*executive committee of the directing council*

PAN AMERICAN HEALTH ORGANIZATION

*working party of the regional committee*

WORLD HEALTH ORGANIZATION

70th Meeting
Washington, D.C.
July-August 1973

Provisional Agenda Item 14

CE70/10 (Eng.)
10 May 1973
ORIGINAL: SPANISH

# VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL

In implementation of Resolution XIX, approved by the Directing Council at its XVII Meeting, the Director convened the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control. It was held in the city of Medellín, Colombia, from 9 to 12 April 1973 and attended by representatives of 29 Member Governments and observers from seven international agencies.

The Director is pleased to submit to the Executive Committee for consideration the following documents for transmittal to the Directing Council at its XXII Meeting, together with such recommendations as the Committee deems advisable:

- Final Report
- Program and Budget Estimates of the Pan American Foot-and-Mouth Disease Center
- Program and Budget Estimates of the Pan American Zoonoses Center

The documents concerning technical activities relating to the various items dealt with by this VI Inter-American Meeting are available for study and review by the Members of the Committee, who may obtain them from the Secretariat.

The main items dealt with by this Meeting were: the organization of systems for improving food and nutrition in the Americas; prevention of exotic animal diseases and their importance in international trade in animals; and the training of auxiliary personnel for animal health programs.

The Final Report contains 20 resolutions approved by the Ministers of Agriculture on the following topics: selective production of basic foods, production of rabies vaccine for animal use, prevention and control

of exotic diseases, contribution of the Inter-American Development Bank to animal health programs, training of animal health assistants, and standardization of international regulations governing the movement of animals and animal products.

The two principal resolutions having budgetary implications that were discussed and approved were as follows:

Resolution IV, by which the Governments reiterated their full support for the Pan American Foot-and-Mouth Disease Center and recommend to the XXII Meeting of the Directing Council of PAHO that it approve the proposed program and budget estimates of the Center for 1974, as set forth in Document RICAZ6/4.

After discussing and evaluating Document RICAZ6/3, the Meeting approved Resolution V, by which the countries reaffirmed their support of the Pan American Zoonoses Center. In operative paragraph 4 of this resolution, the Governments recommend to the XXII Meeting of the Directing Council of PAHO that it approve the proposed program and budget estimates of the Center for 1974, as presented in Document RICAZ6/3.

Annexes

PAN AMERICAN HEALTH ORGANIZATION

WORLD HEALTH ORGANIZATION

CE70/10 (Eng.)
ANNEX I

# VI INTER-AMERICAN MEETING AT THE MINISTERIAL LEVEL ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL

MEDELLIN, COLOMBIA, 9-12 APRIL 1973

RICAZ6/25 (Eng.)
12 April 1973
ORIGINAL: ENGLISH-SPANISH

F I N A L  R E P O R T

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

# FINAL REPORT

The VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control was held at the Inter-Continental Hotel in Medellín, Colombia, from 9 to 12 April 1973, having been convened by the Director of the Pan American Sanitary Bureau pursuant to Resolution XIX approved by the Directing Council of the Pan American Health Organization at its XVII Meeting.

## OFFICERS

The heads of delegations met on 9 April to elect the officers of the Meeting, with the following results:

| | |
|---|---|
| President: | Dr. Hernán Vallejo Mejía<br>Minister of Agriculture, Colombia |
| Vice-Presidents: | Dr. José Librado Hernández<br>Secretary, Director General of Livestock<br>Secretariat of State for Agriculture, Dominican Republic |
| | Dr. A. Da Costa Edwards<br>Minister of Agriculture, Science, and Technology, Barbados |

Dr. Abraham Horwitz, Director of the Pan American Sanitary Bureau, served as Secretary ex officio.

## PARTICIPANTS

The following Governments were represented at the Meeting: Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, France, Guatemala, Guyana, Haiti, Honduras,

Jamaica, Kingdom of the Netherlands, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, United Kingdom, United States of America, Uruguay, and Venezuela. Observers from the following international organizations were also present: Food and Agriculture Organization of the United Nations, Inter-American Development Bank, Inter-American Institute of Agricultural Sciences, International Office of Epizootics, International Regional Organization for Health in Agriculture and Livestock, and the United Nations Children's Fund.

## PLENARY SESSIONS

At the inaugural session, held on 9 April, addresses were given by Dr. Abraham Horwitz, Director of the Pan American Sanitary Bureau, and Dr. Hernán Vallejo Mejía, Minister of Agriculture of Colombia.

Dr. Horwitz referred to the III Special Meeting of Ministers of Health of the Americas, held in Chile in 1972, in which the progress achieved in the last decade was carefully reviewed and targets for the period 1971-1980, including goals related to food, nutrition and animal health, were set. Those bearing on nutrition, he said, included reduction of grade III protein-calorie malnutrition by 85 per cent, grade II by 30 per cent, nutritional anemias in pregnancy by 30 per cent, endemic goiter by at least 10 per cent, and hypovitaminosis A in vulnerable groups by 30 per cent. In addition, the Ministers committed themselves to eradicating foot-and-mouth disease in South America and to preventing its introduction in countries now free of the disease. They also undertook to work toward reducing the incidence of the most common zoonoses, with special attention to rabies, bovine tuberculosis, hydatidosis, and equine encephalitis.

In order to achieve the foregoing, Dr. Horwitz stated, it is necessary to train the human resources required, which calls for the preparation of 18,000 veterinarians and no less than 30,000 assistants during the decade. The results of the discussions on this topic at the Meeting would, he said, serve as a guide in developing a program of cooperation on specific projects in the health and agriculture sectors.

Referring to all the problems calling for joint, multidisciplinary action and the participation of the various governmental agencies, Dr. Horwitz said that the time has come to identify and recognize the true magnitude of the scourge that is holding back the work of the countries, pointing out that vital needs should be given priority and that "the promotion of health and nutrition is the responsibility of society as a whole, as well as of each of its members."

Dr. Vallejo Mejía welcomed the representatives and expressed his thanks for the nomination which led to his election as President of the Meeting. He stressed that the countries are struggling tirelessly to raise the standards of living of the peoples, and that it is essential for the economies that agricultural and livestock production be intensified. Joint action is required, he said, in the face of the urgent and ineluctable duty to improve the diet. Such action is feasible thanks to the technical teams that are available, and the assistance of the Pan American Health Organization. At the same time, it is necessary to make maximum utilization of the financial resources that have been invested and avoid wasting others that are indispensable for the programs.

It is of the utmost importance, Dr. Vallejo Mejía averred, to encourage livestock producers to use vaccines so as to avoid the spread of foot-and-mouth disease and, in this regard, to convince them that the campaign is beneficial to themselves personally, above all, as well as to the country and the national economy.

In addition, he cited the progress that has been achieved by some of the countries that are in the forefront in matters of animal health, as well as the support for this hemispheric undertaking that has been provided by PAHO through its Pan American Foot-and-Mouth Disease and Zoonoses Centers.

The VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control was thereupon declared in session.

The first plenary session, held on 9 April, began with an address by Dr. Fabián Recalde, Representative of the Food and Agriculture Organization of the United Nations, in which he summarized the evolution of agriculture in Latin America and provided data on agricultural production, which recently has failed to show significant progress. In order to overcome the current situation and raise levels of production and productivity, he said, considerable efforts will be required in a number of different related fields. These include rationalization of the marketing process; optimum utilization of scientific and technological advances; intensification of research with a view to identifying the varieties of agricultural food products that are best adapted to the respective environments; strengthening of agricultural extension services; establishment of food price policies; development of methods for

rational resource utilization and product conservation and distribution; and adoption of techniques to increase the volume and variety of industrialized products destined for human consumption.

Dr. Moisés Behar, Director of the Institute of Nutrition of Central America and Panama, began consideration of Agenda Item 4, "Organization of Systems for the Improvement of Food Consumption and Nutrition in the Americas," with his paper entitled "Responsibility of the Health Sector in Food and Nutrition." He analyzed the nature of the nutritional diseases problem and itemized the responsibilities of the health sector. They include, he said, diagnosis, action programs involving care for the sick, preventive or control measures, research, and manpower training.

Next, Mr. Roberto Esguerra Barry, Regional Director of UNICEF for the Americas, presented his paper "UNICEF Assistance in Food and Nutrition Programs in the Americas." The collaboration of UNICEF, he said, has evolved through various phases: first, food assistance, especially the distribution of milk; second, palliative and provisory action; and third, promotion and coordination at the field level - that is, applied nutrition programs and educational activities aimed at increasing the production and use of food. He went on to say that there have been changes recently in the assistance policies of the agencies participating in the various food and nutrition programs. In concluding, he stressed the essential role of planning in all multidisciplinary programs, which, he declared, will contribute greatly toward assuring the success thereof.

Dr. Roberto Rueda Williamson, PAHO Regional Adviser on Nutrition, then spoke on "Mechanisms for Formulating and Coordinating National Food and Nutrition Policies and Programs." After first emphasizing the magnitude and far-reaching importance of nutritional problems, he elaborated on the background and the elements that have gone into food and nutrition policies in Latin America and described the operating mechanisms that are needed in the formulation and development of such policies.

The floor then being open for discussion of the foregoing topics, the Representative of Brazil, Dr. Ezelino de Araújo Arteche, gave a full report on agricultural planning in support of the national food and nutrition policy in his country. The Representative of the United States of America, Dr. Clayton Yeutter, in turn, described experiences with the food and nutrition programs for schoolchildren and low-income families that are being carried out by his country's Government.

The Representative of Brazil presented a draft resolution on the selective production of basic foods, which was unanimously approved at a later session.

The second plenary session opened with the presentation by the Representative of Colombia of a draft resolution on national food and nutrition policies, which was also approved unanimously.

The Representative of Cuba expressed his country's interest in the foregoing subject, recognizing its great importance, and described the food and nutrition programs included in the national development plan. The

Representative of Peru supported the opinions expressed in the course of the discussion and emphasized the importance of the efforts being carried out in his country to make use of renewable marine resources with a view to upgrading the peoples' nutritional status. Those renewable resources produce food for human consumption and indirectly, through the utilization of the products derived from the fisheries industry for the feeding of domestic animals, constitute an excellent source of nutrients for the population.

The remainder of the session was devoted to country reports on the progress of activities to combat foot-and-mouth disease and other vesicular diseases. In the order in which they were registered, the following representatives presented their reports: Mr. Gerardo González (Panama), Dr. Mario Motta González (Guatemala), Dr. Adolfo Menéndez Bolaños (El Salvador), Dr. Francisco Matamoros Flores (Honduras), Dr. José Luis Solano (Costa Rica), Dr. Rodrigo González (Nicaragua), Hon. Jerome Jones (Trinidad and Tobago), Mr. Mohamed Kasim (Guyana), Dr. L. E. McLaren (Jamaica), Hon. A. Da Costa Edwards (Barbados), Dr. Edsel A. V. Jerusun (Kingdom of the Netherlands), Dr. Teodorico Terry Elejalde (Peru), and Dr. Ubiratan Mendes Serrao (Brazil).

At the third plenary session, held on 10 April, Dr. Ubiratan Mendes Serrao (Brazil), President of the South American Commission on Foot-and-Mouth Disease, gave a report on the first meeting of that body, recounting the activities of the Commission since its creation and making reference to the resolutions approved at the meeting. The Representative of Chile presented a draft resolution on the subject, which was approved.

Next, Dr. Hans Bahneman of the Pan American Foot-and-Mouth Disease Center presented the draft program and budget estimates of the Center for

1974 and the provisional draft for 1975, summarizing the most important activities currently being carried out. A draft resolution on this subject, presented by the Representative of Venezuela, was unanimously approved.

Dr. William M. Henderson, Chairman of the PAHO Scientific Advisory Committee on the Pan American Zoonoses Center, presented to the Meeting the Center's report to the Director and emphasized the Committee's recommendations in regard to site and physical facilities, personnel, research and assistance programs for zoonoses control, bacteriology (including tuberculosis, brucellosis, food microbiology, and leptospirosis), laboratory animals, parasitology, virology, and other matters of a more general nature. The Representative of Guatemala presented a draft resolution on the subject, which was approved at a subsequent session.

Dr. Ramón Rodríguez Toro, Director of the Pan American Zoonoses Center, then presented the proposed program and budget estimates of the Center for 1974 and the provisional draft for 1975. Supplementing the information contained in the budget report, he pointed out the most important activities, as well as their objectives, and expressed the belief that they would all result in broad benefits for the agriculture and health sectors. The Representative of Brazil presented a draft resolution, which was approved.

Also in the third session the Representative of Colombia presented a draft resolution on the production of rabies vaccine.

The fourth plenary session, under the chairmanship of Dr. José Librado Hernández, continued with the country progress reports on foot-and-mouth disease

and other vesicular diseases, with presentations by the following participants: Dr. Juan Pablo Romero (Paraguay), Dr. Gustavo Larrea Córdova (Ecuador), Lt. Colonel José Gil Reyes (Bolivia), Dr. Kenneth F. Wells (Canada), Dr. Sergio Augusto Andrade (Chile), Dr. Carlos Pérez Hidalgo (Mexico), Dr. Humberto Olmos Colmenares (Venezuela), Dr. Jaime Estupiñán (Colombia), Dr. Carlos Manuel Martínez Reyes (Cuba), Dr. Elysée Augustin Eustache (Haiti), Dr. Frank J. Mulhern (United States of America), Dr. Nelson Magallanes (Uruguay), Mr. Joseph Raoul Santamaria (France), Dr. Jacques René Parraud (Argentina), and Dr. José Librado Hernández (Dominican Republic).

The fifth plenary session, held on 11 April, was devoted to Agenda Item 9, "Control and Prevention of Exotic Animal Diseases and Their Importance to the International Movement of Animals and Animal Products." Dr. Jerry J. Callis opened the proceedings with the presentation of his paper, "Some Exotic Animal Diseases that Pose a Threat to the Americas." He called attention to the increasing risk that diseases not now existing in the Hemisphere may be introduced as a result of human and animal population growth and the stepping up, in terms of both speed and quantity, of the movement of animals and animal products. In particular, he referred to five diseases: African swine fever, bovine herpesvirus mammallitis, duck virus enteritis, swine vesicular disease, and San Miguel sea lion virus, which has been shown to be capable of producing lesions in swine.

Dr. R. Vittoz, Director of the International Office of Epizootics (OIE) in Paris, France, spoke on "Factors Affecting National and International

Animal Health Regulations on the Movement of Animals and Animal Products." He described the work of the OIE in drawing up and standardizing zoosanitary export and import regulations and pointed out the need for international cooperation to assure the effective operation of the OIE information system, which was established precisely on the basis of the governments' commitment to report any outbreaks of swine fever or foot-and-mouth disease occurring in their territories.

Next, Dr. R. E. Omohundro presented his paper, "Emergency Programs Operations," in which he described this activity, carried out within the Veterinary Services of the U.S. Department of Agriculture, and its role in planning for the eradication of exotic diseases. He described the steps being taken to eradicate Newcastle disease, which is caused by a virus that is foreign to the United States.

Dr. J. F. Frank, speaking on "Diagnostic Laboratories for Exotic Diseases: Organization and Functions," indicated some of the principal duties of the diagnostic laboratory in the detection and control of exotic diseases and emphasized that the extent to which these functions are fulfilled will depend on the availability of adequate funds and resources and, most importantly, properly trained and motivated personnel.

The last contribution on the subject was presented by Dr. H. O. Königshöfer, who spoke on "Necessary Procedures and Measures to Improve the Status of the International Movement of Animals and Their Products." He stated that the use of effective sanitary practices will make it possible

to diminish the economic impact caused by restrictions, and also that improvement of epizootiologic surveillance and reporting will help significantly to do away with the limitations within which sanitary measures are currently acting as a hindrance to international trade.

Following an interesting debate on this topic, the Representative of Guyana presented a draft resolution on the subject in general, which was unanimously approved in the following session.

The sixth plenary session, chaired by Hon. A. Da Costa Edwards, opened with consideration of Agenda Item 10, "Training of Auxiliary Personnel for Animal Health Programs." The first paper, entitled "Need for Animal Health Assistants in the Development of Livestock Health and Promotion," was presented by Dr. Harold B. Hubbard. He briefly summarized the situation in the veterinary medical profession and called attention to measures that will need to be taken in order to feed and supply a constantly growing population. Livestock production, for its part, he said, will call for optimum utilization of scientific and technological advances in the fields of animal genetics, nutrition, production, husbandry techniques, and marketing management and techniques. In view of the demand for veterinarians and the schools' limited ability to turn them out in the numbers needed, it is indispensable, he said, to undertake programs to train and encourage the utilization of animal health assistants.

Dr. Rubén Lombardo, in his paper "Present Status of the Training of Animal Health Assistants in the Americas," started with a background statement on manpower training and then went on to describe the duties and

responsibilities of veterinary medical assistants. In his analysis of the current situation, Dr. Lombardo touched on the auxiliaries' main fields of activity, schools for training animal health assistants, and conditions of entry, in addition to which he gave a summary of visits made in ten different countries where such auxiliaries are used, with a view to gaining a general idea of the main programs on animal health and related matters.

