conference on the progress that has been made, since the XIII Meeting of the Directing Council, on the program for the construction of the permanent headquarters building.

The developments during the period October 1961-April 1962 are reflected in the report to the 46th Meeting of the Executive Committee (April 1962) and in the several reports of the meetings of the Permanent Subcommittee on Buildings and Installations attached hereto.[2] Space requirements were revised, preliminary drawings showing office layouts were prepared by the architects, and approval was obtained with respect to height of and access to the building, after a number of meetings with the National Capital Planning Commission and other regulatory bodies.

At its 46th Meeting, the Executive Committee resolved in Resolution V, paragraphs 2 and 3, to approve the steps taken by the Director and the Permanent Subcommittee with respect to the new headquarters building, and to transmit their reports to the XVI Pan American Sanitary Conference.

In the period since the 46th Meeting of the Executive Committee, the Director and the Permanent Subcommittee have been concerned, in the main, with the problem of the financing of construction. On the basis of the preliminary drawings, the architects submitted an estimate of $6,510,000 (see column 2 of table), or more than $1,700,000 above the amount indicated as adequate by the group of architects who selected the winning design. This estimate was so much greater than that of the expert architectural consultants, which was within the available resources of $4,800,000, including the generous pledge of $3,750,000 from the W. K. Kellogg Foundation, that the Director informed the Permanent Subcommittee that prudent management dictated the securing of professional counsel from a construction estimator.

The services of H. A. Sloane Associates of New York City were obtained, and they undertook an analysis of the cost of the construction of the proposed headquarters building. The Sloane firm, after a preliminary review, made an intensive analysis and reported an estimate of $6,634,000 (column 4). This report was brought to the attention of the Permanent Subcommittee and it was agreed that an effort should be made to reduce costs without disturbing unduly the design or the space availability of the structure. These changes included the replacement of the bronze exterior of the meeting structure by architectural concrete, the elimination of two escalators, a reduction of space in the second basement, and a number of other items defined in the report of the Permanent Subcommittee on Buildings and Installations.

After these architectural changes were introduced, a new estimate of $5,876,000 (column 6) was obtained. This was considered to be the minimum possible cost, if the winning design was to be retained and office and meeting space not reduced below basic requirements. The Permanent Subcommittee agreed and requested that the Director explore methods of financing the additional cost, suggesting that the W. K. Kellogg Foundation be approached as to the possibility of increasing the original grant by an additional $1,250,000 required to meet the cost of the building. The Director saw the President of the Foundation on 14 August; the latter promised to study the request.

With definitive financing of the building still unresolved, the Permanent Subcommittee has thought it appropriate that preparation of the detailed construction plans not be initiated. It is recognized that delays in the preparation of the definitive plans will force a delay in construction and also may well result in an additional financial burden as construction costs continue to rise at a rate of almost 5 per cent per annum.

[1] Document CSP16/21.

[2] See Addendum, pp. 136-142.

Comparative Estimates of the Cost of the New Building
(In U.S. Dollars)

Item	(1) Available	(2) Architect estimate	(3) First estimate Sloane Associates	(4) Revised estimate Sloane Associates	(5) Estimate after suggested architectural changes	(6) Estimate after revision of architectural changes
Construction		—	5,685,000	5,304,000	4,490,000	4,654,000
Contingency (10% of construction estimate)		—	568,000	530,000	449,000	465,000
Subtotal		5,717,000 [1]	6,253,000 [2]	5,834,000 [3]	4,939,000 [4]	5,119,000 [9]
Architect fees		342,000	370,000	350,000	296,000	307,000
Subtotal		6,060,000 [5]	6,623,000 [6]	6,184,000 [7]	5,235,000 [8]	5,426,000 [10]
Special Equipment [11]		450,000	450,000	450,000	450,000	450,000
Total	4,800,000 [12]	6,510,000	7,073,000	6,634,000	5,685,000	5,876,000

[1] Cost per sq. ft. $26.92
[2] Cost per sq. ft. 29.07
[3] Cost per sq. ft. 27.52
[4] Cost per sq. ft. 25.07
[5] Cost per sq. ft. with architect fees 28.63
[6] Cost per sq. ft. with architect fees 31.24
[7] Cost per sq. ft. with architect fees 29.17
[8] Cost per sq. ft. with architect fees 26.57
[9] Cost per sq. ft. 25.98
[10] Cost per sq. ft. with architect fees 27.54
[11] Special equipment cover: electronic equipment, seats, tables, booths, and all other furnishings for the Conference areas and for other elements of the new building.
[12] Rounded off from $4,773,000.