Next, Dr. Juan Pablo Romero outlined "Perspectives for a Training Program," reporting what is being done in Paraguay in this regard. The auxiliaries' activities are directed toward controlling outbreaks of disease, assisting the veterinary medical services in the treatment of animals, providing diagnostic services, and establishing a system for more complete and precise reporting of diseases. One of the aims of this effort is to entrust the auxiliary with as many routine tasks as possible, thereby freeing the veterinarian to apply his more professional education and background in the supervision of animal health programs and the planning of new long-range activities.

Dr. Stuart N. Watson then spoke on "Formulation of a Curriculum According to the Needs of Each Country." For a good study program, he said, it is necessary to have adequate space and physical facilities to carry out the training activities and also to establish admission requirements on the basis of realistic criteria. The academic phase of the program should be as complete as possible and should be followed by a period of field practice. He also spoke about planning the study cycle and the need for adapting the curriculum to the specific situation in each country.

In the discussion that followed, the Representative of Ecuador took the floor to indicate that he considered it important to implement a training program of this kind in his country, adapting it logically to the prevailing conditions.

The Representative of Honduras, after congratulating the speakers, pointed out that in his country there is a shortage of auxiliaries of this kind and that the problem is in need of solution. He presented a draft resolution on possible Inter-American Development Bank financing for this purpose, which was later approved.

The Representative of Brazil, Dr. Stoessel Guimaraes Alves, reported on the Brazilian solution to the problem of training animal health assistants.

Dr. Aramis Fernández Luciano, Representative of Cuba, took the floor next to tell how veterinary auxiliaries are trained in his country, and he expressed the belief that provision of personnel at this level is the only hope for meeting the demands of animal health programs.

The Representative of Jamaica stated that in several of the Caribbean countries concern has already been expressed on this matter and that they have requested assistance from the United Nations Development Program to create one or more centers for the training of auxiliary personnel.

The Representative of Colombia, Dr. Jaime Estupiñán, commented on the situation in his country and said that he considered aid for auxiliary programs, along with the carrying of technology into the field, highly important undertakings. He presented a draft resolution on personnel training, which was approved.

Speaking in the name of the Inter-American Development Bank, Mr. Carlos Prato stated that his institution is interested in granting nonreimbursable resources for assistance in the field of professional- and auxiliary-level training.

The Secretariat thereupon presented a number of resolutions to the plenary for consideration, all of which were approved.

Consideration of Agenda Item 11, "Epidemiologic Surveillance of Rabies, of Venezuelan Equine Encephalitis, and of Foot-and-Mouth Disease and Other Vesicular Diseases," began with a report by Dr. Roberto Goić Martinic on the steps that are expected to be taken this year to improve and simplify the system. It is planned to extend this epidemiologic network to include the countries of Central America and Panama.

Dr. Rubén Lombardo then presented a report on "Epidemiologic Surveillance of Rabies and Equine Encephalitis," in which he described the system in question, its data resources, and its purposes, objectives, and achievements to date. He pointed out that efforts should be made to improve information on bovine rabies, and he asked the participants to take note of the correction sheet corresponding to the document on surveillance of Venezuelan equine encephalitis.

The Representative of Paraguay, Dr. Raúl Prieto Bustos, presented a draft resolution on "Epidemiologic Surveillance of Vesicular Diseases," which was approved.

The Representative of Costa Rica commented on the epidemiologic surveillance of rabies and proposed a draft resolution which was also approved.

The Representative of Cuba then spoke on the epidemiologic surveillance of Venezuelan equine encephalitis and gave data on his country's program, which was initiated as a result of the outbreak of the disease in Central America, Mexico, and the United States of America. He presented a draft resolution, which was approved.

In the name of his Government, the Representative of Trinidad and Tobago offered Port-of-Spain as the site for the VII Meeting. The Representative of Venezuela thereupon requested that the proposal of Trinidad and Tobago be accepted, presenting a draft resolution to that effect which was accepted by acclamation.

The Representative of the United States of America thanked the Government of Colombia for its warm and generous hospitality, as well as for its commendable assistance in the organization and conduct of the Meeting. He then presented a draft resolution that was also approved by acclamation.

The Representatives of El Salvador and Argentina presented draft resolutions on "Programs for the Prevention and Control of Cysticercosis" (topic for the next meeting) and "Training of Professional Personnel in Meat Inspection," respectively, which were approved.

The Representatives of Brazil, Peru, and Guyana presented draft resolutions that were left in abeyance until the seventh plenary session.

At the seventh plenary session, which was held on 12 April, the following draft resolutions were considered and approved: "Standardization of International Regulations Governing the Movement of Animals and Animal Products," "Epidemiologic Surveillance of Eastern and Western Equine Encephalomyelitis," and "The Importance of Vectors in the Spread of Foot-and-Mouth Disease and the Zoonoses - Methods for their Control," presented by the Representatives of Brazil, Argentina, Peru, and Guyana, respectively.

The closing session also took place on 12 April and was presided over by Dr. Hernán Vallejo Mejía. The Secretary presented the Final Report to the representatives for their consideration, and it was approved unanimously.

Dr. Martín Vázquez Vigo, Chief of PASB Zone IV, speaking in the name of the Director of the Pan American Sanitary Bureau, thanked the representatives and other participants for their attendance and congratulated them on the fruitful work carried out in the course of the deliberations. To the Minister of Agriculture and the Government of Colombia he expressed special gratitude for all the courtesies extended.

In his closing remarks Dr. Vallejo Mejía extended his thanks to Dr. Horwitz, Dr. Acha, and the Secretariat and language services personnel, and he expressed the hope that next year, in Port-of-Spain, equally satisfactory results would be obtained.

# RESOLUTION I

## SELECTIVE PRODUCTION OF BASIC FOODS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL,
ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering that an adequate well-balanced food supply for the population is the first step toward satisfactory nutritional status for both the individual and the family;

Recognizing that in each country or local region certain foods constitute the basis of the popular diet, especially among the less advantaged socioeconomic groups;

Considering that various legumes and cereals are the traditional sources of basic protein and calories for the Latin American population, but that they are not always available in the recommended quantities and proportions, or else they are beyond the purchasing power of the lower-income groups, and consequently there are frequent shortages of these two foods in the popular diet; and

Considering that it is also desirable to supplement the basic popular diet with animal protein of high nutritive value, especially in the groups requiring more nutrients,

RESOLVES:

1. To recommend to the Governments that, in addition to livestock development programs aimed at increasing the production of animal protein, they consider, as part of their food and nutrition policy, and on a priority basis, programs for increasing the selective production of foods, such as legumes and cereals, that constitute the basis of the popular diet, with provisions for assuring that prices are kept within the reach of the less favored groups.

2. To reiterate that the increased production of legumes and cereals will result in greater availability of raw materials for the production of concentrated animal feeds, which in turn will place animal protein within the reach of the population as a supplement to their basic diet.

(Approved at the second plenary session, 9 April 1973)

RESOLUTION II

NATIONAL FOOD AND NUTRITION POLICIES

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering that the high prevalence and seriousness of food and nutrition problems in large groups of the population in Latin America and the Caribbean constitute an obstacle to health and economic and social development;

Recognizing that an adequate nutritional status is a basic human right which, once it is achieved among all the population groups in the countries, will contribute toward attaining more equitable social justice;

Bearing in mind that food and nutrition problems are highly complex and involve various sectors of development;

Recognizing the need for the countries to coordinate their various sectoral efforts in this field through national food and nutrition programs that correspond to well-defined and coherent food and nutrition policies aimed at achieving adequate food and nutritional welfare for the entire population, especially for the more vulnerable groups of mothers and children; and

Considering that any food and nutrition policy should be an integral part of national, social, and economic development policy in each country,

RESOLVES:

1. To recommend to the Governments that have not yet done so, that in formulating their national development plans they incorporate therein and assign a high priority to well-defined policies and specific programs for food and nutrition.

2. To urge the Governments, in order to ensure the foregoing, to establish units on food and nutritional policy in their National Planning Offices, which would be responsible for identifying and formulating said policies, coordinating their intersectoral planning, and promoting their execution and evaluation.

3. To recommend to the countries that in their sectoral plans they include specific programs and activities on food and nutrition, giving high priority to the nutritional protection of mothers and children in the less advantaged socioeconomic groups, which constitute the most vulnerable part of the population.

4. To recommend to the Pan American Health Organization, the Food and Agriculture Organization of the United Nations, the United Nations Children's Fund, the United Nations Educational, Scientific, and Cultural Organization, and the United Nations Development Program that they also give high priority, within their respective programs of assistance to the countries of the Region, to those matters related to the development of coordinated biologically oriented policies on food and nutrition.

(Approved at the second plenary session, 9 April 1973)

RESOLUTION III

SOUTH AMERICAN COMMISSION ON FOOT-AND-MOUTH DISEASE

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL,
ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Having noted the report of the First Meeting of the South American Commission on Foot-and-Mouth Disease (RICAZ6/16), held at Rio de Janeiro, Brazil, during 26-28 February 1973, pursuant to Resolution VIII of the V Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control;

Recognizing the importance of the role of the Commission in the coordinated development of programs for prevention and control of the disease in the Hemisphere; and

Desiring that the Commission receive the necessary impetus for carrying out its task,

RESOLVES:

1. To express its gratification to the Pan American Health Organization for having taken steps to create the South American Commission on Foot-and-Mouth Disease and ask that it continue to provide its fullest support, through its Secretariat, to the Pan American Foot-and-Mouth Disease Center.

2. To endorse the resolutions of the First Meeting of the Commission and to recommend to the Governments, the Pan American Health Organization, and the Inter-American Development Bank that they adopt measures that will ensure their implementation.

3. To recommend to the Governments of the member countries of the Commission that they endeavor to obtain the administrative and financial resources necessary to assure the participation of their representatives on the Commission and on the committees referred to in Article VII of its Organizational Statute.

(Approved at the third plenary session, 10 April 1973)

RESOLUTION IV

PROPOSED PROGRAM AND BUDGET ESTIMATES OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1974 AND PROVISIONAL DRAFT FOR 1975

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Bearing in mind the serious and damaging consequences of foot-and-mouth disease for nutrition, the livestock industry, and the economic development of the affected countries, as well as the continuing threat that it represents for countries free of the disease;

Recognizing the indispensable role of the Pan American Foot-and-Mouth Disease Center in the promotion, development, and coordination of programs for prevention and control;

Taking into account Resolution I of the V Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control on the proposed program and budget estimates of the Center for 1973 and the provisional draft for 1974; and

Having carefully examined the proposed program and budget estimates for 1974 and the provisional draft for 1975 (Document RICAZ6/4),

RESOLVES:

1. To express its full support of the Pan American Foot-and-Mouth Disease Center and its programs.

2. To reaffirm the need for the Center to continue and to expand its activities in order to provide the Governments with the personnel training and technical advisory services that are indispensable for planning, carrying out, and coordinating national and regional programs for the prevention and control of foot-and-mouth disease.

3. To express its appreciation to the Government of Brazil for its unfailing goodwill and continuing support of the activities of the Center.

4. To recommend to the XXII Meeting of the Directing Council of the Pan American Health Organization that favorable consideration be given to the approval of the proposed program and budget estimates of the Center for 1974, as set forth in Document RICAZ6/4.

(Approved at the third plenary session, 10 April 1973)

RESOLUTION V

PROPOSED PROGRAM AND BUDGET ESTIMATES OF THE PAN AMERICAN ZOONOSES CENTER FOR 1974 AND PROVISIONAL DRAFT FOR 1975

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Recognizing the importance of the zoonoses problem in the production of foodstuffs and the development and progress of agricultural programs in the countries of the Americas, with the consequent repercussions for public health;

Being conscious of the task that the Pan American Zoonoses Center is performing in support of control programs in the countries through its technical assistance, training, and research activities and its reference services for diagnosis, production, and biological control;

Considering the growing interest of the Governments in the development of national programs for controlling the principal zoonoses, and the collaboration that the Center provides in the formulation of criteria and guidelines and the preparation of loan applications to be presented to international financing agencies; and

Having carefully studied the proposed program and budget estimates for 1974 and the provisional draft for 1975 (Document RICAZ6/3),

RESOLVES:

1. To express its full support of the Pan American Zoonoses Center and the work it is carrying out on behalf of the countries.

2. To reaffirm the need for the Center to continue its technical advisory services, training, and applied research activities, as indicated in the program and budget estimates for 1974 and the provisional draft for 1975 (Document RICAZ6/3).

3. To recognize that the said program and budget includes the activities necessary for the promotion, planning, development, and coordination of control programs for the principal zoonoses being carried out by the countries of the Region.

4. To recommend to the XXII Meeting of the Directing Council of the Pan American Health Organization that it approve the proposed program and budget estimates of the Center for 1974, as presented in Document RICAZ6/3.

5. To express its appreciation once again to the Government of Argentina and the United Nations Development Program for their continued and substantial support in the financing and operation of the Center.

6. To recognize that in the provisional draft program and budget estimates for 1975 an appropriate balance is maintained among the technical assistance, educational, and research services to be provided to the countries, and

that this provisional draft will be submitted in 1974 to the VII Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control, and to the Executive Committee and the Directing Council of the Pan American Health Organization for consideration.

(Approved at the third plenary session, 10 April 1973)

RESOLUTION VI

VOTE OF THANKS TO THE SCIENTIFIC ADVISORY COMMITTEE
OF THE PAN AMERICAN ZOONOSES CENTER

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL,
ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Recognizing the importance of the Pan American Zoonoses Center's scientific and technological activities, which contribute to advancing the knowledge and the control of these diseases;

Having appreciated, in all its worth, the report of the Scientific Advisory Committee on the work being carried out by the Center; and

Recognizing the distinguished scientific qualifications of the members of the Scientific Advisory Committee,

RESOLVES:

1. To express its appreciation of the excellent work carried out by the Scientific Advisory Committee of the Pan American Zoonoses Center, and to support its recommendations.

2. To reiterate the desire that these investigators of recognized experience serving on the Committee continue, for the time period deemed most desirable, to provide their guidance and advice to the Center's program of activities.

(Approved at the fourth plenary session,
10 April 1973)

RESOLUTION VII

PRODUCTION OF RABIES VACCINE FOR ANIMAL USE

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Bearing in mind that, according to information presented by the Pan American Zoonoses Center, the supplies of vaccine available for the control of bovine and canine rabies in the various affected countries of the Americas are not adequate; and

Considering the need for a solution to this problem,

RESOLVES:

1. To request the Pan American Health Organization to carry out studies to identify laboratories that might be able to function on a regional basis for the production of rabies vaccine.

2. To ask the Governments and the Organization to investigate the possibility of securing the necessary resources so that these laboratories may achieve an adequate level of vaccine supply for their respective areas of influence.

3. To recommend to the Pan American Zoonoses Center that it cooperate by providing the assistance needed to assure the effective operation of the regional laboratories that may be established.

(Approved at the fourth plenary session, 10 April 1973)

RESOLUTION VIII

PREVENTION AND CONTROL OF EXOTIC DISEASES

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Having noted with satisfaction the studies presented on the subject of the control and prevention of exotic animal diseases and their importance to the international movement of animals and animal products (Documents RICAZ6/5, 7, 11, 18, and 21);

Recognizing that current conditions relating to the movement of animals and animal products constitute a continuing and increasing threat of exotic diseases being introduced in the Hemisphere, and that the appearance of one or more of such diseases would cause enormous animal production losses and impair the international trade of animals and animal products;

Considering that the countries should have an adequate organizational structure, trained personnel in sufficient numbers, and other resources for preventing the introduction of exotic diseases; that they should carry out rapid detection; and that they should take appropriate action in the event that such a disease should appear;

Bearing in mind that it is necessary to achieve the greatest uniformity possible in the sanitary standards and regulations that govern the international movement of animals and animal products; and

Recognizing that prompt diagnosis is of primary importance in order to be able to take the necessary action, and that it is not practicable for each country to have laboratories capable of diagnosing the various exotic diseases,

RESOLVES:

1. To urge the Governments to take steps to develop the organizational structure, trained personnel, and necessary regulations, as well as plans of operation that will enable them to offer an effective service for the prevention of exotic diseases and to take prompt action in the event that they should be introduced.

2. To recommend to the Governments that they provide their respective animal health agencies with adequately trained personnel and the means necessary for maintaining fully adequate communication and exchange of information with a view to preventing exotic diseases.

3. To emphasize to the Governments the need to coordinate their efforts so as to obtain the greatest uniformity possible in the standards and basic principles that govern regulations pertaining to the international movement of animals and animal products, with special attention to exotic diseases.

4. To recommend to the appropriate international agencies that they establish the necessary coordination so that those countries without laboratories for the diagnosis of some or all of the exotic diseases may submit their suspected samples to specialized laboratories.

5. To recommend to these international agencies that, either directly or under their auspices, they organize national and international courses for personnel training, including field drills, to learn what to do in the event an exotic disease should appear.