At the request of the Permanent Subcommittee on Buildings and Installations, the Director also has the honor of transmitting to the XVI Pan American Sanitary Conference the following report.

Report of the Permanent Subcommittee on Buildings and Installations

Pursuant to Resolution II of the 42nd Meeting of the Executive Committee,[1] which authorized the Permanent Subcommittee on Buildings and Installations to act on behalf of the Pan American Health Organization in matters regarding the construction of the headquarters building, the Permanent Subcommittee has the honor to submit herewith a progress report on the building program, as well as reports of its meetings held 3 May, 5 July, 25 July, 16 August, and 20 August 1962.[2]

On 28 March 1960, the President of the United States of America signed a bill authorizing the transfer to the Pan American Health Organization of a tract of land in the city of Washington bounded by 23rd Street, Virginia Avenue, 22nd Street, and E Street, for use as the site for the permanent headquarters of the Organization. Following this action, the Directing Council of PAHO requested that the Director of the Bureau take the necessary steps to obtain a building design and to find financing for the building.

An international competition was held in 1961 and resulted in the award of a $10,000 first prize to Architect Román Fresnedo Siri of Uruguay. Estimates of the cost of the building, rendered by the expert architectural advisers, were at $21 a sq. ft., making a total estimate for the building of between $4,500,000 and $5,000,000.

Financing for the building took into account the sale value of the two buildings owned by PAHO at 1501 and 1515 New Hampshire Avenue, N.W., estimated at $750,000, and a building reserve fund of $273,000. The additional $3,750,000 required for the building was graciously granted by the W. K. Kellogg Foundation, which offered the sum for ex-

[1] *Official Document PAHO* **36**, 224-225.
[2] See Addendum, pp. 136-142.

panded program activities, thereby enabling PAHO to finance construction.[1]

Architect Fresnedo and his associate, Mr. Louis Justement, completed preliminary drawings and provided a cost estimate (column 2 of the table) of $6,510,000, that is, $1,710,000 above the available resources.

It was recognized that the architect's estimate was a rough calculation, and in order to obtain more definitive costing the Permanent Subcommittee authorized the Director to obtain the services of a recognized authority in estimating construction. H. A. Sloane Associates, construction consultants of New York City, were retained for this activity. The preliminary estimate of this firm (column 3 of the table) amounted to $7,073,000, or $563,000 more than the estimate of the architect, and $2,273,000 above the available funds. The Sloane Company was then asked to refine this estimate, and undertook a close comparative costing of all services, supplies, materials, and equipment. Following a number of discussions with the architects, engineers, and others, Sloane Company submitted its revised estimate reflecting a cost of $6,634,000, or $124,000 above the estimate of the architect, and $1,834,000 above the funds available (column 4 of the table).

Studies were then initiated by the Director with the objective of reducing the shortfall without impairing the basic design and structure of the proposed building. With the aid of the Messrs. Fresnedo and Justement, eight changes were reviewed. These were as follows, and the estimated saving for each is noted:

1. Use of precast architectural concrete facing instead of pink marble facing. This would result in a saving of $58,179.

2. Use of aluminum column facing instead of black granite. This would result in a saving of $14,297.

3. Use of precast architectural concrete grille instead of bronze. The saving would amount to $181,200, and in line with the suggestion made by the Fine Arts Commission it was agreed that precast concrete should be used instead of bronze.

4. Use of precast architectural concrete instead of granite for walls on the first floor, at a saving of $29,663.

5. Use of flagstone paving instead of exposed aggregate. By using Philadelphia flagging a saving of $13,224 could be realized.

6. Omission of two escalators in the conference building, at a saving of $88,000.

7. Use of plaster partitions instead of removable metal partitions, with a possible total saving of $185,268.

8. Elimination of sub-basement area, at a total saving of $244,457.

The total saving in these alternates is $814,288, bringing the estimated cost of construction, in round figures, to $4,490,000, as indicated in column 5 of the table. With contingency, architect's fees, and cost of special equipment, the total estimated cost is $5,685,000.

It became apparent after further study that certain of the changes could not be adopted *in toto*. The elimination of the sub-basement would cut available parking space below the minimum level prescribed by the National Capital Planning Commission. Accordingly, it is necessary to reinstall approximately one third of the sub-basement, thereby effecting a saving of $164,000, rather than $244,000, in item 8.

Similarly, it would be inappropriate to eliminate all removable partitions, particularly for the technical units which are in a state of development and will doubtless witness organizational changes requiring different space assignments. Accordingly, it is felt advisable that three floors of the Secretariat building be reserved for removable partitions. The saving, therefore, for item 7 will be $115,268, rather than the $185,268 indicated above.

Finally, after due consideration it is felt advisable to continue the granite facing on the columns in item 2, rather than substitute aluminum. This action will not permit the saving of $14,297 noted above.

In summary, the estimate after revision of the architectural changes is $5,876,000 (column 6 of the table). On this basis, the shortfall is $1,076,000. It is felt that provision should be made for contingency in equipment, architect's fees, and matters other than construction, and that $1,250,000 of additional financing should be sought.

At the meeting of the Permanent Subcommittee on 5 July 1962, it was agreed that an approach should be made initially to the W. K. Kellogg Foundation for an increase of the grant by the sum of

[1] The total has been rounded off to $4.8 million, the sum referred to as available.

$1,250,000. Should the funds not be available from the Kellogg Foundation, it was suggested that other foundations be approached. Discussions were also held of other means of financing, including a bank loan from the Inter-American Development Bank, from private banks, and by direct subscription by Governments of the Organization. The Subcommittee took the view that all other means of financing should be explored before the Governments were requested to contribute toward the construction cost, and that if and when a request were made to the Governments, the assessment for this purpose would not contribute to an increase in the assessment budget as a whole. The Director indicated that this could be done through a rearrangement of the budgeted programs.

The Subcommittee requested the Director to seek nongovernmental funds in the amount necessary to cover the anticipated deficit and to report to the Subcommittee the results of his consultations. The Subcommittee was informed at its meeting on 16 August that these consultations were under way.

Addendum

PERMANENT SUBCOMMITTEE ON BUILDINGS AND INSTALLATIONS

Report of the Meeting Held 12 December 1961 [1]

The Permanent Subcommittee on Buildings and Installations met at 10:30 a.m., Tuesday, 12 December 1961.

Present:

Mr. Adolfo Enrique González Alemán (Argentina)
Mr. Francisco José Oyarzun (Chile)
Mr. James R. Wachob (United States of America), Chairman

The Subcommittee was assisted by:

Dr. Abraham Horwitz, Director, PASB
Mr. Román Fresnedo Siri, Architect
Mr. Earl D. Brooks, Chief, Management and Personnel Branch, PASB
Mr. Eugene J. Settino, Chief, General Services Section, PASB
Mr. Sheridan E. Besosa, Management Section, PASB

The meeting was called for the purpose of (1) introducing Architect Román Fresnedo Siri to the members of the Subcommittee, and (2) reviewing the current situation regarding the new permanent headquarters building.

The meeting was called to order by the Chairman, Mr. Wachob, who stated the purpose of the meeting and asked the Director of the Pan American Sanitary Bureau to introduce the architect.

Dr. Horwitz, in his opening remarks, briefly described the Jury meetings that were held to select an architectural design for the headquarters building and the great tribute paid to Architect Román Fresnedo Siri by the members of the Jury for his architectural ability and ingenuity in designing a building which was unanimously awarded first prize. He then introduced Mr. Fresnedo Siri to the Subcommittee members.

At the request of the Chairman, Mr. Fresnedo Siri addressed the session and commented briefly on some of the reasons for his choice of design, especially that of the conference chamber. He described in some detail other features of the building he had envisioned, such as the open plaza-type ground floor, decorative pools, exhibition hall, escalators, parking areas, etc. He mentioned also that the building as designed made maximum use of the site and that any expansion of the building would have to be vertical.

On this point, Mr. Brooks spoke of the meeting held with the National Capital Planning Commission on 7 December, at which time details of the building were explained and preliminary discussions held on the matter of height, access to the building, etc. Another meeting has been scheduled for 21 December to discuss these points in detail with the technical staff of the Commission and to obtain the necessary approvals from that group as well as from the District of Columbia Zoning Board. A meeting is also scheduled with the Fine Arts Commission on 20 December.

Dr. Horwitz reminded the members that, at the time the international competition to design a headquarters building was initiated, space requirements for Washington staff were estimated on the basis of approximately 350 persons; but in rapid succession thereafter, the Act of Bogotá and the Alliance for Progress programs, as they may affect the work of the Bureau, now point to the necessity of housing some 500. It is therefore important that approval be granted by the local authorities to permit a height of 120 ft. This will make possible the

[1] Document CE46/13, Annex I.

addition of another floor and, with certain other adjustments, will provide enough space.