(Approved at the sixth plenary session, 11 April 1973)

# RESOLUTION IX

## CONTRIBUTION OF THE INTER-AMERICAN DEVELOPMENT BANK TO ANIMAL HEALTH PROGRAMS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Recognizing the interest of the Inter-American Development Bank (IDB) and the Pan American Health Organization in contributing to the training of technical personnel in various fields of specialization concerned with the control of foot-and-mouth disease in their Member Countries;

Bearing in mind that such efforts are reflected specially in the joint training program on production techniques and official quality control of foot-and-mouth disease vaccine being carried out pursuant to Resolution V of the III Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control, and in the Seminar on Information and Community Education Techniques for Foot-and-Mouth Disease Control, to be held in Bogotá, Colombia, from 2 to 21 July 1973, in accordance with Resolution X of the V Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control;

Considering, however, that, in view of the magnitude of the problem, it is necessary to intensify training activities, both in terms of frequency and in other regards, especially the training of intermediate-level personnel and community education on prevention and surveillance techniques, in accordance with Resolution XIV of the V Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control; and

Bearing in mind that the loans granted by the Bank for foot-and-mouth disease control include technical assistance resources for personnel training, which should be coordinated with the programs mentioned,

RESOLVES:

1. To thank PAHO and IDB for the financial and technical support they are giving to the countries for the training of technical personnel.

2. To request these agencies to study the possibility of conducting a joint long-term training program that would include, in particular: (a) organization of training courses for intermediate-level personnel; (b) events, to be held from time to time, similar to the forthcoming seminar in Bogotá, Colombia, in July 1973, on information and community education techniques for the control and possible eradication of foot-and-mouth disease, for affected countries; (c) organization of a similar seminar on prevention and surveillance techniques for countries now free of the disease; and (d) more courses on industrial production and official quality control of vaccines, to be initiated at the Pan American Foot-and-Mouth Disease Center as of July 1973.

3. To recommend to other international or regional organizations that any planned training activity for the control of foot-and-mouth disease be coordinated with PAHO and IDB, so that the technical and economic resources available may be concentrated in the areas where they are most needed.

4. To recommend to the Governments that, in using the technical assistance funds for personnel training that are included in the Bank's loans, they take into account, in close cooperation with PAHO and IDB, programs already being carried out or planned for the future.

(Approved at the sixth plenary session, 11 April 1973)

RESOLUTION X

EPIDEMIOLOGIC SURVEILLANCE OF VESICULAR DISEASES

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Having considered the report on the foot-and-mouth disease epidemiologic surveillance program in the Americas (Document RICAZ6/8);

Bearing in mind the plan for surveillance proposed by the Pan American Foot-and-Mouth Disease Center at the First Meeting of the South American Commission on Foot-and-Mouth Disease, as well as Resolution II approved at that meeting; and

Recognizing the need to speed up the development of effective mechanisms for acquiring knowledge about the evolution of animal vesicular diseases and the status of programs for their prevention and control,

RESOLVES:

1. To urge the countries of the Americas affected by foot-and-mouth disease to adopt the epidemiologic surveillance program proposed by the Pan American Foot-and-Mouth Disease Center.

2. To recommend to the countries that, to that end, they give attention to the infrastructure of their animal health services, especially their statistical units, using as an example the plan carried out jointly

by the State of Rio Grande do Sul, Brazil, its Department of Agriculture, the Ministry of Agriculture of Brazil, and the Pan American Health Organization.

3. To request the Organization to consider the possibility of extending the surveillance program to areas in the Americas now free of foot-and-mouth disease, especially the countries affected by vesicular stomatitis.

(Approved at the sixth plenary session, 11 April 1973)

RESOLUTION XI

RABIES SURVEILLANCE

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Having noted with satisfaction the report on rabies surveillance in the Americas carried out by the Pan American Zoonoses Center since July 1969 (Document RICAZ6/9);

Considering the importance of the continuing and timely information that this inter-American system provides for the countries, enabling them to improve their measures for rabies control and prevention;

Considering the need to perfect the systems for zoonoses surveillance in the Americas; and

Bearing in mind that for this purpose it is necessary to train the personnel in the agriculture and health sectors who will be responsible for such activities, as well as to standardize the corresponding criteria,

RESOLVES:

1. To recommend to the Governments that they continue to participate in the rabies surveillance program.

2. To urge the countries once again to submit their information to the Pan American Zoonoses Center on a timely basis, prior to the deadlines that have been set, in order that it may have the most recent data for inclusion in its monthly bulletins.

3. To recommend to the Governments that they support the International Seminar on Rabies Surveillance planned by the Pan American Health Organization.

(Approved at the sixth plenary session, 11 April 1973)

## RESOLUTION XII

## SURVEILLANCE AND CONTROL OF VENEZUELAN EQUINE ENCEPHALITIS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Having noted with satisfaction the report presented by the Pan American Zoonoses Center on the surveillance of Venezuelan equine encephalitis (Document RICAZ6/9), which contains valuable data on the geographic distribution, epidemiology, and control of the disease;

Taking cognizance of the serious losses to the health and economy of the peoples caused by Venezuelan equine encephalitis;

Bearing in mind the capacity of the VEE virus to invade new areas, as demonstrated in the epidemic of 1969-1971, and the constant threat of it being introduced into countries free of the disease owing to lack of uniform prevention measures at the international level;

Recognizing that the countries that are free of VEE have expressed an interest in standardizing the criteria to prevent and control the disease;

Being conscious of shortcomings in the national-level epidemiologic surveillance programs in most of the countries of the Region, which supply the inter-American surveillance system, and of the scarcity of laboratories with trained personnel and adequate equipment for making rapid and reliable diagnoses;

Bearing in mind that many countries do not have a suitable infrastructure for meeting emergencies in which prompt and efficient action is called for, and that their supplies of vaccine are insufficient and the production thereof is beset with difficulties and limitations; and

Recognizing that it is necessary to define many of the epidemiologic and economic aspects of Venezuelan equine encephalitis,

RESOLVES:

1. To request the Pan American Health Organization, through the Pan American Zoonoses Center, to continue with its system for the epidemiologic surveillance of Venezuelan equine encephalitis in the Americas.

2. To recommend, to the extent that national circumstances allow, that the countries, both on their own and with the advice and assistance of PAHO, take steps to create the infrastructure required for the progressive upgrading of said surveillance system.

(Approved at the sixth plenary session, 11 April 1973)

# RESOLUTION XIII

## TRAINING OF ANIMAL HEALTH ASSISTANTS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Having considered the studies presented on the training of auxiliary personnel for animal health programs (Documents RICAZ6/10, 13, 14 and 17);

Bearing in mind the great increase in animal health and veterinary public health programs, whose development depends on the availability of adequate human resources;

Recognizing the need to define the specific functions of the growing numbers of veterinary medical assistants working in programs for disease control, food sanitation, and the technical development of animal health;

Taking into account that a large percentage of such nonprofessional personnel require appropriate training;

Considering that the continuing education of in-service personnel is indispensable for them to be able to better carry out their functions and adjust to the changes resulting from scientific advances and the progress that is taking place in animal health and veterinary public health programs; and

Bearing in mind that some of the countries plan to establish schools specifically for the training of animal health assistants,

RESOLVES:

1. To recommend to those Governments that have not already done so that they study the possibility of establishing schools for the training of animal health and veterinary public health assistants, or to reorient existing agricultural education with the same purpose, as well as centers for the continuing education of in-service personnel. Special emphasis should be given to the practical aspects of instruction in the curriculum, under the responsibility of competent professionals specifically trained in the subject.

2. To request the Pan American Health Organization to continue and to intensify its support for the development of such schools, training centers, and special courses for students.

3. To urge that the Governments establish the most effective coordination possible among the different national agencies involved in training assistants and regulating their responsibilities, and that they endeavor to assure that the number of students graduated is closely related to the opportunities for satisfactory employment under the supervision of veterinarians.

4. To recommend to the countries that, in the planning of animal health and veterinary public health programs, due priority and importance be given to the continuing education of nonprofessional personnel.

(Approved at the sixth plenary session, 11 April 1973)

## RESOLUTION XIV

## PLACE OF THE NEXT MEETING

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering the growing importance of animal health in the production of foodstuffs for the peoples of the Americas in particular, and for economic development in general; and

Bearing in mind that Resolution XIX of the XVII Meeting of the Directing Council of the Pan American Health Organization authorized the Director of the Pan American Sanitary Bureau to convene annually a meeting of the Ministers of Agriculture or their representatives to review the programs of the Pan American Foot-and-Mouth Disease and Zoonoses Centers and to discuss matters of mutual interest,

RESOLVES:

1. To express its satisfaction with the interest shown by the Governments of the Americas in the present Meeting, and with the valuable information presented on this occasion.

2. To emphasize once again the great importance of providing the Governments of the Hemisphere with the opportunity to exchange ideas and experiences at regular intervals in the field of animal health, in furtherance of the health and development of their peoples.

3. To thank the Government of Trinidad and Tobago for its kind invitation to serve as host for the next Meeting, and to recommend to the Director of the Bureau that he convene the VII Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control in the city of Port-of-Spain in 1974.

4. To thank the Director of the Bureau and his staff for their assistance in the organization and conduct of the present Meeting.

(Approved at the sixth plenary session, 11 April 1973)

## RESOLUTION XV

## VOTE OF THANKS TO THE GOVERNMENT OF COLOMBIA

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Bearing in mind the kind invitation of the Government of Colombia to hold the present Meeting in this country, as well as its outstanding willingness, support, and participation in the organization of the event and the successful outcome of the deliberations,

RESOLVES:

To express its sincere appreciation to the Government of Colombia for its cooperation and assistance in the conduct of this VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control.

(Approved at the sixth plenary session, 11 April 1973)

RESOLUTION XVI

PROGRAMS FOR THE PREVENTION AND CONTROL OF CYSTICERCOSIS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL,
ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering that, according to the information available, cysticercosis is widespread and is causing heavy economic losses for the livestock industry and serious public health problems in the countries or areas affected; and

Bearing in mind that it would be desirable, in a future meeting, to analyze this disease in terms of its economic implications, and as it affects the marketing of animals and animal products and public health, in general, as well as to examine the possibilities for controlling or eradicating the disease on the basis of present knowledge available,

RESOLVES:

To recommend that in the agenda of the VII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control a topic be included on "The Economic and Health Importance of Cysticercosis," which would deal with prevention, control, and surveillance, as well as the coordination that would be necessary among the agencies responsible for human and animal health in order to develop programs to combat this zoonosis.

(Approved at the sixth plenary session,
11 April 1973)

RESOLUTION XVII

TRAINING OF PROFESSIONAL PERSONNEL IN MEAT INSPECTION

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL,
ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering that the proper training of veterinary personnel in the inspection of meat and meat products is fundamental to the solution of many of the countries' health and economic problems;

Bearing in mind that the effectiveness of meat control services, through the proper reporting of findings in slaughterhouses and packing plants and the identification of affected areas, is an important aspect of programs to combat animal diseases;

Recognizing that this infrastructure constitutes, in turn, an essential factor in livestock promotion and development in important areas of the countries, since it opens up employment opportunities and marketing routes for rural producers;

Considering that it has not yet been possible, in many of the countries, to apply the advances in meat technology and the sanitary requirements of purchasing countries, thus making it difficult to maintain or expand import markets, which are an important source of foreign exchange; and

Being aware that the deterioration of foods rich in proteins diminishes the food and nutrition supply needed by the peoples, thus, in turn, being a vehicle for the transmission of communicable diseases,

RESOLVES:

To recommend that the topic "Training of Professional Personnel in Meat Inspection and Improvement of the Infrastructure of Veterinary Services in Slaughterhouses and Packing Plants as Part of Programs to Combat Animal Diseases" be considered for inclusion on the agenda of the VII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control.

(Approved at the sixth plenary session, 11 April 1973)

RESOLUTION XVIII

STANDARDIZATION OF INTERNATIONAL REGULATIONS GOVERNING THE MOVEMENT OF ANIMALS AND ANIMAL PRODUCTS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Bearing in mind the importance of the international movement of animals and animal products;

Considering that the international regulations that govern such movements should, in addition to seeking to prevent the introduction of exotic diseases among animals and protect the health of consumers, be fully adequate and appropriate, lest they constitute barriers to the transit of animals and their products; and

Considering the need for these regulations to be fully discussed and considered, insofar as possible, by the parties concerned in each geographic region,

RESOLVES:

1. To request the International Office of Epizootics, the Joint FAO/WHO Program on the Codex Alimentarius, and any other international agencies that may now, or in the future, be studying the sanitary regulations governing the international movement of animals and animal products,

to complete such studies, according to the immediate need for the information, in view of the advantages to be gained by regulating the aforesaid movement.

2. To urge the Governments of the Hemisphere that they be represented by specialists at meetings sponsored by the aforementioned agencies in which matters of major significance are dealt with, discussed, or approved.

(Approved at the seventh plenary session, 12 April 1973)

RESOLUTION XIX

EPIDEMIOLOGIC SURVEILLANCE OF EASTERN AND WESTERN EQUINE ENCEPHALOMYELITIS

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering that in various countries of the Americas there have been no reported cases of Eastern or Western equine encephalomyelitis;

Recognizing that their propagation in countries now free of these types of the disease would have serious social and economic repercussions; and

Bearing in mind the desirability of including Eastern and Western equine encephalomyelitis in the Venezuelan equine encephalitis epidemiologic surveillance program being carried out by the Pan American Health Organization through the Pan American Zoonoses Center,

RESOLVES:

To request the Pan American Health Organization to include Eastern and Western equine encephalomyelitis in the epidemiologic surveillance program for Venezuelan equine encephalitis being carried out by the Pan American Zoonoses Center.

(Approved at the seventh plenary session, 12 April 1973)

RESOLUTION XX

THE IMPORTANCE OF VECTORS IN THE SPREAD OF FOOT-AND-MOUTH DISEASE AND THE ZOONOSES AND METHODS FOR THEIR CONTROL

THE VI INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Considering the importance of vectors in the spread of foot-and-mouth disease and the zoonoses;

Bearing in mind the tremendous loss of animal protein that is caused by the death of animals afflicted by this disease; and

Being aware of the tremendous need that there is in the world for this animal protein,

RESOLVES:

To recommend that the topic "The Importance of Vectors in the Spread of Foot-and-Mouth Disease and the Zoonoses" be considered for inclusion on the agenda of the VII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control.

(Approved at the seventh plenary session, 12 April 1973)

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

DONE in Medellín, Colombia, this twelfth day of April, nineteen hundred and seventy three. The Secretary shall deposit the original texts in the archives of the Pan American Sanitary Bureau and shall send copies thereof to the Governments of the Organization.

Dr. Hernán Vallejo Mejía
President of the Meeting
Representative of Colombia

for Dr. Abraham Horwitz
Director of the
Pan American Sanitary Bureau
Secretary ex officio of the Meeting

PAN AMERICAN HEALTH ORGANIZATION

WORLD HEALTH ORGANIZATION

CE70/10 (Eng.)
ANNEX II

# VI INTER-AMERICAN MEETING AT THE MINISTERIAL LEVEL ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL

MEDELLIN, COLOMBIA, 9-12 APRIL 1973

Provisional Agenda Item 7

RICAZ6/4 (Eng.)
22 February 1973
ORIGINAL: SPANISH

## PROGRAM AND BUDGET OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1973, PROPOSED ESTIMATES FOR 1974, AND PROVISIONAL DRAFT FOR 1975

# PROGRAM AND BUDGET OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1973, PROPOSED ESTIMATES FOR 1974, AND PROVISIONAL DRAFT FOR 1975

## INTRODUCTION

The Pan American Foot-and-Mouth Disease Center was set up in 1951 by the Organization of American States with the purpose of promoting, advising, guiding, and coordinating in the Americas foot-and-mouth disease prevention, control, and eradication activities. This animal disease provokes the highest losses to livestock development in the affected countries. Since 1968 the Center has been a regular program of the Pan American Health Organization (PAHO), financed by a system of contributions by the Member Countries of the Organization, in accordance with the recommendations and resolutions adopted at the meetings of the Inter-American Economic and Social Council (Viña del Mar, Chile, June 1967), the Inter-American Committee on the Alliance for Progress (Rio de Janeiro, Brazil, September-October 1967), and the Directing Council of PAHO (Port of Spain, Trinidad and Tobago, October 1967). Additional financial assistance comes from France, the United Kingdom, and the Kingdom of the Netherlands.

The Ministers of Agriculture of the Hemisphere compose the Technical Council of the Center, meeting annually at the Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control to review and recommend the budget and program of activities of the Center to the Directing Council of the Organization. At the Fifth Meeting, held in Mexico City, Mexico, from 10 to 13 April 1972, the Ministers or Secretaries of Agriculture of the American countries and the Representatives of France, the United Kingdom, and the Kingdom of the Netherlands reviewed and recommended the approval of the proposed program and budget estimates of the Center for 1973 and the provisional draft for 1974, as reflected in Resolution I of the above-mentioned Meeting, which reads as follows:

## RESOLUTION I

### PROPOSED PROGRAM AND BUDGET OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1973 AND PROVISIONAL DRAFT FOR 1974

THE V INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL, ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL,

Recognizing the importance of the problem that foot-and-mouth disease constitutes for nutrition, livestock development, and economic progress in the countries of the Americas;

Taking into account the work that has been carried out by the Pan American Foot-and-Mouth Disease Center in the planning, execution, and coordination of programs for the prevention and control of this disease;

Bearing in mind Resolution IV of the IV Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control (Lima, Peru, 5-7 April 1971) on the proposed program and budget of the Center for 1972 and the provisional draft for 1973; and

Having examined carefully the proposed program and budget for 1973 and taken note of the provisional draft for 1974,

RESOLVES:

1. To express its full support of the programs of the Pan American Foot-and-Mouth Disease Center.

2. To recognize the need for the Center to continue its activities of promotion, development, and coordination in programs for the prevention and control of foot-and-mouth disease, as well as research and the training of officials in the countries of the Americas, as called for in the proposed program and budget for 1973 and in the provisional draft for 1974.