Mr. Brooks then informed the Subcommittee that the Bureau had engaged the services of the law firm of Wilkes and Artis to assist in the various zoning problems, and that the Subcommittee would be kept fully informed of the progress made.

Mr. Wachob then reported on the current status of the site. On 20 October the United States Government deposited into the registry of the District Court $1,092,-150 for the purchase of the land and at the same time received title to the land. At the request of the Bureau, the United States Government will retain the title until such time as it is needed by the Bureau to begin the construction phase of the new building. The Government, through its General Services Administration, will manage the property in compliance with all District of Columbia regulations, thereby relieving the Bureau of the many problems in that connection. In order to maintain the best public relations, eviction notices will not be issued until such time as the building program makes it necessary to do so.

Dr. Horwitz again voiced his appreciation to the members of the Subcommittee for their efforts to date in helping to make the permanent headquarters building a reality; requested their continued interest and assistance for the many decisions that still must be made; and paid special tribute to the United States Government for its many efforts and actions to alleviate any problems for the Organization.

The meeting was then adjourned.

Report of the Meeting Held 17 April 1962 [1]

The Permanent Subcommittee on Buildings and Installations met at 2:30 p.m., Tuesday, 17 April 1962.

Present:

Mr. James R. Wachob (United States of America), Chairman
Mr. Olegario Russi, Alternate (Chile)

The Subcommittee was assisted by:

Dr. Stuart Portner, Chief of Administration, PASB
Mr. James Callmer, Architect
Mr. Román Fresnedo Siri, Architect
Mr. Earl D. Brooks, Chief, Management and Personnel Branch, PASB
Mr. Eugene J. Settino, Chief, General Services Section, PASB

The meeting was called for the purpose of reviewing the current situation regarding the permanent headquarters building of PAHO.

The meeting was called to order by the Chairman, Mr. Wachob, who asked Dr. Portner to review the latest developments in the planning for the building.

In considerable detail, Dr. Portner informed the members of the events which had transpired since the last Subcommittee meeting early in December 1961. He indicated that the main objective of the PASB Secretariat during this period had been to obtain clearances from the local authorities with respect to height of and access to the building.

Appearances before the National Capital Planning Commission had resulted in securing the necessary approvals for construction and design.

At the request of Dr. Portner, Architect Fresnedo Siri described briefly, through drawings and sketches, the few changes made with regard to the approaches to the building from the surrounding thoroughfares. He explained that the height of the building, as approved, would be 110 ft., with an additional penthouse of 11.5 ft. to house air-conditioning equipment and elevator machinery.

The Chairman then commented favorably on the presentations made by Dr. Portner and the architect to the several governmental agencies responsible for the review of the Organization's building plans. He expressed the belief that the cooperative attitude which the responsible PASB staff members had displayed in their meetings with representatives of these agencies had expedited the approval which this plan had received from those agencies.

Dr. Portner then described the work accomplished during this period, which consisted, principally, of revision of space requirements, preparation of new drawings showing office layouts, etc. He informed the members that arrangements had been made for topographical and outline surveys of the building site, as well as for test borings, which of necessity had to be deferred pending the clearances as to height and access.

The Chairman then recognized Mr. Callmer, representative of the architectural firm with which Mr. Fresnedo Siri is associated. Mr. Callmer presented an estimate of the cost of the building, which he indicated was $6,060,000. He added that it would cost another $400,000 for a third basement if additional parking space were required. He emphasized that these were provisional estimates which would be refined at a later date.

The question of the availability of funds was then discussed. Dr. Portner indicated that the total currently estimated as available amounted to $4,800,000. It was agreed, after further discussion, that a refinement of space estimates, including expansion potential, would be made in consultation with the architects and that this additional information would be presented to the Subcommittee at a meeting scheduled on 3 May 1962. It was also agreed that at the 3 May meeting the Organization would present its plan for additional financing

[1] Document CE46/13, Annex II.

if the estimated financial requirements for a suitable headquarters building were greater than the currently available funds.

The meeting was then adjourned.

Report of the Meeting Held 3 May 1962 [1]

The Permanent Subcommittee on Buildings and Installations met at 11:00 a.m., Thursday, 3 May 1962.

Present:

Mr. James R. Wachob (United States of America), Chairman
Mrs. Lilian O'Connell de Alurralde (Argentina)

The Subcommittee was assisted by:

Dr. Abraham Horwitz, Director, PASB
Dr. Stuart Portner, Chief of Administration, PASB
Mr. Román Fresnedo Siri, Architect
Mr. Earl D. Brooks, Chief, Management and Personnel Branch, PASB
Mr. Eugene J. Settino, Chief, General Services Section, PASB

The meeting was called to order by the Chairman, Mr. Wachob, who first expressed his regrets that the full membership of the Subcommittee was not present at the meeting. He expressed the opinion that, in view of the increasing importance of the items on which the Subcommittee must make decisions, future meetings should not be held unless all three members were present.