3. To recognize that the proposed program and budget of the Center contains well-balanced activities that are necessary in order to be able to provide the governments with scientific support and technical advisory services for the planning, execution, and coordination of national and regional programs for the prevention and control of foot-and-mouth disease.

4. To express its appreciation to the Government of Brazil for its unfailing goodwill and continuing support of the activities of the Center.

5. To recommend to the XXI Meeting of the Directing Council of the Pan American Health Organization that it approve the proposed program and budget of the Center for 1973, as set forth in Document RICAZ5/6.

6. To note that the provisional draft for 1974 contains soundly conceived and much-needed activities, which will be the subject of further study in 1973 by the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control and by the Executive Committee and the Directing Council of the Pan American Health Organization.

## THE NATURE OF THE PROBLEM

Foot-and-mouth disease affects almost all of the countries of South America, representing a constant threat to most of the Continent. Its great economic significance stems from its continuing presence and frequent epidemics in the domestic animal species. It is also a major obstacle prohibiting the international trade of animals and animal by-products. The chief factors involved in this disease are:

1. The variety of virus types causing the same disease syndrome without an immunological relationship among them.

2. The highly contagious nature of the disease and the rapidity with which it spreads among cattle, sheep, and swine.

3. Increase in the production costs for livestock owners, with the consequent social repercussion on the consumer.

4. Decrease in the availability of animal protein, much needed to remedy protein malnutrition in the human population of many countries.

5. Lower quantity of foreign currency for the exporting countries due to the decrease in the available livestock products for export and alteration of the price on the international market.

As a result, the control of foot-and-mouth disease in South America has become a continental enterprise, with the direct participation of all the affected countries and with the financial investment of the Inter-American Development Bank. It is estimated that in 1972 approximately half of the cattle population of South America, judged to be about 190 million animals, was incorporated into foot-and-mouth disease control programs.

## PURPOSE AND OBJECTIVES

The purpose of the Center is to prevent foot-and-mouth disease from gaining access and establishing the disease within the disease free area of the Americas and to achieve its control and eradication from the affected area through motivation, coordination, and advisory services to the countries and through specific research, evaluation, and technical training activities. To achieve its goal, the Center has three main divisions: Research, Diagnosis, and Reference; Training and Information; and Field Advisory Services, with the following objectives:

### I. RESEARCH, DIAGNOSIS, AND REFERENCE

1. Identification and study of the characteristics of strains of foot-and-mouth disease and vesicular stomatitis viruses causing

outbreaks, as well as those used for the production of vaccines and in potency control. It serves as the reference laboratory for the countries of the Hemisphere.

2. Study of new foot-and-mouth disease viruses and improvement of inactivated and modified live virus vaccines with a view to obtaining better and more lasting immunity.

3. Preparation and maintenance of a collection of various subtypes of foot-and-mouth disease virus considered to be of epidemiological importance and adapted to the Frenkel method, to cell lines, and to rabbit embryo organs, for dispatch to the countries in the event of emergencies in their vaccine production.

4. Study of new methods for ascertaining the effectiveness, uniformity, simplification, and adaptation of existing vaccines to conditions in the Hemisphere.

5. Solution of problems arising from the effects of the disease on international trade in meat and meat by-products, such as that of the survival of the virus and study of carriers.

6. Basic studies of the biological and physicochemical characteristics of foot-and-mouth disease and vesicular stomatitis viruses.

7. Provision of advisory services to national centers engaged in research on foot-and-mouth disease.

II. TRAINING AND INFORMATION

1. Organization and conduct of international seminars.

2. Organization and conduct of national courses.

3. Participation of the staff of the Research and Field Advisory Services at seminars, courses, and meetings organized by other national or international institutions.

4. Award of fellowships for individual training at the Center or in other institutions.

5. Provision of available information on the epizootiology of vesicular diseases.

6. Provision of library services and up-to-date bibliographies on specific aspects of these diseases.

## III. FIELD ADVISORY SERVICES

1. Promotion and assistance in the planning of national foot-and-mouth disease programs.

2. Studies of technical and administrative methods for the control of foot-and-mouth disease through demonstration pilot areas.

3. Advisory services to the countries in the preparation of loan applications for foot-and-mouth disease control campaigns to be submitted to the international lending agencies.

4. Promotion of intercountry coordination through bilateral, regional, or multilateral meetings and agreements for the control and prevention of foot-and-mouth disease.

5. Advisory services on the organization and conduct of preventive programs in disease-free countries.

6. Field studies on the most effective preventive and control methods, and evaluation of national campaigns.

7. Establishment of a Continent-wide vesicular disease surveillance system, including the collection, compilation, analysis, publication, and distribution of epidemiological data.

In the annual budgets, the following percentages will be assigned to each of the above-mentioned activities in accordance with the administrative structure of the Center:

| | Research, Diagnosis, Reference | Training | Field Advisory Services |
|---|---|---|---|
| 1973 | 50.2% | 8.7% | 23.2% |
| 1974 | 52.4% | 8.2% | 22.4% |
| 1975 | 52.1% | 9.1% | 21.2% |

Distribution of the funds in accordance with the program of direct services to the governments is shown in Table I.

## ADMINISTRATIVE AND TECHNICAL ORGANIZATION OF THE CENTER

The structure of the Center comprises the Office of the Director, three departments (Research, Diagnosis and Reference, Training and Information Activities, and Field Advisory Services), and Administrative Services, as may be seen in the organizational chart attached.

The research and diagnosis activities are the responsibility of the laboratories at the Headquarters of the Center, which have the following sections: Diagnosis and Reference, Inactivated Vaccines, Modified Live Virus Vaccines, Virus Survival, and General Research. Some research activities are carried out jointly with the countries.

The Training Department is responsible for fellowships, the organization of training courses and scientific meetings, the library, and the publication and information services.

The activities of the Field Advisory Services Department are carried out by its staff, who work out of Headquarters in Rio de Janeiro, and through advisors stationed in the various countries. This Department provides advice on epidemiology, administrative methods, statistics, and planning and evaluation of foot-and-mouth disease control campaigns.

The Administrative Services Department comprises the following sections: Finance, Personnel, Supplies, and General Services.

Every two years the Scientific Advisory Committee of the Center, composed of internationally acclaimed scientists, meets to review the various projects of the Center.

## ACTIVITIES, METHODS, RESULTS

### I. OFFICE OF THE DIRECTOR

There will be no changes in the Office of the Director in 1973, 1974, and 1975. The international staff, as well as local auxiliary and secretarial staff, will be maintained at their present level and number.

### II. RESEARCH ACTIVITIES

#### 1. Diagnosis and Reference

The Center serves as the reference laboratory for the Americas for the classification of foot-and-mouth disease and vesicular stomatitis viruses. Since its establishment it has examined about 12,000 vesicular disease specimens from 19 countries in the Continent. During 1972, a total of 934 specimens from the affected area were typed and subtyped. Of those, 535 specimens were from foot-and-mouth disease field cases (Table II), including an additional 262 horse sera from the Brazilian state of Minas Gerais. The study of these sera permitted the diagnosis in that state for the first time of vesicular stomatitis resulting from virus subtype $Indiana_3$.

Diagnosis and reference are expected to be of increasing importance in coming years, inasmuch as the countries are stepping up their national foot-and-mouth disease control campaigns. The strengthening of these programs demands a more complete study of the serological and immunological results of the virus strains, in order to include the most adequate strains in vaccine production. In 1972 such assistance was given to Colombia, Brazil, Chile, and Paraguay.

The Center supplies reference sera and viruses to national diagnosis and control laboratories. During 1972 all the countries in the affected area received various biological materials for diagnosis, research, and production and testing of vaccines, including sufficient hyperimmune guinea pig sera for 600,000 complement-fixation tests. In view of the increase in diagnostic activities in the countries, it is expected that it will be necessary to substantially increase this amount in the years ahead.

During 1972, 1,484 specimens were examined in the course of the different research projects of the Center.

With reference to typing and subtyping of vesicular stomatitis virus, during 1972 the Center examined 129 specimens from the countries of Central America and Panama, of which 84 were identified as vesicular stomatitis virus. An additional 150 cattle, sheep, and swine sera from Curação were studied for presence of antibodies against foot-and-mouth disease or vesicular stomatitis viruses. The results are shown in Table III. The marked and steady increase of samples received at the Center during 1972 from Central America and Panama is expected to continue in 1973 and the following years, since the countries of that area are in the process of improving their surveillance of vesicular diseases. It must be emphasized that the immediate examination of all specimens from those areas is essential in order to permit the prompt adoption of the necessary control measures. The serious economic consequences that could result from an outbreak of foot-and-mouth disease in those countries emphasize the urgency of early diagnosis.

The following percentages of the research activities budget will be allocated to the work of the Diagnosis and Reference Laboratory:

| | |
|---|---|
| 1973 | 18.6% |
| 1974 | 18.4% |
| 1975 | 18.9% |

2. Inactivated Vaccines

Any improvement in the duration of immunity provided by inactivated vaccines, which make up approximately 96 to 98% of all vaccines administered in South America, should be favorably reflected in the reduction of campaign costs. For this reason, the Center is continuing to investigate new inactivators that should provide better assurance of the safety of the vaccines produced without affecting their immunologic qualities, and new adjuvants

that should make it possible to obtain more potent vaccines providing lasting immunity. This has been the basis for experiments with an inactivated vaccine with oil adjuvant. These were undertaken in collaboration with the Plum Island Animal Disease Research Laboratory of the Department of Agriculture of the United States of America.

The laboratory results obtained are very promising and point to the possibility of only two annual vaccinations in cattle. Primary vaccinates showed a good level of protection six months after vaccination, and the test performed 12 months after revaccination showed good protection. Field studies were undertaken with this type of vaccine, in collaboration with the Ministry of Agriculture of Brazil. During 1973, using the new facilities for industrial production, the necessary studies will be undertaken to put the production of this type of vaccine on an industrial scale.

With a view to dealing promptly with requests from countries, the Center maintains a strain collection containing specimens of the most common viruses in South America adapted to the Frenkel method, newborn rabbits, and BHK-21 cell lines.

Research on inactivated vaccines produced with virus from newborn rabbits is in the final stage.

The studies performed on vaccine control methods permitted presentation to the countries of a guide where applicable alternatives to the conditions in South America are considered.

Studies on inactivated vaccines will be assigned the following percentages within the budget for research activities:

| | |
|---|---|
| 1973 | 31.3% |
| 1974 | 31.4% |
| 1975 | 32.0% |

3. Modified Live Virus Vaccines

Modified live virus vaccines have been one of the major contributions of the Center to the control of foot-and-mouth disease. Over the years, the Center has acquired great experience in this field. During 1972, research was continued on various clones of modified foot-and-mouth disease virus, and a start was made on the attenuation of various strains by chemical processes, cold mutants, and the selection of plaques. The markers of various virus clones were studied, as was the stability of the genetic characteristics of some modified viruses.

Laboratory studies with cloned specimens of $C_3$ Resende, $A_{24}$ Cruzeiro, $A_{27}$ and $O_1$ Campos, Cura and Urubamba viruses, some of them performed in collaboration with the Ministry of Agriculture of Venezuela, demonstrated very low pathogenicity and a good immunizing capacity.

Problems relating to the persistence of modified live virus in laboratory animals were studied for the purpose of clarifying certain aspects relating to the multiplication and the persistence of the virus in different organs.

Modified live virus vaccine studies have been assigned the following percentages within the budget for research activities:

| | |
|---|---|
| 1973 | 22.7% |
| 1974 | 22.6% |
| 1975 | 20.7% |

4. Carriers

The problem of the survival of foot-and-mouth disease virus in carriers affects international trade in livestock and some of their products. The Center has been studying this problem and has given special attention to the development of new methods that will make the detection of animal carriers more feasible and economical. Progress in this field seems to indicate that these new methods may be applied in 1973.

Advisory services were continued to the governments of South American countries, in particular to Brazil, Colombia, and Venezuela, to help in solving problems related to trade exchange.

Studies on carriers will be assigned the following percentages within the budget for research activities:

| | |
|---|---|
| 1973 | 13.5% |
| 1974 | 13.7% |
| 1975 | 14.1% |

5. Other Research Studies

In addition to the research described above, the Center is investigating the susceptibility of various cell lines to foot-and-mouth disease virus, and to culture media favoring the multiplication of foot-and-mouth disease virus in vitro, endeavoring to obtain more economical sources for antigen production. A microtest method for virus titration or antibody determination has also been investigated, which would be useful both for routine work in the laboratory and large field work studies. Studies on immunological methods for the detection of antibodies and techniques for obtaining plaques in tissue cultures, as well as on secretory antibodies and non-specific inhibitors, have been continued.

The following percentages will be assigned to these research activities:

| | |
|---|---|
| 1973 | 13.9% |
| 1974 | 13.9% |
| 1975 | 14.3% |

To achieve the research targets set, it is necessary to make provision in the budgets for 1974 and 1975 for the following international and local staff:

| | 1973 | 1974 | 1975 |
|---|---|---|---|
| International Staff | | | |
| Chief of Laboratory Services | 1 | 1 | 1 |
| Virologist | 1 | 1 | 1 |
| Serologist | 2 | 2 | 2 |
| Research Officer | 3 | 3 | 3 |
| Biochemist | 1 | 1 | 1 |
| Immunologist | 1 | 1 | 1 |
| Research Assistant | 2 | 2 | 2 |
| Local Staff | 116 | 117 | 121 |
| Total | 127 | 128 | 132 |

There will be no change in the international staff posts in 1974 and 1975 in relation to 1973. In 1974 the local staff will be increased by one laboratory assistant, and in 1975 by one senior laboratory technician and three laboratory assistants. These personnel are needed due to the increasing workload in the laboratories, especially in the vaccine control and reference sections.

Supplies and Equipment. In 1974 there will be a slight increase in this item for replacing some heavy equipment. The slight increase in 1975 is to allow for increased costs.

Contractual Services. In 1974 the only change in this item will be to allow for the services needed for the equipment of the pilot plant.

## III. TRAINING

The Center provides training for professional personnel of the countries by means of seminars and courses and by individual fellowship training.

Since its establishment, the Center has conducted 31 courses or international seminars, and 752 veterinarians from 36 different countries have attended them or received individual training in various aspects of research and in the control and prevention of foot-and-mouth disease. The Center provides instruction and practical training in laboratory techniques and methods for vesicular diseases and in the production and control of vaccines; in epidemiology, statistics, and animal health planning; and, in coordination with the governmental services of certain countries, in the planning and administration of control campaigns and preventive programs.

From the beginning of 1971, the Epidemiological Report on Foot-and-Mouth Disease and Vesicular Stomatitis has been published every two weeks.

The Boletín of the Center is published quarterly. In addition to including bibliographical information, it has a section devoted to foot-and-mouth disease control or prevention activities, and a section devoted to the publication of scientific articles and communications.

Modern reproduction and printing equipment makes possible the preparation of all documents and publications and the printing of all forms needed for internal use. The press run of these is estimated at 2,500 originals and more than 200,000 impressions per year.

A national course was given in Asunción, Paraguay in 1972 for veterinarians of the National Service for the Control of Foot-and-Mouth Disease. The technical staff of the Center lectured at this course and also at two others, in Brasília and Goiania (Brazil), and at the II Course on Animal Health Planning, sponsored by PAHO, which took place on the premises of the Pan American Zoonoses Center in Ramos Mejía (Argentina).

Through an agreement signed with the University of São Paulo (Brazil) two courses on epidemiology applied to foot-and-mouth disease control were held, attended by professionals involved in such programs in Brazil.

The training unit in Pôrto Alegre (Rio Grande do Sul) constitutes an important step in training. Two courses of six weeks each were held with field veterinarians in attendance. Similar courses are planned for 1973.

A Seminar on Diagnosis of Vesicular Diseases took place at the Center in July 1972. This was the second seminar of its kind and brought together the chiefs of the national laboratories of the countries in the foot-and-mouth disease affected area. The first seminar was held in 1969, and a third is planned for 1975. These meetings, which take place periodically, provide knowledge of the latest advancements in the field of diagnosis and also maintain a uniformity of techniques and methods in use in the different countries in relation to the diagnosis of vesicular diseases.

In October 1972 a seminar based on a field exercise of a simulated vesicular disease outbreak took place in Guatemala, in which 10 veterinarians from six countries of Central America participated. We believe such exercises to be of great importance in keeping the national services of the countries in the disease-free area alert and prepared for any unexpected event. Experience obtained up to now shows the importance of such practices and the need to carry them out periodically.

With regard to individual training during 1972, 18 PAHO fellowships, totalling 55.5 fellowship-months, were granted to professional personnel from eight countries, and fellowships for another 23 professional personnel were provided from other sources.

The construction of a pilot plant, for industrial production of vaccines and the enlargement of the mouse colony, was completed in September 1972. This unit will start functioning in early 1973, providing training to professionals of different countries in the production of vaccines using the Frenkel method, newborn rabbits, and cells in monolayers or suspended cultures in the production of antigens. Demonstrations on the quality control of these vaccines will also be given.

A course on statistics was held at the Center in November-December 1972 for specialists of the foot-and-mouth disease services from various Brazilian states. This course served as an initial step in the implementation of a uniform system of data collection and processing for all the state services participating in foot-and-mouth disease control in the entire country.

Two field exercises for local veterinarians on foot-and-mouth disease prevention are planned for 1973, one in Panama and one in Guatemala.

For 1973 an international seminar dealing with vaccine production methods is planned at the Center. The new facilities of the vaccine production laboratory will be fully functioning. Ten veterinarians from 10 South American countries will participate in this seminar. Another seminar will take place in Bogotá (Colombia) on the subject of organization of control programs.

Provision has been made for 1973 for 24 fellowships, totaling 72 fellowship-months, for 17 countries, including countries in both the disease free and affected areas.

A seminar on statistics with the participation of 11 professionals from 10 countries will also take place in Brazil in 1974.

In 1974 and 1975, national courses will be given in the foot-and-mouth disease affected area, for those countries where the status of their respective campaigns indicates its requirement.

Provision has been made for 1974 for 24 fellowships for personnel from 17 countries, totaling 72 fellowship-months.

Three international seminars are planned for 1975: one at the Center, dealing with diagnosis of vesicular diseases, with 11 participants from 10 South American countries; one in Buenos Aires, Argentina, on evaluation of campaigns; and one in Nicaragua on prevention of exotic diseases, with participants from the area free of foot-and-mouth disease.

Provision is made in 1975 for 24 fellowships for veterinarians from 10 countries, totaling 72 fellowship-months.

To achieve the targets of the training program, it is estimated that the following staff will be necessary:

International Staff. The budget for 1973 includes an international post for a translator, in view of the need to expand the program of publications, teaching material, visual aids, and information.

Local Staff. There will be an increase of one clerk in 1974 and one draftsman in 1975 for the preparation of visual aids.

The following table shows the personnel required for the training activities:

| | 1973 | 1974 | 1975 |
|---|---|---|---|
| International Staff | | | |
| Chief, Training Activities | 1 | 1 | 1 |
| Publications Officer | 1 | 1 | 1 |
| Translator | 1 | 1 | 1 |
| Local Personnel | | | |
| Librarian | 1 | 1 | 1 |
| Secretary | 2 | 2 | 2 |
| Draftsman | - | - | 1 |
| Clerk | 1 | 2 | 2 |
| Messenger | 1 | 1 | 1 |
| Total | 8 | 9 | 10 |

## IV. FIELD ADVISORY SERVICES

### 1. Countries in the Disease Free Area

The progress in the construction of the Pan American Highway, which will connect Colombia, a foot-and-mouth disease affected country, with Panama, a foot-and-mouth disease free country (like the rest of the Central and North America), received preferential attention from the Center. Its professional staff participated actively at the international meetings and in studies for preventive programs for the bordering regions of both countries, under an agreement between the governments which are directly interested in the problem. For that purpose alternative programs were prepared for evaluation and discussion in the near future.

The Center's consultants stationed in Central America and the Caribbean area visited the area involved to collect basic animal health data, including the availability of veterinary manpower, in order to provide advice and training at seminars and courses and to promote, in general, official activities for the prevention of foot-and-mouth disease and other animal diseases exotic to the area.

The consultant stationed in Panama gave special consideration to the national vesicular diseases epidemiological surveillance program and to the preventive program of the Government in the Darién region on the Colombian border. The International Regional Plant and Animal Health Organization (OIRSA) and the Government of the United States of America also collaborated in these activities.

The Zone I consultant collaborated in the control and eradication of vesicular outbreaks which occurred in cattle imported by Curaçao and Aruba. In these cases the Center's diagnosis laboratory gave its assistance, and, as a result, an epidemiological surveillance program was set up with the direct collaboration of the Center.

Members of the Center's staff conducted 28 visits to nine countries in the foot-and-mouth disease free area, totaling 158 days of consultation during 1972.

2. Countries in the Affected Area

All the countries affected by foot-and-mouth disease received the constant attention of area consultants stationed in Chile, Colombia, Ecuador, Paraguay, Peru, Venezuela, and the State of Rio Grande do Sul (Brazil), and from the Center. Technical assistance was directed toward structuring of disease control on a continental scale in South America by assistance in preparation of plans, as in the case of Bolivia, for expanding and consolidating activities in Brazil, Chile, Paraguay, and Uruguay; organizing programs in Colombia, Ecuador, and Peru; or restructuring programs, as, for instance, in Argentina and Venezuela.

Priority was given to the development of a continental system of animal vesicular diseases surveillance through the Center's Epidemiological Report, published semi-monthly, and by developing national notification and animal health statistics services. Such a service was implemented in the Brazilian state of Rio Grande do Sul, and it is starting in six other states included in the National Foot-and-Mouth Disease Control Program. In Paraguay the organization of a similar service is under way.

As a result of the respective promotion and preparation of human manpower, chiefly through the course in Animal Health Planning which takes place in the Pan American Zoonoses Center, Argentina, several countries have added specific foot-and-mouth disease planning and evaluation units or services, to be expanded in the future to the entire animal health sector. Brazil, Chile, Colombia, and Paraguay took part in these activities. The indispensable international coordination aspect received a strong impulse from the Center, in its role of coordinator between the countries. Meetings between Colombia and Ecuador, and between Brazil, Guyana, and Venezuela continued under the sponsorship of the Center, as well as the first meetings of Paraguay with Argentina and Brazil.

In 1972 production of foot-and-mouth disease vaccine, its quality control, and application progressed continuously. Argentina, Brazil, Paraguay, and Uruguay are in a position to be able to produce the entire quantity of vaccine required for their respective national foot-and-mouth disease control programs, as well as a surplus for export. Colombia, Ecuador, Peru, and Venezuela are able to satisfy their actual requirements, but they have to increase the facilities of their laboratories to meet predicted future requirements for the development of their respective programs. Bolivia and Chile have to import vaccine to satisfy their actual demand. However, all the countries have projects of vaccine self-supply, some of which are under way. Vaccine quality control is complete in Chile, Paraguay, and Uruguay; partial in Argentina, Brazil, and Venezuela; and in the organizational stage in Colombia and Ecuador. Nevertheless, this vitally important aspect shows a significant improvement. Almost half of the cattle in the affected area, estimated at 190 million head, are systematically vaccinated.

During 1972 foot-and-mouth disease was present in all the South American countries with the exception of Guyana, French Guiana, and Surinam. The most notable outbreaks occurred in the border areas of the Argentine provinces of Córdoba and Santa Fe, the eastern part of Bolivia, the southern states of Brazil, middle and southern Colombia, most of the coast and sierra regions of Ecuador, the extreme north and southeast of Peru, and western Venezuela. Chile, Paraguay, and Uruguay registered a very low incidence of the disease, proof of good control programs.

In addition to the continuous technical assistance given by the Center's consultants to the countries where they are stationed, members of the Center's staff carried out during 1972, 158 visits to 10 countries in the affected area, totaling 591 days of consultation.

To achieve the above-mentioned targets, the following staff will be necessary:

| | 1973 | 1974 | 1975 |
|---|---|---|---|
| International Staff | | | |
| Chief of Services | 1 | 1 | 1 |
| Epidemiologist | 1 | 1 | 1 |
| Area consultants | 6 | 6 | 6 |
| State consultant | 1 | 1 | 1 |
| Headquarters consultants | | | |
| - in Biostatistics | 2 | 2 | 2 |
| - in Administrative Methods | 1 | 1 | 1 |
| - in Vaccines Production and Control | 1 | 1 | 1 |
| Local Staff | | | |
| Secretaries | 2 | 2 | 2 |
| Clerks | 2 | 2 | 2 |
| Programer | - | - | 1 |
| Total | 17 | 17 | 18 |

The Field Advisory Services have assigned the following percentages of the budget to these activities:

| | 1973 | 1974 | 1975 |
|---|---|---|---|
| Headquarters Services | 45.9% | 46.9% | 52.5% |
| Area Consultants | 54.1% | 53.1% | 47.5% |

V. ADMINISTRATIVE SERVICES

The only change considered for the three years is the addition of one typist in the Finance Section in 1973.

VI. COMMON SERVICES

Provision is made for slight increases for supplies and equipment in 1974 and 1975 to cover possible price increases in products and equipment and additional maintenance service that will be needed for the new laboratories and animal quarters, and for the replacement of five vehicles in 1974 and one car and one bus in 1975.

VII. ORGANIZATION OF MEETINGS

There will be no substantial changes in the cost of the meetings of the Technical Council in 1973, 1974, and 1975. Funds for the Scientific Advisory Committee were not considered for 1974.

TABLE I

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET IN ACCORDANCE WITH THE PROGRAM OF DIRECT SERVICES TO GOVERNMENTS

1973- 1974 - 1975

| Year | Laboratory Services (a) | | Field Services for prevention and control programs (b) | | Training (c) | | Research (d) | | Administration (e) | | Total Budget | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Amount | % | Amount | % | Amount | % | Amount | % | Amount | % | Amount | % |
| 1973 | 408,022 | 24.0 | 470,925 | 27.7 | 280,515 | 16.5 | 481,126 | 28.3 | 59,503 | 3.5 | 1,700,091 | 100.0 |
| 1974 | 449,060 | 24.0 | 518,290 | 27.7 | 308,729 | 16.5 | 529,517 | 28.3 | 65,488 | 3.5 | 1,871,084 | 100.0 |
| 1975 | 505,966 | 24.6 | 557,051 | 27.1 | 347,852 | 16.9 | 569,700 | 27.8 | 73,787 | 3.6 | 2,054,356 | 100.0 |

(a) Includes the item for diagnostic and reference laboratories and costs of laboratory consultants providing direct services to Governments and the cost of supplies sent to the countries.

(b) In addition to the budget for field advisory services, includes costs of personnel and administrative staff of field studies on vaccines, epidemiology of the disease, carriers, etc., carried out jointly by the field advisory and laboratory departments. Also includes cost of meetings.

(c) These funds include the budget of the Training Department (personnel, fellowships, national and international courses, short-term consultants, supplies and equipment, and publications) and the cost of personnel, supplies, and other administrative costs for other departments involved in training.

(d) Includes the cost of research undertaken by headquarters laboratories in coordination with the institutes or laboratories of some countries. Includes costs of personnel, supplies and equipment, and administrative costs.

(e) Funds intended for the general administration costs of the Center - finances, personnel, supplies and general services.

TABLE II

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER.- FIELD SPECIMENS FROM

COUNTRIES IN FOOT-AND-MOUTH DISEASE AFFECTED AREA EXAMINED IN 1972

| Country | Foot-and-Mouth Disease Virus Subtypes | | | | | | | Negative | Total |
|---|---|---|---|---|---|---|---|---|---|
| | $O_1$ | A-Vallée | $A_{24}$ | $A_{27}$ | C Waldmann | $C_3$ | $C_5$ | | |
| Argentina | 11 | - | 23 | - | - | - | 9 | 1 | 44 |
| Bolivia | 9 | - | 6 | - | - | - | - | 2 | 17 |
| Brazil | 52 | 24 | 81 | - | 81 | 79 | - | 124 | 441 |
| Colombia | - | 1 | - | 4 | - | - | - | - | 5 |
| Chile | 2 | - | 2+ | - | - | - | - | 1 | 5 |
| Ecuador | 4 | - | - | - | - | - | - | - | 4 |
| Peru | - | - | 3 | 6 | - | - | - | 1 | 10 |
| Uruguay | 5 | - | 2 | - | - | - | - | - | 7 |
| Venezuela | 2 | - | - | - | - | - | - | - | 2 |
| Total | 85 | 25 | 117 | 10 | 81 | 79 | 9 | 129 | 535 |

+ Imported cattle, in quarantine.

TABLE III

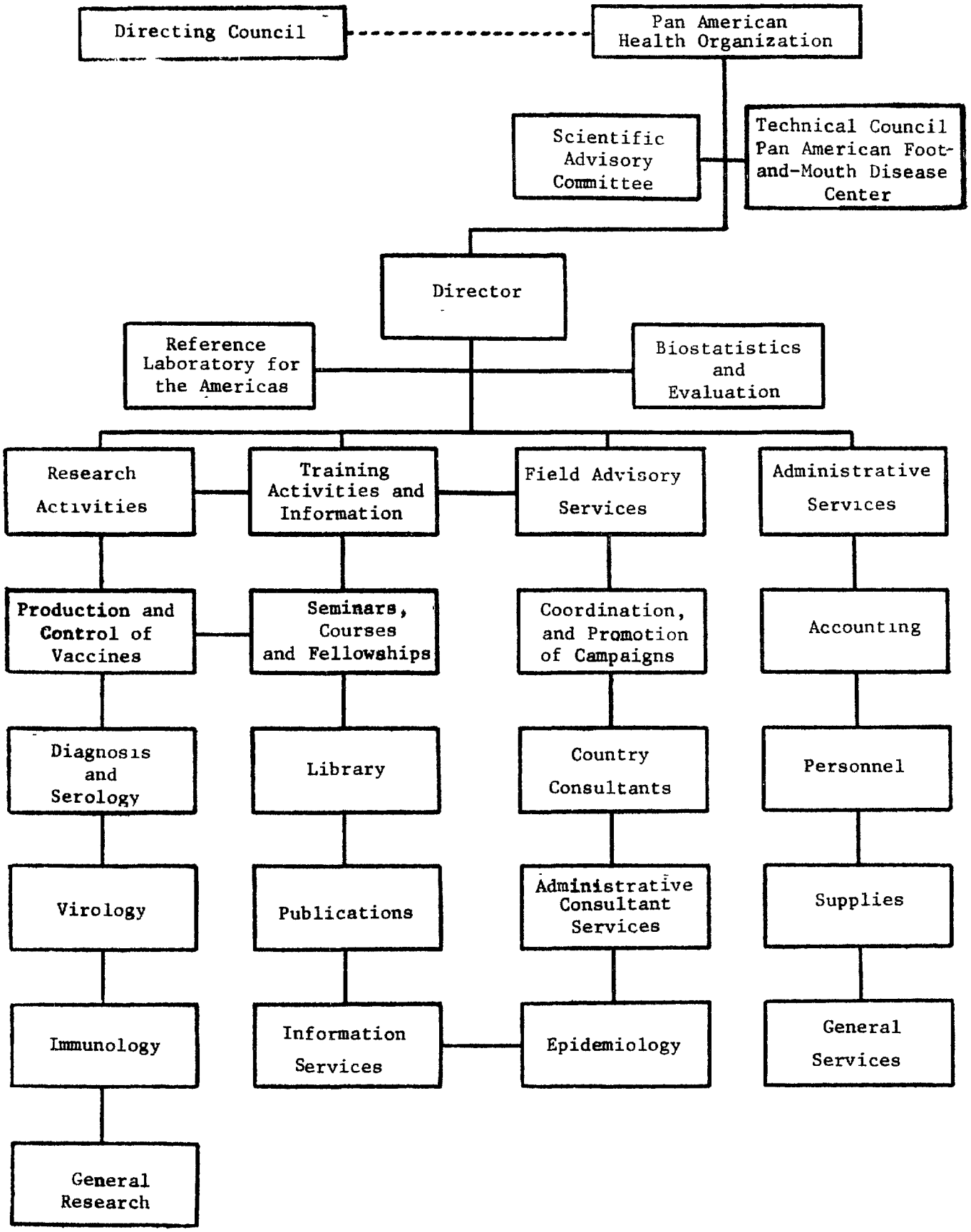
PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER-FIELD SPECIMENS FROM COUNTRIES IN FOOT-AND-MOUTH DISEASE-FREE AREA EXAMINED IN 1972.

| Country | Vesicular Stomatitis | | Negative | Total |
|---|---|---|---|---|
| | New Jersey | Indiana | | |
| Belize | 1 | - | 1 | 2 |
| Costa Rica | 19 | 10 | 10 | 39 |
| Curação | 4+ | - | 3 | 7++ |
| El Salvador | 4 | 5 | 1 | 10 |
| Guatemala | 13 | 4 | 16 | 33 |
| Honduras | 12 | 4 | 3 | 19 |
| Jamaica | - | - | 1 | 1 |
| Nicaragua | 8 | - | 7 | 15 |
| Panama | - | - | 3 | 3 |
| Total | 61 | 23 | 45 | 129 |

\+ Cattle imported for slaughter, in slaughterhouse.

++ Additional 150 sera of native normal cattle, sheep and swine, all presented negative results.