After referring briefly to his appearance at the 46th Executive Committee Meeting in connection with the presentation of the report on buildings and installations for PAHO Headquarters, the Chairman asked Dr. Portner to report on the latest developments in connection with this subject.

Dr. Portner reviewed in considerable detail the work of the Secretariat since the Subcommittee's meeting of 17 April. In its consultations with the architectural firm, the Secretariat learned that the firm's preliminary estimate of $6,060,000 covered in general only the basic construction costs and that certain additional costs would have to be incurred before work on the site could be considered completed. The costs of demolition on the site, landscaping, paving, and of interpreting equipment and special furniture for the meeting rooms were among those not included in the above figure. An approximate calculation of the additional costs would raise the total estimate to $6,500,000 or $6,600,000. This did not include additional furniture needed for the staff offices.

Dr. Portner explained that the basic cost of $6,060,000 was computed on an average cost of $25.00 per sq. ft., as compared with an estimate of $21.00 per sq. ft. furnished by the architect who served as Professional Adviser to the Secretariat in the international competition for the design of the headquarters building. This difference of $4.00 per sq. ft. would account for a difference of about $1,000,000 in the over-all cost of the building.

Representatives of the Secretariat had made an extensive review of buildings recently erected in the Washington area and had consulted the U.S. General Services Administration for cost data on these buildings. Information received indicated a cost range of from $16.00 per sq. ft. for commercial-type buildings, $18.00 per sq. ft. for certain government installations, and up to $27.00 per sq. ft. for the more elegant type of building.

In view of the wide variance in cost factors, where a difference of only a few dollars per sq. ft. represented a sizeable amount of money in terms of over-all construction costs, it was imperative that the Secretariat obtain the most specific information possible on the range of cost of each of the main elements in building construction. Dr. Portner stated that prudent financial management dictated the necessity of securing professional advice in this regard by the employment of a cost estimator.

Although this estimate would be subject to modifications as the building program moved forward and more detailed building plans were prepared, it would be more definitive than an average square-footage dollar cost and would prove especially useful at this critical stage, when a decision needed to be taken with respect to seeking additional financial resources or adjusting the physical make-up of the building.

At the request of the Chairman, Dr. Horwitz gave his views on the situation. He reiterated the many problems of the building program and emphasized his great concern with regard to the financial aspects. In his opinion, it was absolutely necessary at this time to be assured of a more accurate cost estimate, so that appropriate action could be taken to move the project along.

Considerable discussion then followed on the matter. Mention was made of various methods of reducing costs with respect to materials used, as well as possibilities of decreasing the over-all square footage. In response to a question by the Representative of Argentina, the Chairman stated that any external modification of the building plans would have to be considered in the light of the regulations of the local authorities, which had already agreed to the present external design.

Dr. Portner indicated that several professional estimators were under consideration and, if authorized by the Subcommittee, the selection and employment of one would be undertaken immediately, so that the required information could be obtained as soon as possible.

The members of the Subcommittee agreed that there was a need to obtain the cost estimates from a profes-

[1] Document CSP16/21, Annex II.

sional source, and authorized the Director to secure immediately the services of a competent consultant.

On the recommendation of the Chairman, it was agreed that a meeting would be convened as soon as the cost data were obtained. Further, a summary report of such data would be made available to each member for review prior to the meeting.

The meeting was then adjourned.

Report of the Meeting Held 5 July 1962 [1]

The Permanent Subcommittee on Buildings and Installations met at 10:30 a.m., Thursday, 5 July 1962.

Present:

Mr. James R. Wachob (United States of America), Chairman
Mrs. Lilian O'Connell de Alurralde (Argentina)
Mr. Olegario Russi (Chile)

The Subcommittee was assisted by:

Dr. Abraham Horwitz, Director, PASB
Dr. Stuart Portner, Chief of Administration, PASB
Mr. Román Fresnedo Siri, Architect
Mr. Louis Justement, Architect
Mr. Clarence Moore, Chief, Budget and Finance Branch, PASB
Mr. Earl D. Brooks, Chief, Management and Personnel Branch, PASB

The meeting was called to order by the Chairman, Mr. Wachob, who explained that the main purpose was to discuss the cost estimates prepared by the professional estimators who were authorized by the Subcommittee at its last meeting. The Chairman requested Dr. Portner to present the subject.