ORGANIZATIONAL CHART OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER



PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1973

| | Office of Director | Research | Training | Field Services | Administration | Common Services | Meetings | Total | % of Total |
|---|---|---|---|---|---|---|---|---|---|
| Salaries and allowances | 84,495 | 718,855 | 84,307 | 353,400 | 77,221 | - | - | 1,318,278 | 77.5 |
| Duty travel | 4,971 | 17,423 | 3,427 | 35,869 | - | - | 39,000 | 100,690 | 5.9 |
| Fellowships | - | - | 31,643 | - | - | - | - | 31,643 | 1.9 |
| Short-term consultants | - | - | 3,324 | - | - | - | 2,000 | 5,324 | 0.3 |
| Supplies and equipment | - | 110,898 | 11,600 | 5,500 | 2,000 | 32,548 | - | 162,546 | 9.6 |
| Contractual services | - | 6,100 | 9,300 | - | 1,500 | 52,210 | 9,000 | 78,110 | 4.6 |
| Publications | - | - | 3,500 | - | - | - | - | 3,500 | 0.2 |
| Total | 89,466 | 853,276 | 147,101 | 394,769 | 80,721 | 84,758 | 50,000 | 1,700,091 | |
| % of Total | 5.3 | 50.2 | 8.7 | 23.2 | 4.7 | 5.0 | 2.9 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1973

| | | |
|---|---|---|
| Office of the Director | | 89.466 |
| Salaries and allowances | | 84,495 |
| Professional staff (2) | | |
| Director, P.6<br>Administrative officer, P.4 | | |
| Local Staff (3) | | |
| Duty travel | | 4,971 |
| Research activities | | 853,276 |
| Salaries and allowances | | 718,855 |
| Professional staff (11) | | |
| Chief of Laboratory, P.5<br>Virologist, P.4<br>Serologist, P.4<br>Research officer, P.4<br>Biochemist, P.4<br>Immunologist, P.4<br>Research officer, P.4<br>Research officer, P.4<br>Serologist, P.4<br>Research assistant, P.1<br>Research assistant, P.1 | | |
| Local staff (115) | | |
| Duty travel | | 17,423 |
| Supplies and equipment | | 110,898 |
| Supplies | 73,298 | |
| Equipment | 37,600 | |
| Contractual services | | 6,100 |

1973 BUDGET (continued)

| | | | | |
|---|---|---|---|---|
| Training activities | | | | 147,101 |
| Salaries and allowances | | | | 84,307 |
| Professional staff (3) | | | | |
| Chief of training activities, P.4<br>Technical translator, P.2<br>Technical publications officer, P.2 | | | | |
| Local staff (5) | | | | |
| Duty travel | | | | 3,427 |
| Short-term consultants | | | | 3,324 |
| Fellowships | | | | 31,643 |
| | Period | Stipends | Travel | |
| Residents | 72 months | 11,904 | 11,086 | |
| 24 fellows from: Argentina (1), Bolivia (2), Brazil (2), Chile (1), Colombia (2), Cuba (1), Dominican Republic (1), Ecuador (2), Guatemala (1), Haiti (1), Jamaica (1), Panama (1), Paraguay (2), Peru (2), Uruguay (1), Venezuela (2), United States of America (1) | | | | |
| Seminars | | | | |
| Seminar in Colombia | 21 days | 5,775 | 2,878 | |
| 11 fellows from: Argentina, Bolivia, Brazil, Chile, Colombia(2), Ecuador, Paraguay, Uruguay, Venezuela, Peru | | | | |
| Publications | | | | 3,500 |

1973 BUDGET (continued)

| | | |
|---|---|---|
| Supplies and equipment | | 11,600 |
| Supplies | 8,800 | |
| Equipment | 2,800 | |
| Contractual services | | 9,300 |
| Advisory services | | 394,769 |
| Salaries and allowances | | 353,400 |
| Professional staff (13) | | |
| Chief of field services, P.5 | | |
| Veterinarian, P.4 | | |
| 6 country consultants, P.4 | | |
| Administrative consultant, P.4 | | |
| Biostatistician, P.4 | | |
| Vaccine consultant, P.4 | | |
| Statistician, P.4 | | |
| State consultant, P.2 | | |
| Local staff (5) | | |
| Duty travel | | 35,869 |
| Supplies and equipment | | 5,500 |
| Supplies | 1,500 | |
| Equipment | 4,000 | |
| Administrative services | | 80,721 |
| Salaries and allowances | | 77,221 |
| Local staff (11) | | |
| Supplies and equipment | | 2,000 |
| Contractual services | | 1,500 |
| Common services | | 84,758 |
| Supplies and equipment | | 32,548 |
| Supplies | 28,848 | |
| Equipment | 3,700 | |

1973 BUDGET (continued)

| | | |
|---|---|---|
| Contractual services | | 52,210 |
| Meetings | | 50,000 |
| Technical Council Meeting | | 34,000 |
| Duty travel | 13,000 | |
| Per diem | 10,000 | |
| Short-term consultants | 2,000 | |
| Interpreters | 6,000 | |
| Local transportation, printing and general services | 1,500 | |
| Secretariat personnel | 1,500 | |
| Scientific Advisory Committee | | 16,000 |
| Duty travel | 10,000 | |
| Per diem | 6,000 | |
| Total | | 1,700,091 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1973 BUDGET

RESEARCH ACTIVITIES

| | Diagnosis and Reference | Inactivated Vaccine | Modified Live Virus Vaccine | Virus Survival | General Research | Total | % of Total |
|---|---|---|---|---|---|---|---|
| Salaries and allowances | | | | | | | |
| International staff | 57,234 | 57,258 | 66,051 | 27,041 | 29,411 | 236,995 | 27.8 |
| Local staff | 84,326 | 144,028 | 103,069 | 77,194 | 73,243 | 481,860 | 56.5 |
| Duty Travel | 2,683 | 4,013 | 6,011 | 2,608 | 2,108 | 17,423 | 2.0 |
| Supplies and equipment | 13,053 | 60,462 | 17,533 | 7,540 | 12,310 | 110,898 | 13.0 |
| Contractual services | 1,220 | 1,220 | 1,220 | 1,220 | 1,220 | 6,100 | 0.7 |
| Total | 158,516 | 266,981 | 193,884 | 115,603 | 118,292 | 853,276 | |
| % of Total | 18.6 | 31.3 | 22.7 | 13.5 | 13.9 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1973 BUDGET

FIELD ADVISORY SERVICES

| | Regional Advisors | Headquarters Advisors | Total | % of Total |
|---|---|---|---|---|
| Salaries and allowances | | | | |
| International staff | 198,543 | 133,399 | 331,942 | 84.1 |
| Local staff | - | 21,458 | 21,458 | 5.4 |
| Duty travel | 14,897 | 20,972 | 35,869 | 9.2 |
| Supplies and equipment | - | 5,500 | 5,500 | 1.3 |
| Total | 213,440 | 181,329 | 394,769 | |
| % of Total | 54.1 | 45.9 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1974

| | Office of Director | Research | Training | Field Services | Adminis-tration | Common Services | Meetings | Total | % of Total |
|---|---|---|---|---|---|---|---|---|---|
| Salaries and allowances | 82,046 | 819,012 | 90,982 | 353,055 | 84,855 | - | - | 1,429,950 | 76.4 |
| Duty travel | 6,817 | 25,244 | 3,847 | 61,919 | - | - | 23,000 | 120,827 | 6.5 |
| Fellowships | - | - | 31,042 | - | - | - | - | 31,042 | 1.6 |
| Short-term consultants | - | - | 3,440 | - | - | - | 2,000 | 5,440 | 0.3 |
| Supplies and equipment | - | 126,775 | 11,480 | 4,350 | 2,200 | 45,500 | - | 190,305 | 10.2 |
| Contractual services | - | 6,850 | 9,670 | - | 1,650 | 62,500 | 9,000 | 89,670 | 4.8 |
| Publications | - | - | 3,850 | - | - | - | - | 3,850 | 0.2 |
| Total | 88,863 | 977,881 | 154,311 | 419,324 | 88,705 | 108,000 | 34,000 | 1,871,084 | |
| % of Total | 4.7 | 52.4 | 8.2 | 22.4 | 4.7 | 5.8 | 1.8 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1974

| | | |
|---|---|---|
| Office of the Director | | 88,863 |
| Salaries and allowances | | 82,046 |
| Professional staff (2) | | |
| Director, P.6<br>Administrative officer, P.4 | | |
| Local staff (3) | | |
| Duty travel | | 6,817 |
| Research activities | | 977,881 |
| Salaries and allowances | | 819,012 |
| Professional staff (11) | | |
| Chief of Laboratory, P.5<br>Virologist, P.4<br>Serologist, P.4<br>Research Officer, P.4<br>Biochemist, P.4<br>Immunologist, P.4<br>Research Officer, P.4<br>Research Officer, P.4<br>Serologist, P.4<br>Research Assistant, P.1<br>Research Assistant, P.1 | | |
| Local staff (116) | | |
| Duty travel | | 25,244 |
| Supplies and equipment | | 126,775 |
| Supplies | 86,775 | |
| Equipment | 40,000 | |
| Contractual services | | 6,850 |

1974 BUDGET (continued)

| | | | | |
|---|---|---|---|---|
| Training activities | | | | 154,311 |
| Salaries and allowances | | | | 90,982 |
| Professional staff (3) | | | | |
| Chief of training activities, P.4<br>Technical translator, P.2<br>Technical publications officer, P.2 | | | | |
| Local staff (6) | | | | |
| Duty travel | | | | 3,847 |
| Short-term consultants | | | | 3,440 |
| Fellowships | | | | 31,042 |
| | Period | Stipends | Travel | |
| Residents | 72 months | 14,640 | 11,086 | |

24 fellows from: Argentina (1), Bolivia (2), Brazil (2), Chile (1), Colombia (2), Cuba (1), Dominican Republic (1), Ecuador (2), Guatemala (1), Haiti (1), Jamaica (1), Panama (1), Paraguay (2), Peru (2), Uruguay (1), Venezuela (2), United States of America (1)

Seminars

| | | | |
|---|---|---|---|
| Seminar in Rio de Janeiro, Brazil | 21 days | 1,760 | 3,556 |

11 fellows from: Argentina (1), Bolivia (1), Brazil (2), Chile (1), Colombia (1), Ecuador (1), Paraguay (1), Peru (1), Uruguay (1), Venezuela (1)

1974 BUDGET (continued)

| | | |
|---|---|---|
| Publications | | 3,850 |
| Supplies and equipment | | 11,480 |
| Supplies | 9,680 | |
| Equipment | 1,800 | |
| Contractual services | | 9,670 |
| Advisory services | | 419,324 |
| Salaries and allowances | | 353,055 |
| Professional staff (13) | | |
| Chief of field services, P.5 | | |
| Veterinarian, P.4 | | |
| 6 country consultants, P.4 | | |
| Administrative consultant, P.4 | | |
| Biostatistician, P.4 | | |
| Vaccine consultant, P.4 | | |
| Statistician, P.4 | | |
| State consultant, P.2 | | |
| Local staff (5) | | |
| Duty travel | | 61,919 |
| Supplies and equipment | | 4,350 |
| Supplies | 1,650 | |
| Equipment | 2,700 | |
| Administrative services | | 88,705 |
| Salaries and allowances | | 84,855 |
| Local staff (11) | | |
| Supplies and equipment | | 2,200 |
| Contractual services | | 1,650 |

1974 BUDGET (continued)

| | | |
|---|---|---|
| Common services | | 108,000 |
| Supplies and equipment | | 45,500 |
| Supplies | 27,000 | |
| Equipment | 18,500 | |
| Contractual services | | 62,500 |
| Meetings | | 34,000 |
| Technical Council Meeting | | 34,000 |
| Duty travel | 13,000 | |
| Per diem | 10,000 | |
| Short-term consultants | 2,000 | |
| Interpreters | 6,000 | |
| Local transportation, printing and general services | 1,500 | |
| Secretariat personnel | 1,500 | |
| Total | | 1,871,084 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1974 BUDGET

RESEARCH ACTIVITIES

| | Diagnosis and Reference | Inactivated Vaccine | Modified Live Virus Vaccine | Virus Survival | General Research | Total | % of Total |
|---|---|---|---|---|---|---|---|
| Salaries and allowances | | | | | | | |
| International staff | 59,781 | 59,807 | 68,991 | 28,245 | 30,720 | 247,544 | 25.3 |
| Local staff | 100,007 | 170,812 | 122,237 | 91,549 | 86,863 | 571,468 | 58.4 |
| Duty travel | 3,888 | 5,814 | 8,709 | 3,779 | 3,054 | 25,244 | 2.6 |
| Supplies and equipment | 14,921 | 69,118 | 20,043 | 8,621 | 14,072 | 126,775 | 13.0 |
| Contractual services | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 6,850 | 0.7 |
| Total | 179,967 | 306,921 | 221,350 | 133,564 | 136,079 | 977,881 | |
| % of Total | 18.4 | 31.4 | 22.6 | 13.7 | 13.9 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1974 BUDGET

FIELD ADVISORY SERVICES

| | Regional Advisors | Headquarters Advisors | Total | % of Total |
|---|---|---|---|---|
| Salaries and allowances | | | | |
| International staff | 197,672 | 130,904 | 328,576 | 78.4 |
| Local staff | - | 24,479 | 24,479 | 5.8 |
| Duty Travel | 25,110 | 36,809 | 61,919 | 14.8 |
| Supplies and equipment | - | 4,350 | 4,350 | 1.0 |
| Total | 222,782 | 196,542 | 419,324 | |
| % of Total | 53.1 | 46.9 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1975

| | Office of Director | Research | Training | Field Services | Adminis-tration | Common Services | Meetings | Total | % of Total |
|---|---|---|---|---|---|---|---|---|---|
| Salaries and allowances | 91,923 | 902,025 | 103,217 | 366,962 | 94,511 | - | - | 1,558,638 | 75.8 |
| Duty travel | 6,817 | 25,244 | 3,847 | 66,138 | - | - | 39,000 | 141,046 | 6.9 |
| Fellowships | - | - | 51,682 | - | - | - | - | 51,682 | 2.5 |
| Short-term consultants | - | - | 3,440 | - | - | - | 2,000 | 5,440 | 0.3 |
| Supplies and equipment | - | 136,300 | 10,680 | 2,650 | 2,200 | 52,000 | - | 203,830 | 9.9 |
| Contractual services | - | 7,050 | 9,670 | - | 1,650 | 62,500 | 9,000 | 89,870 | 4.4 |
| Publications | - | - | 3,850 | - | - | - | - | 3,850 | 0.2 |
| Total | 98,740 | 1,070,619 | 186,386 | 435,750 | 98,361 | 114,500 | 50,000 | 2,054,356 | |
| % of Total | 4.8 | 52.1 | 9.1 | 21.2 | 4.8 | 5.6 | 2.4 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1975

| | | |
|---|---|---|
| Office of the Director | | 98,740 |
| Salaries and allowances | | 91,923 |
| Professional staff (2) | | |
| Director, P.6<br>Administrative officer, P.4 | | |
| Local staff (3) | | |
| Duty travel | | 6,817 |
| Research Activities | | 1,070,619 |
| Salaries and allowances | | 902,025 |
| Professional staff (11) | | |
| Chief of Laboratory, P.5<br>Virologist, P.4<br>Serologist, P.4<br>Research officer, P.4<br>Biochemist, P.4<br>Immunologist, P.4<br>Serologist, P.4<br>Research officer, P.4<br>Research officer, P.4 | | |
| Research assistant, P.1<br>Research assistant, P.1 | | |
| Local staff (120) | | |
| Duty travel | | 25,244 |
| Supplies and equipment | | 136,300 |
| Supplies | 91,300 | |
| Equipment | 45,000 | |
| Contractual services | | 7,050 |

1975 BUDGET (continued)

| | |
|---|---|
| Training activities | 186,386 |
| Salaries and allowances | 103,217 |
| Professional staff (3) | |
| Chief of training activities, P.4<br>Technical publications officer, P.2<br>Translator, P.2 | |
| Local staff (7) | |
| Duty travel | 3,847 |
| Short-term consultants | 3,440 |
| Fellowships | 51,682 |

| | Period | Stipends | Travel |
|---|---|---|---|
| Residents | 72 months | 18,300 | 11,215 |
| 24 fellows from: Argentina (1), Bolivia (2), Brazil (2), Chile (1), Colombia (2), Cuba (1), Dominican Republic (1), Ecuador (2), Guatemala (1), Haiti (1), Jamaica (1), Panama (1), Paraguay (2), Peru (2), Uruguay (1), Venezuela (2), United States of America (1) | | | |
| Seminars | | | |
| Seminar in Rio de Janeiro, Brazil | 21 days | 4,620 | 3,551 |
| 11 fellows from Argentina, Bolivia, Brazil (2), Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela | | | |

1975 BUDGET (continued)

| | Period | Stipends | Travel | |
|---|---|---|---|---|
| *Seminar in Argentina | 21 days | 4,620 | 2,330 | |
| 11 fellows from: Argentina (2), Bolivia, Brasil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela | | | | |
| Seminar in Nicaragua | 21 days | 4,536 | 2,510 | |
| 12 fellows from: Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Surinam | | | | |
| Publications | | | | 3,850 |
| Supplies and equipment | | | | 10,680 |
| Supplies | | | 9,680 | |
| Equipment | | | 1,000 | |
| Contractual services | | | | 9,670 |
| Advisory services | | | | 435,750 |
| Salaries and allowances | | | | 366,962 |
| Professional staff (13) | | | | |
| Chief of field services, P.5 | | | | |
| Veterinarian, P.4 | | | | |
| 6 country consultants, P.4 | | | | |
| Administrative consultant, P.4 | | | | |
| Biostatistician, P.4 | | | | |
| Vaccine consultant, P.4 | | | | |
| Statistician, P.4 | | | | |
| State consultant, P.2 | | | | |
| Local staff (6) | | | | |