Dr. Portner presented a table [2] showing comparative estimated costs of the new building, and explained that the Organization had available a total of $4,800,000 and that the first estimate made by the architects came to a total of $6,510,000 (column 2 of the table). The Subcommittee had authorized the Director at its last meeting to contract for the services of a professional estimator, and after consultation with the architects and with experts of the United States Government, H. A. Sloane Associates of New York City were employed. On the basis of preliminary drawings and information furnished by the architects, the Sloane Company's first estimate came to $7,073,000. The firm was then requested to make as accurate an estimate as possible based upon present building costs with a 10 per cent contingency, and this estimate came to $6,634,000. It was realized at this point that in order to come near to the amount of available funds some changes in construction would have to be made, without, however, doing violence to the architect's design and bearing in mind that this was to be a monumental building.

The changes were based upon the following alternatives:

1. Use of precast architectural concrete facing instead of pink marble facing. This would result in a saving of $58,179.

2. Use of aluminum column facing instead of black granite. This would have resulted in a saving of $14,297, but it was decided that the aluminum column facing would not be in keeping with the structure of the building. Accordingly, the change was not recommended.

3. Use of architectural concrete grille instead of bronze. The saving would amount to $181,200 and was line with the suggestion made by the Fine Arts Commission.

4. Use of architectural concrete instead of granite, on the walls of the first floor. Assurance was given by both the architect and the Sloane Company that architectural concrete could closely simulate granite in texture and color. A saving of $29,663 could be realized.

5. Use of flagstone paving instead of exposed aggregate. By using Philadelphia flagging, a saving of $13,224 could be realized.

6. Omission of two escalators in the conference building, which would result in a saving of $88,000.

7. Use of plaster partitions instead of removable metal partitions. Although it was realized that removable metal partitions give a maximum of flexibility in a changing organization, the cost of $261,786 for these partitions seemed prohibitive. It was felt, however, that some portion of the Secretariat building required removable partitions to meet the changing needs of the Organization. It was therefore agreed that plaster partitions should be used in about three floors, resulting in a net saving of $115,268.

8. Elimination of sub-basement area. In the original plans provision was made for two basements. The elimination of the sub-basement would cut available parking space below the minimum level prescribed by the National Capital Planning Commission. Accordingly, it is necessary to retain approximately one third of the sub-basement, thereby effecting a saving of $164,000, rather than $244,000.

Had all the changes been possible, the estimate of the gross cost of the building would have been $5,685,000. With the reintroduction of item 2 and of portions of items 7 and 8, the new estimated cost of the building was $5,876,000, which it was believed was as low as could be reached without changing the design concept. It was pointed out that the shortfall therefore would be $1,076,000.

The Chairman then asked Dr. Horwitz if he had any

[1] Document CSP16/21, Annex III.

[2] See p. 134.

comments to make regarding the methods of making up the difference of this shortfall. The Director suggested three methods which could be used:

1. A direct subscription by Governments of the Organization.
2. A bank loan, with repayment to be made through an item in the regular annual budgets.
3. An increase of the original grant from the W. K. Kellogg Foundation.

Dr. Horwitz pointed out further that experience had shown that in building programs a 10 per cent contingency, as calculated in the construction cost estimate, rarely met the needs, and he recommended that an attempt be made to raise a total of $1,250,000 from any one of the above sources.

A discussion was then held by the members of the Subcommittee and it was the intent of the meeting that:

1. An approach should be made first to the W. K. Kellogg Foundation for the amount of $1,250,000.
2. If the Kellogg Foundation were unable to increase the amount of the grant, an aproach should be made to one or more other foundations.

The Director requested the opinion of the Subcommittee on the matter of instructions to the architects to undertake detailed drawings for the building at the estimated cost of $5,876,000, with the changes noted above.

While the Subcommittee members agreed that they had authority to act in this matter, they felt that they should consult with their Governments. Dr. Portner was requested to prepare a background paper in order to assist the members in presenting the case to their Governments. It was pointed out to the Subcommittee that any delay now would increase the length of time necessary for construction of the building, and that from the time the architects were given authority, a period of six months would be needed to prepare the detailed drawings.

It was therefore agreed that the Subcommittee would meet on 19 July, at 10:30 a.m., in order to decide whether authorization should be given for the preparation of the detailed drawings, based upon the revised estimate of $5,876,000.

The meeting was adjourned at 12:05 p.m.