1975 BUDGET (continued)

| | | |
|---|---|---|
| Duty travel | | 66,138 |
| Supplies and Equipment | | 2,650 |
| Supplies | 1,650 | |
| Equipment | 1,000 | |
| Administrative services | | 98,361 |
| Salaries and allowances | | 94,511 |
| Local staff (11) | | |
| Supplies and equipment | | 2,200 |
| Contractual services | | 1,650 |
| Common services | | 114,500 |
| Supplies and equipment | | 52,000 |
| Supplies | 27,000 | |
| Equipment | 25,000 | |
| Contractual services | | 62,500 |
| Meetings | | 50,000 |
| Technical Council Meeting | | 34,000 |
| Duty travel | 13,000 | |
| Per diem | 10,000 | |
| Short-term consultants | 2,000 | |
| Interpreters | 6,000 | |
| Local transportation, printing and general services | 1,500 | |
| Secretariat personnel | 1,500 | |

1975 BUDGET (continued)

| | | |
|---|---|---|
| Scientific Advisory Committee | | 16,000 |
| Duty travel | 10,000 | |
| Per diem | 6,000 | |
| Total | | 2,054,356 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1975 BUDGET

RESEARCH ACTIVITIES

| | Diagnosis and Reference | Inactivated Vaccine | Modified live virus vaccine | Virus Survival | General Research | Total | % of Total |
|---|---|---|---|---|---|---|---|
| Salaries and allowances | | | | | | | |
| International staff | 66,618 | 66,646 | 49,962 | 31,475 | 34,233 | 248,934 | 23.3 |
| Local staff | 114,291 | 195,209 | 139,696 | 104,625 | 99,270 | 653,091 | 61.0 |
| Duty travel | 3,888 | 5,814 | 8,709 | 3,779 | 3,054 | 25,244 | 2.4 |
| Supplies and equipment | 16,043 | 74,311 | 21,549 | 9,268 | 15,129 | 136,300 | 12.7 |
| Contractual services | 1,410 | 1,410 | 1,410 | 1,410 | 1,410 | 7,050 | 0.6 |
| Total | 202,250 | 343,390 | 221,326 | 150,557 | 153,096 | 1,070,619 | |
| % of Total | 18.9 | 32.0 | 20.7 | 14.1 | 14.3 | | 100.0 |

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1975 BUDGET

FIELD ADVISORY SERVICES

| | Regional Advisors | Headquarters Advisors | Total | % of Total |
|---|---|---|---|---|
| Salaries and allowances | | | | |
| International staff | 180,707 | 152,668 | 333,375 | 76.5 |
| Local staff | - | 33,587 | 33,587 | 7.7 |
| Duty travel | 26,320 | 39,818 | 66,138 | 15.2 |
| Supplies and equipment | - | 2,650 | 2,650 | 0.6 |
| Total | 207,027 | 228,723 | 435,750 | |
| % of Total | 47.5 | 52.5 | | 100.0 |

PAN AMERICAN HEALTH ORGANIZATION

WORLD HEALTH ORGANIZATION

CE70/10 (Eng.)
ANNEX III

# VI INTER-AMERICAN MEETING AT THE MINISTERIAL LEVEL ON FOOT-AND-MOUTH DISEASE AND ZOONOSES CONTROL

MEDELLIN, COLOMBIA, 9-12 APRIL 1973

Provisional Agenda Item 8

RICAZ6/3 (Eng.)
26 February 1973
ORIGINAL: SPANISH

## PROGRAM AND BUDGET OF THE PAN AMERICAN ZOONOSES CENTER FOR 1973, PROPOSED ESTIMATES FOR 1974, AND PROVISIONAL DRAFT FOR 1975

## INTRODUCTION

Man, in addition to those diseases with which he is intimately associated, is beset in nature by other disease entities transmitted by animals. Human health is therefore seriously threatened by a varied and extensive group of infectious agents especially from domestic animals with which he lives in close kinship.

The net result is a complex of public health problems, for whose solution, the joint action of the services of Ministries of Health and of Agriculture must be brought to bear.

Perhaps, by reference to a few figures, the true significance of zoonoses in the Americas, might be better visualized. For 1970, the problem of rabies meant that 360,000 people had perforce to undertake rabies treatment - this out of a total of 1,220,000 people exposed. We know that there are at least 8,000 persons suffering from brucellosis. The problem of human tuberculosis of animal origin is seen in the frequency with which Mycobacterium bovis is isolated. This rate varies from 6 % to 26 % by region or by country. In hydatidosis, infection rates of 84.3 per 100,000 can be observed, and we can assure you that in one country alone, the number of 50,000 people are affected by this serious disease. Equine encephalitis has caused illness in over 50,000 persons during recent years. During 1971 alone, a total of 12,000 human cases were reported.

The economic impact of this diseases, of the group called zoonoses, can be measured in the high cost involved in diagnosis, treatment,prevention, hospitalization, surgical attention, etc. Other costs involved are, of course, loss of output by this great number of sick.

The repercussion of zoonoses on livestock development permits some reflection on how these disease affect financial aspects of this industry in our countries, and how they may also dislocate the whole economic development of the livestock industry in latin America. In this region there are 520,000,000 major domestic animals; of these, 250 million are cattle, 130 million, sheep, 100 million, pigs and 40 million, goats.

It has been estimated that losses from tuberculosis and brucellosis alone account for a 25 % reduction in the total production of the livestock economy. Estimates of losses from brucellosis, tuberculosis and paralytic rabies in cattle exceed 425 million U.S. dollars.

The Third Special Meeting of Ministries of Health of the Americas, held last October, emphasized the importance in this decade, of reducing the prevalence of zoonoses in the countries of latin America, expanding zoonoses - free areas, intensifying surveillance and promoting improved methods of disease detection. In addition, countries were encouraged to establish new laboratories, increase production of vaccines and other biologicals, develop new biological means of control, and increase the number of veterinary staff involved. The Meeting also laid stress on the need to improve and reinforce the Animal Health and Veterinary Public Health services so as to ensure a proper coordination between the programs of the Ministries of Health and those of Agriculture in all countries of the Americas.

The possibility of improving livestock production is dependent on

many and interdependent factors. These have to be examined not singly, but as a whole, if the efficient and necessary advance in livestock improvement in latin America is to be achieved. The application of new technology, the rational use of land, good management, improved breeding, better forage and feedstuffs, all contribute an improvement in the present animal production of the countries of the Caribbean and of latin America. The control of disease in this livestock, especially of zoonoses therefore acts as a springboard for all such programs with increased livestock production as their goal.

According to a study carried out by FAO in 1971 (1) the projected export of beef for 1980 will be short by 1.5 million tons, and this shortage will be evident in spite of the continued increase in production. Countries which will contribute to this shortage by increased import demand are the United States, who will be importing 1.2 million tons, and the countries of Western Europe, where the import is reckoned to be 1.5 million tons.

This unsatisfied market provides a most favorable opportunity for latin American countries, not only in relation to the opportunities in such an open receptive market, but also with regard to attractive prices for beef. In this respect, during 1972 record prices were being applied to cattle in the livestock markets in the European Economic Community.

Again, because the demand for beef is not simply a preferential and status purchase item in the consumer budget, but is also purchased on nutritional grounds ,developing countries which have varying nutrition problems, must find some solution to increased supply of beef for this own internal markets. According to some estimates made by FAO, this provision for home consumption should rise by 50 % over the next decade.

There is no doubt that sound statistical information, based on adequate geographical and population sectors, opportunely available, constitute the basis for the decisions and actions to be taken regarding the problems of animal health.

Statistics also contribute, by use of comparative methodology, in the evaluation of the effect of these actions, and thus can exert a modifying or accentuating influence on such decisions.

Concern over this problem has been raised in the 3 last meetings of RICAZ. This concern has been interpreted though appropriate resolutions which have recommended the creation of information-gathering systems, or their improvement where they are already in operation.

In general terms, the lack of effective information-gathering systems as the principal obstacle to the compliance of many of these recommendations, can be attributed to the size and cost of the necessary infrastructure at a national level, capable of gathering the mass of information necessary for

(1) Review of Projection for 1980 on Production and Demand of Beef. Committee on Problems of Basic Products - 1 June 1971 - FAO

transmittal to the higher echelons for analysis and use.

At the level of a national health service the characteristics of the disease entity and the cause of mortality which are the subject of study, are to some extent, determinant factors in the election of the kind of system which best fits the objectives sought. Thus, in animal health, three groups of disease with their own special characteristics can be noted: acute epidemic and exotic. The appearance of any of these groups should be recognized as soon as possible, since they require immediate attention. On the other hand, the groups of disease characterised as chronic and endemic are capable of being handled through permanent programs of control. Another group of diseases, which, though they do not cause outbreaks in the real sense, may be the cause of considerable economic loss in livestock, can be similarly handled.

It is these different characteristics which can distinguish between these varying situations and which are specifically designed to differentiate between the groups.

From the earliest information available in respect of human morbidity and mortality, several clear cut systems adapted to the above divisions, can be seen. In acute epidemic disease with its rapid spread, a reporting system is imperative if opportune action is to be taken. Such systems in many instances are nothing more than a simple procedure to be applied even before the first case is known. In the absence of such a procedure, the system remains nothing more than a permanent alert, without producing real information.

A great drawback of such systems is under-reporting. This is due to various factors such as low level of public health awareness, difficulties of communication, distance, fear of the economic consequences which may result from the application of control measures, etc. In some instances it may even be prudent to review and overhaul the complete system and attempt to make such operational changes as will overcome these obstacles.

This is a different situation from that kind of disease situations which cuase illness or death under encemic of sporadic conditions. This area has been dealt with traditionally, in human health, by means of disease registry. This is a perfectly justifiable procedure in human health, not only on public health grounds, but also in terms of judicial requirements. In the case of livestock, such a registry system with health statistics collection would appear to be unduly costly. It is possible, however, that if other statistical data involving other important areas were to be added, then the organization and functioning of a complete register of livestock, at least in certain countries and areas, would be advisable.

In contrast to the preceding considerations, some alternative procedures are available which can be added to the arsenal of statistics gathering procedures. Studies involving limited sample areas, or studies repeated at stated periodic internals, have clearly demonstrated the usefulness of such procedures in the attainment of valuable information at reduced cost.

Using as a basis, the census of the livestock population of a country, or even of a single geographical area, some machinery might be devised to carry out a diagnostic survey which can give a fairly complete picture of

the animal health position. Allied with this procedure, the possibility also arises of using the mechanism to collect information not normally included in the economic aspects of the census, such as animal husbandry, level of health education, etc.

Other sources of data which are available in the countries, should not be neglected, such as the periodic reports of special programs, livestock association data, economic statistics on export and import, etc. Among these other sources of information, perhaps that most closely linked with animal health and which provides really useable information is obtainable from meat packing plants and slaughterhouses where veterinary inspection exists. This source can yield a wealth of information on certain disease incidence, and while it may be of limited value regarding prevalence, at least this can give some clue to the tendency of the disease in the area.

There is no argument that sound scientific surveillance reports are essential if improvement is to be attained in the animal health picture, particularly of those animals of high economic importance.

Surveillance systems have as their goal the provision of information on a continued and opportune basis, on the actual status of disease and on the factors involved. Such systems permit :

a. the collection and evaluation of sound data on geographical and seasonal incidence and prevalence of disease in domestic animals;

b. warning of the presence of new or emergency disease situations;

c. provision of possibility of effecting change in the evolution of the disease;

d. the development of epidemiological control measures.

A complete animal census should include not only livestock, birds, laboratory animals, fur-bearing animals, zoological specimens and wildlife both terrestrial and aquatic. The surveillance should be of such a nature as will permit it to detect, evaluate and measure, both in amount and degree, the spectrum of animal disease, indicating the geographical and seasonal variations, the pattern of the disease and its economic importance.

In the countries of the Americas, including those of advanced economic status, the present reporting of cases of disease and deaths from disease, is a complex of vague, fragmentary and sometimes doubtful data. In general terms, governments have developed programs, on many occasions, with success, against a variety of dramatic, acute epidemic outbreaks. The most critical need, however, is to have a surveillance system of endemic and insiduous disease, or of diseases of complex etiology. Endemic disease, such as bovine mastitis, calfhood diarrhea, reproductive disorders, etc., may well be the major cause of loss in production or of efficiency.

The successes achieved in control of the major epidemics should go hand in had with reinforcement of the system of prevention and of alert, otherwise the efforts in achieving eradication may well have been made in vain.

For the purpose of surveillance, it is necessary that there be an adequate infrastructure with the relevant human and material resources, working in coordination with laboratories and other supporting services. With a few exceptions, most countries lack integrated surveillance systems. They do have, instead, specific programs which for the most part amount to vertical campaigns for the control of encephalitis, foot-and-mouth disease, or rabies, etc. Our main future efforts should focus on the improvement of the animal health infrastructure, and this calls for the training of qualified personnel. The answer would lie in the creation and maintenance of epidemiological surveillance services in the countries. This, in turn, calls for the following actions :

1. Improvement of animal health services, particularly those concerned with reporting systems.

2. Improvement and increase of laboratory facilities and other supporting services.

3. Development of the necessary human resources.

4. Development of an early warning surveillance system for exotic disease in the hemisphere and thus prevent their spread.

If the fight against animal disease is to meet with success, all relevant aspects have to be taken into account and actions must be carried out on a long term basis.

Past experience has shown the meager success which attends isolated and sporadic actions; these consume a substantial quantity of human, physical and financial resources, and diseases apparently eradicated may reappear when protection measures are neglected. This approach to the problem calls for the formulation of programs on a sound methodological base. This does not necessarily mean that a highly developed information gathering base must be laid in advance, nor does it infer the application of extremely complex methods.

In this regard, it is essential not to concentrate exclusively on the specific problem itself, to the detriment of other aspects which might prove equally decisive. Moreover, at the time the program is formulated, an attempt should be made to identify which aspects should be accurately known as the program proceeds and, thus, anticipate the need for change. This means that each program should not be exclusively concerned with the solution to a single problem but that it should aim at the permanent improvement of disease control procedures.

Even though the situation varies from country to country, it is still possible to list some of the causes which account for the relatively poor success achieved by the animal health services. The most salient seem to be the inadequate sanitary education of cattle owners, poorly applied technical assistance, the reduced scope and development of diagnostic laboratories, and the absence of vital political decisions.

In many countries of the area, the very first programs undertaken were of a vertical nature; they were concerned with a single disease. If

the new programs are modelled along these same lines, the cost of the services will be very high. In this regard, it is worth noting that some countries are already formulating multiple-campaign programs, and this of course, raises new problems in methodology and in procedure. There is no doubt that as such programs become more widely applied, the aim must be to seek a greater degree of coordination between the administrative services, the field services, and the higher planning echelon, if more efficient use of available resources is to be made.

In this enormous land mass of the continent, control of zoonoses can be facilitated by the definition of critical areas, where the animal health picture is fairly clear and epidemiological surveillance contributes to a more precise understanding of the real situation, at least with regard to the major diseases.

The development of vertical programs in the initial stages of control facilitates future action in a multiple program context, and as a result, a higher return can be expected from the combined future activity. Such programs cannot remain limited in geographical extent to a single country. There are disease problems which for this solution, demandsunited international effort, as the only sure means to achieve the goals set in the programs. Examples of this kind of need for action on an international level can be seen in the programs control of foot and mouth disease and in encephalitis. The modern view of health and of the actions required to achieve the goals logically includes objective to be attained, methods to be applied, decisions to be taken, and investment to be made. Looked at from this point of view, disease in livestock, closely linked with human health and man's social development, must be tackled with ever increasing justification by extended geographical international programs. An increasing willingness and interest in such disease programs is evident.

The animal disease control system, together with its associated planning, well established within its proper methodology, makes it possible to come to logical conclusions and decisions, and favours the correct distribution of resources. Once such a system is set up, external finance becomes more attractive, and the full cost of the future program can be estimated. The information of the real impact of animal disease, including social and economic implications, will be of significant value in hastening the development of the program, with the support of international action and of the units which will be collaborative in the multinational action.

The efforts of individual countries to reach limits of self sufficiency in the production of biologicals for the control and eradication programs of animal disease, in the majority of cases, are quite insufficient. Even when significant increases in national or local production of such biologicals is achieved, it appears that it would be most helpful to find some method which would ensure a proper supply of these biologicals. Whatever system is agreed upon, this should operate with the collaboration of the several countries which are carrying out the programs in the field.

The foregoing should be based on the improvement of diagnostic facilities, and on the establishment of such units throughout the country.