Report of the Meeting Held 25 July 1962 [1]

The Permanent Subcommittee on Buildings and Installations met at 3:00 p.m., Wednesday, 25 July 1962.

Present:

Mr. James R. Wachob (United States of America), Chairman
Mrs. Lilian O'Connell de Alurralde (Argentina)
Mr. Olegario Russi (Chile)

The Subcommittee was assisted by:

Dr. Stuart Portner, Chief of Administration, PASB
Mr. Román Fresnedo Siri, Architect
Mr. Louis Justement, Architect
Mr. Eugene J. Settino, Chief, General Services Section, PASB

The meeting was called to order by the Chairman, Mr. Wachob, who referred to the request made at the Subcommittee's meeting on 5 July to approach the W. K. Kellogg Foundation for the additional funds required to meet the estimated shortfall in the construction of the new headquarters building. Mr. Wachob asked Dr. Portner to report on the results to date.

Dr. Portner explained that immediately after the 5 July meeting, and pursuant to the Subcommittee's request, the Director had communicated with Dr. Emory W. Morris, President of the W. K. Kellogg Foundation, for the purpose of arranging a meeting to discuss the financial situation in regard to the new headquarters building. Unfortunately, Dr. Morris was travelling for the Foundation, which precluded an immediate meeting with Dr. Horwitz.

Finally, after further exchange of communications, a meeting mutually satisfactory to Dr. Morris and Dr. Horwitz was arranged for 14 August 1962.

The Chairman then opened for discussion the matter of approving the preparation of the detailed drawings for the building, which the Subcommittee members had decided, at the 5 July meeting, warranted consultation with their respective Governments before a final decision was reached.

Mrs. de Alurralde (Argentina) indicated that, because of the importance of first resolving the financial position, and in view of the fact that the XVI Pan American Sanitary Conference would be held within a short time, it was the desire of her Government to withhold approval for the preparation of the detailed plans at this time.

In succession, Mr. Russi (Chile) and Mr. Wachob (United States of America) reiterated the importance of resolving the matter of the financial position before proceeding with the decision on the detailed drawings. The decision to defer the preparation of the detailed drawings was carried unanimously.

The Chairman further expressed the desire of his Government that the Subcommittee be convened as soon as the results of the Director's negotiations with the Kellogg Foundation were known. He requested Dr. Portner to inform the members how this could be timed, in view of the approaching date of the Pan American Sanitary Conference.

Dr. Portner indicated that the Director's departure to attend the Pan American Sanitary Conference was scheduled for 17 August. Since 14 August had been set for the

[1] Document CSP16/21, Annex IV.

meeting with Dr. Morris, a meeting of the Subcommittee could be called on either 15 or 16 August, at which time the Director would report on the results of his financial negotiations.

The meeting was then adjourned.

Report of the Meeting Held 16 and 20 August 1962 [1]

The Permanent Subcommittee on Buildings and Installations met at 3:15 p.m., Thursday, 16 August, and at 11:00 a.m., Monday, 20 August 1962.

Present:

Mr. James R. Wachob (United States of America), Chairman
Mrs. Lilian O'Connell de Alurralde (Argentina)
Mr. Olegario Russi (Chile)

The Subcommittee was assisted by:

Dr. Abraham Horwitz, Director, PASB
Dr. Stuart Portner, Chief of Administration, PASB

The meeting was called to hear the report of the Director of the Bureau on the interview which, in accordance with the Subcommittee's instructions, he had had with Dr. Emory W. Morris, President of the W. K. Kellogg Foundation, concerning the possibility of an additional grant for the new headquarters building.

Dr. Horwitz stated that he had met with Dr. Morris on the preceding Tuesday. He had given Dr. Morris a detailed account of the events which had occurred since the XIII Meeting of the Directing Council and which had led the Subcommittee to reiterate its concurrence in the winning design of Mr. Román Fresnedo Siri for a structure containing, after elimination of certain items, a total of 197,000 sq. ft., at a construction cost of just over $27 per sq. ft. He had also informed him of final changes to reduce the costs, all of which had been approved by the Subcommittee, and had explained that, after a careful review by the architect and by special consultants, the present estimate of the total cost of the building was $5,876,000, or slightly more than a million dollars over the amount that was available.

Dr. Morris had promised to study the situation and stated that, as he was to be a member of the United States Delegation to the XVI Pan American Sanitary Conference, he would let Dr. Horwitz know of his decision in Minneapolis.

Dr. Horwitz stated that during the interview he had learned that the $3,750,000 grant had come from the capital of the Foundation, not from current income. Detailed arrangements had therefore been made by the Foundation for the sale of securities, etc., so that the full amount of the grant would be available in January, 1963, when construction was to begin. Any delay in beginning construction would entail changes in those financial arrangements, which would be difficult to entertain unless there were very definite and solid grounds for them. Moreover, construction costs were rising at the rate of about 5 per cent per annum, so that a year's delay would add approximately $300,000 to the total cost.

It should also be borne in mind that, in the absence of a definite instruction to begin construction in January, the architects had meanwhile stopped all work on the drawings, on which about five months' work needed to be done. Moreover, the architect was likely to have difficulties in recruiting draftsmen in the near future, should the current stoppage continue. Those facts should be taken into account by the Subcommittee.

If the decision of the Kellogg Foundation was negative, then arrangements should be made for a loan of the $1,250,000. In view of what the Organization had already received—donation of the site by the United States, the Kellogg Foundation grant—the Director did not believe there would be any difficulty. A long-term, low-interest loan could be negotiated with a bank and repaid in annual installments without there being any increase in the quota contributions of Governments. In any event, work on the building should not be stopped. Whether or not the Kellogg Foundation gave a favorable reply—and he felt certain that it would—or whether the idea of a bank loan found favor with the Subcommittee, the Director thought it highly desirable that concrete proposals be made to the Conference.

Mr. Wachob (United States of America) thanked the Director for his report on his interview with Dr. Morris. He suggested that the Subcommittee adopt the following procedure: first, the members should put to Dr. Horwitz any questions they felt necessary; then the Subcommittee should go into executive session and work out its recommendations to the Conference.

It was so agreed.

In reply to questions by the Representatives of Argentina and the United States of America concerning the anticipated difficulties with draftsmen, Dr. Portner explained that, in addition to their permanent basic staff, architects employed a team of temporary draftsmen when working on a project. They were highly skilled personnel, in great demand and short supply. Architects usually planned their work so that one project followed closely on another. In that way they were able to retain their temporary staff. The architects of the new headquarters building would finish a project in the forthcoming week and, while in their course of normal business they might keep on their temporary staff for two or three weeks in anticipation of definite instructions to proceed with work on the detailed drawings, they obviously could not do

[1] Document CSP16/21, Annex V.

that if they would have to wait two, three, or more months for such instructions. If they had to let their temporary staff go, there would be a further delay and that would have to be added to the five months which, as Dr. Horwitz had pointed out earlier, were needed for work on the drawings; in other words, construction would not then be begun until March, at the very earliest. Any delay might very well make even the revised costing inadequate, since construction costs continue to rise.

With reference to the idea of a loan, Mrs. de Alurralde (Argentina) asked Dr. Horwitz to explain how it could be repaid without increasing quota contributions and rearranging programs.

Dr. Horwitz stated that the PAHO program and budget would contain more than 300 projects and would amount to about $13 million. It would have to be reviewed, and a saving of, say, $60,000 was not impossible (delays in recruiting staff, non-implementation of projects, etc.). Of course, all such rearrangements would be submitted to the Executive Committee. Moreover, certain Governments were in arrears with their quotas. Were they to pay them, the $60,000 could be obtained from the Working Capital Fund instead.

The Subcommittee then went into executive session.

It reviewed in detail the progress made and reaffirmed the conclusion it had reached earlier, namely, that everything possible had been done to reduce costs and that any further reductions would (a) violate the basic design of the building, which had already been approved by the Fine Arts Commission and the National Capital Planning Commission; and (b) create a new need for space in a relatively short time. The Subcommittee felt it necessary to have the opinion of the Conference on the initiation of detailed plans for the building. It recommended the figure of $5,876,000 as the absolute minimum construction cost, in keeping with the review of the architect and the expert construction estimators, H. A. Sloane Associates, who had undertaken a comprehensive review of the cost of constructing the proposed headquarters building. That amount would provide for a building that embraced all the elements of the original design, including 197,000 sq. ft. of construction, with accommodation for a maximum of 395 persons.

Finally, the Subcommittee agreed to request that the Conference authorize it to instruct the Director to continue his efforts to obtain the necessary funds to cover the total cost of constructing the new headquarters building, it being understood that the total construction costs will not involve any increase in the quota contributions of the Governments.

The meeting recessed at 5:50 p.m. It reconvened on 20 August 1962, at 11:00 a.m., with representatives of the Bureau attending.

The Subcommittee approved the text of its report to the XVI Pan American Sanitary Conference.

The meeting was adjourned at 1:30 p.m.

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