If indeed this process is occurring already in several latin American countries, there is a paramount need for the establishment of first class laboratories at the central level, to which other secondary laboratory units may be associated, in areas where the major incidence of the disease exists. The continuity of efficient diagnostic facilities and service is established as a most decisive factor and a most important component of an efficient program.

Effort allied with experience define the practical limits of programs of zoonoses control. At the same time it should be borne in mind that these individual programs must have a future development as part of a wide system of animal disease control; in this system each aspect should be fitted within a properly studied program, and this should incorporate all aspects of analysis, be eminently practical, and capable of being evaluated. All this is possible only when the information collection system is used as a basis for decision; it is these decisions which provide for the possibility of attaining the essential goals of a control program.

When the stage of assembling of the information is reached, a decision can be made regarding the order of priorities, and this will permit the orderly compliance, with the resource available, of the various aspects of planning.

The Pan American Zoonoses Center, as it extends its assistance to the regional area of the Americas, has been able to define certain dynamic approaches to the control of zoonoses.

The methodology applied to serious animal disease problems in latin America and the Caribbean, correspond to a single system. This implies well defined planned lines of action based on the true characteristics of the disease. It is absolutely imperative that an information collection system be of such a nature that the rates obtained be used for geographical and seasonal estimates of incidence and prevalence of zoonoses. This information will also be of use when an outbreak occurs of a new disease syndrome not previously recognized. For these reasons, and in consequence of repeated demands made by Ministers at previous meetings, the Center has established a Statistical Unit to assist in the provision of information on which decisions might be taken. Associated with this unit, is a further planning unit which analyses and develops programs on the basis of a rational operative system.

The consolidation of information into the planning process carried out by these two units is further consolidated into the epidemiological surveillance unit of the Center, which bring up to date knowledge of the disease; these factors come together to better define methods of control, prevention and eradication.

Thus, this Center has available a great deal of the background and details of disease incidence for control in a variety of countries and regions.

For this to work effectively, it is essential that costs and losses

be better judged, and that the efficiency of new scientific control procedures be better evaluated. Countries must have a greater regard for the social dividends to be obtained from the investment of government funds, in the field of animal health, and to orient the proper assignment of such funds to livestock sector of the economy.

More reliable information is required concerning the relationship between animal husbandry and the incidence and serious economic repercussion of specific diseases. In addition, the cost of alternative animal husbandry techniques should be known and assessed.

Working alongside the units mentioned above, other units contribute to the information collection system. At the Center, these are the units of Immunology, Pathology and Ecology. All of these units (Biostatistics, Epidemiology, Immunology, Pathology and Ecology) represent an indispensable support for the work of other sections of the Center. Each Section which studies the specific disease, collects all available information on antecedents, programs, reporting systems, etc., from these units. The units at the Center are formed into a Basic Interdisciplinary Department. Thus, each disease entity as far as its radies in latin America and the Caribbean is concerned, is subject to the widest possible range of analysis for effective program purposes.

The assurance can be given that the Center, working in collaboration with the administrative and technical units of the countries and with its direct application to field activity, can assist in improving the use that is made of resources for zoonoses control.

Laboratory research must be closely identified with the reality of the problems of each country, if the proper solution to important aspects of control is to be found. Circumstances will determine the characteristics of the type of research that should be carried out. In this respect, the Center carries out research in all areas from basic research to experimental applied research.

Research, howerver, is not an area limited to the laboratory. If the real and effective purpose of the programs are to be realized, research must be projected to the field, where the disease syndrome and its associated pathology exists in the real sense. Having given thought to the harmony which should exist between research in the laboratory and in the field, we are in a position to project this towards a pilot or demonstration area. We are conscious of the fact that at present, the operational methods of the Center are designed towards a national and effective system of activity

Technical assistance must be provided in accordance with properly planned programs, jointly drawn up with the country. Past experience has demonstrated that the isolated visits of our consultants serve a limited purpose. When these occur in the absence of a proper program design based on solid statistical data, without previous epidemiological studies, unsupported by good diagnostic facilities and proper vaccines, little positive results are achieved.

Programs, therefore must be designed in accordance with these requirements, and with the aim of permitting the Center to provide effective and continued technical assistance, this program design should be received in advance at the Center.

The whole range of information so often referred to earlier, will help to identify the kind of technical assistance which our Center might provide, in each particular problem. In no way do we minimise the importance of preparation and training which may be necessary for technical services, within each laboratory of the countries of the Region.

Training of personnel represents the basic pre-requisite for the proper efficient development of technical staff of each country. The Center is fully aware of its responsibilities in this vital area of its operation. It is evident that the human and economic resources presently applied to the development of zoonoses control programs are insufficient to meet the demand. Animal health units appear to face a further difficulty that of excessive loss of trained personnel. Preliminary information received on 182 fellows who have studied at the Center over the past few years, indicate that this loss may be substantial, and national authorities should address themselves to the ral cause of such loss.

If indeed it is acknowledged that the Center is in an excellent position to provide training opportunities, in no manner can it be hoped that the Center can assume the responsibility for meeting the total training demand and requirements of all countries. Countries, therefore, should take such screening steps as to ensure that their staff members who may be selected for training at the Center, possess the necessary professional and leadership qualifications which will permit the knowledge gained at the Center to be multiplied many times over, in the local programs in their own country. In this way only, can the increasing demand for training be met.

In view of the new responsibilities which are gradually being assumed by animal health units, the Center, within its training program continues to offer a special animal health planning course, based on anticipated needs of the control programs of the main zoonoses.

The Center will continue the expansion of the international epidemiological surveillance service, within its possibilities. At this time, the service is limited to rabies and encephalitis.

Within the international area, the Center will seek to coordinate the surveillance service for foot and mouth disease with those of a few special human transmissible disease; the end purpose of this will be the creation of a complete surveillance system for transmissible disease and for the zoonoses in the Americas.

Cepanzo will also, assist in the design of emergency action programs to prevent the introduction of exotic disease and in disaster situations.

We shall continue the provision of technical assistance in vaccine quality control and in the diagnostic field. When conditions require, the Center can prepare special lots of vaccines or antigens for special trials in pilot programs, of for use in special programs.

The Center's research program will continue the search for new concepts of treatment in zoonoses, as well as the production of purified vaccines, of greater antigenic capacity and conferring longer lasting immunity.

Courses and Seminars on specific disease entities or problems in animal health will be developed in accordance with the real needs of wide geographical areas, with special correlation to multinational aspects of the programs.

We all of us have a special responsibility in seeing to it that areas, presently free from disease, and which represent limited areas of several countries, should remain free. In this way, the livestock programs of the areas will be favored, and substantial deterioration in general public health with its accompanying socio-economic implication, be avoided.

Another point of major interest of the Center is to be noted in the map showing the present deficiet of biologicals for national as well as multinational programs. It is evident that in many instances, control of zoonoses cannot be carried out in critical areas because of insufficient supply of vaccine. The urgent need, therefore, of establishing stocks of such vaccines is evident.

One important aspect in the study of zoonoses is that different pathogenic agents may be carried by foodstuffs of animal origin. The infectious diarrheas, one of the principal causes of infant mortality in our countries, are closely linked to food hygiene. The principal pathogens come from foods of animal origin. Such organisms produce especially in high protein value foods, a considerable wastage. Thus, the problem of malnutrition becomes even greater in our countries. Bacterial contamination may have a significan economic impact on export of beef, fish meat, shellfish, etc. For these reasons, the Center has continued to provide technical assistance and training in microbiological control of food, and assisting in the development of national food hygiene laboratories.

## SCIENTIFIC ADVISORY COMMITTEE

The research program of the Center is reviewed and discussed in meeting held every two years, by a Scientific Advisory Committee. This group is designated by the Director and the Chief of the Animal and Human Health Department of the Organization.

The Scientific Advisory Committee visited the Center during the period 13-18 of November 1972. The research program of each of the Center's Units and Sections was reviewed. The Report of the Committee will be presented to the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control.

FOLLOW UP OF RESOLUTIONS APPROVED AT THE V INTERAMERICAN MEETING ON FOOT AND MOUTH DISEASE AND OTHER ZOONOSES
Mexico, D.F., Mexico, 10-13 April 1972

RESOLUTION VI

EPIDEMIOLOGICAL SURVEILLANCE OF RABIES

This resolution refers mainly to improvement in reporting systems.

During 1972, Cuba participated for the first time in the epidemiological surveillance system, thus completing the coverage in the hemisphere. In general, the 30 contributing countries report on a regular basis. A few delayed reports continue. A slow but continued improvement in the quality and quantity of the data, is evident.

New Reporting Forms. With the object of improving the quality of the information provided, new reporting forms for use in 1973 were designed, published and distributed.

World Survey on Rabies. As in previous years, the Center undertook the responsibility of carrying out the survey on rabies in the American continent during 1971. By December 1972, 80% of countries had responded.

Second Basic Concise Report on Human and Animal Populations (eight species of animals) and on Rabies, by Country and by Zones of PAHO. This information appears in Annexes 1, 2 and 3 together with a summary review of principal items of interest occurring during the 3-year period July 1969 to June 1972. In addition, a review of events occurring during 1972 is included.

Monthly Reporting in Argentina (telephonic communication). During the second six month period of 1972, this system involving 9 laboratories covering 12 provinces, was tried. The results show that this system of telephonic reporting is much superior to the traditional method used in the first semester. During the second period, the number of cases of rabies in dogs increased five times, when reporting was made by telephone. Similar improvement in number of cases in other animals was evident. Other features worthy of mention with regard to this trial were: a) two episodes of re-introduction of the disease in areas apparently free for several years from the disease; in both of these instances, human cases of difficult diagnosis were concerned. b) the identification for the first time in latin America, of a case of abortive human rabies. c) the recognition for the first time, of a case of rabies in insectiverous bats in Rosario.

Another section of Resolution VI refers to the possibility of establishing inter-country diagnostic services. Up till now no such services have been established. Nonetheless, the Center carried out an analysis of laboratories and of the fellows trained by PAHO, with the object of studying regionalization of rabies diagnostic services within countries. It is the conclusion of the Center that all countries have adequate facilities at their disposal for rabies diagnosis.

During recent years, a total of 28 fellowship-months were given

over to training in diagnosis. This policy of providing training in this field will continue.

Improved coordination between the countries and the Pan American Zoonoses Center. During 1972 some improvement was noted - due to the use being made of the Epidemiological Surveillance System - of the laboratory and reference services of the Center, of ecological research, and, most of all, of the collaboration of the Center in ongoing programs of the countries.

## RESOLUTION VII

### EPIDEMIOLOGICAL SURVEILLANCE OF VENEZUELAN EQUINE ENCEPHALITIS IN THE AMERICAS

This resolution recommends the improvement in reporting procedures, increasesthe degree of collaboration between the Ministries of Agriculture and Health, and seeks the establishment of coordinated research in this field. During 1972, the first year in which the surveillance system was in operation, monthly reports were published. A copy of the first semester report is attached to these documents, as Annex IV. It can be seen from this report, that VEE virus activity was reported from Mexico, Central America, Venezuela, Colombia, Ecuador and Peru. There were a total of 3,200 cases in horses (2,000 of which occurred in Mexico) and 430 human cases, of which 400 occurred in Mexico. During the period, a total of 316,000 horses were vaccinated; 70% were vaccinated using modified live virus vaccine, and 30% with inactivated virus. The equine population estimated for the infected area is approximately 17 million. There are approximately 23.6 million horses in the VEE-free area.

Contacts were maintained with research workers of Argentina (Virus Institute of Corrientes, Cordoba and Buenos Aires) and with the Veterinary Research Institute of Maracay, Venezuela. In addition the Center collaborated with several countries reporting revisions in regulations concerning prevention of the disease, and quarantine restrictions.

## RESOLUTION IX

### ORGANIZATION OF STATISTICAL SERVICES OF ANIMAL HEALTH

This Resolution reiterates the need to apply standards for the establishment or improvement of statistics units and requests P.A.S.B. to collaborate in the development of courses for the application of statistical methods in animal health. For this purpose the resolution indicated the use of demonstration areas, Mexico and Rio Grande do Sul.

The Center has complied with this Resolution in its teaching aspect. The Center's Statistical Unit has had an important role in course material at the Course "Planning in Animal Health" carried

out in 1972. This Course is a joint activity of the Zoonoses Center and the Foot and Mouth Disease Center.

Demonstration sampling techniques were designed by the Center for application in differing disease situations in Mexico. These were evolved during the course of technical assistance provided by the Statistics Unit to Mexico, and will be tried out in the field during 1973. Thus, in the future, several zones of Mexico may well be in a condition to be used for demonstration areas for training personnel of the countries of the region.

REPORT OF THE UNITS

## TECHNICAL ASSISTANCE

During 1971, a total of 14 professionals of the Center visited a major number of countries of the Americas, in the provision of technical assistance for a variety of programs and in response to requests from animal health units.

The Center has cooperated with the public health and animal health authorities in hydatidosis control projects in Neuquen, Argentina and in Flores, Uruguay. Assistance was also provided in the revision of draft projects of the National Hydatidosis Commission for subsequent presentation to the Inter-American Development Bank for financial assistance.

In brucellosis, the Center participated in a review of the control program in Cuba; the purpose of this review was to reorientate activities for accelerated attainment of the goal of eradication of the disease. A mission of the Center also visited the Dominican Republic to cooperate with the national authorities, International Development Bank and Food and Agricultural Organization in revising the project on animal health. In this project, brucellosis control forms an important component. Similarly the Center assisted the national authorities of Costa Rica and Honduras in the preparation of projects of control of tuberculosis and brucellosis.

During October, the Center provided statistical services to the Ministry of Agriculture, Mexico in the design of pilot programs of brucellosis.

Mexico and Venezuela were provided with technical assistance in rabies vaccine production and diagnostic laboratory procedures.

Studies were undertaken in Argentina and in Venezuela related to Venezuela Equine Encephalitis.

The experimental project of vampire bat control in selected areas ahead of an advancing epizootic appears to have been most successful. This project was undertaken during 1972 with the collaboration of the SELSA Division of the Ministry of Agriculture, Argentina.

Assistance was also provided to the Government of Brazil on the subject of ecology of vampire bats. During 1972 assistance was provided to Chile in supplying 60,000 doses of avirulent anthrax vaccine. Details of other biologicals provided under the technical assistance program of the Center are shown in the corresponding table in this report.

## FIELD SERVICES 1972

| Country | Technical Assistance provided in the following programs |
|---|---|
| Argentina | Pilot Program of Hydatidosis Control (Neuquén) |
| | Epidemiological Studies on Hydatidosis in Wildlife |
| | Control of Canine Rabies (Greater Buenos Aires and Misiones) |
| | Studies on Control of Bovine Rabies (Santiago del Estero) |
| | Ecological Research on Vampire Bats and Wildlife (Misiones and Tucumán) |
| | Survey on Zoonoses in Man (various Provinces) |
| | Bovine Tuberculosis - Demonstration control project (Buenos Aires and Salta Provinces) |
| | Research on Equine Encephalitis (Corrientes) |
| | Organization of a Food Microbiology Laboratory at the National Agricultural and Livestock Institute |
| Brazil | Research Program on Vampire Bat Ecology (Recife, Fortaleza) |
| | Animal Health Program (Rio Grande do Sul) |
| Colombia | Development of a Food Microbiology Laboratory (National Institute, Special Health Programs) |
| | Research Project on Food Microbiology (University of Antioquía, Medellín) |
| | Control of Canine Rabies (Cali) |
| Costa Rica | Control of Tuberculosis and Brucellosis in Cattle |
| Cuba | Control of Tuberculosis and Brucellosis (Havana) |
| | Preparation of PPD Tuberculin (Havana) |
| Chile | Microbiological Control of Food |
| | Canine Rabies Eradication Programs |
| | Programs of Comparative Pathology |

| | |
|---|---|
| Dominican Republic | BID Project of Animal Health |
| Honduras | BID Project of Animal Health |
| Mexico | Production of PPD Tuberculin |
| | Brucellosis Survey |
| | Production of Rabies Vaccine |
| Panama | Program of Eradication of Brucellosis in Cattle and in Swine |
| Peru | Program of Comparative Pathology |
| Uruguay | Studies for a National Program of Hydatidosis Control |
| | Laboratory Techniques in Hydatidosis |
| Venezuela | Epidemiology of Venezuelan Equine Encephalitis |
| | Diagnostic for Rabies Diagnosis |

## TRAINING AND TECHNICAL INFORMATION

### A. Training Program

The provision of suitable training for professionals of the animal health units of the countries of the Americas continues as a major contribution of the Center to the establishment of an efficient infrastructure within the animal health units. This will be reflected in the proper functioning of programs. The training provided at the Center is the subject of special attention insofar as it is possible to supply the technical training requested, suited to the specific aptitude and ability of the trainee, and in accordance with the stated needs of the requesting country. While it is recognized that the Center is unique in the Americas in being able to provide the variety of training opportunities required, emphasis should be given to the countries in seeing to it that this training be used in its widest sense within the country, and that the skills and training acquired be imparted to other workers in the local area.

During 1972, a total of 42 fellows received training on an individual basis at the Center. The students came from 12 countries. The principal areas of training were in diagnostic laboratory techniques in rabies, brucellosis, hydatidosis, leptospirosis, tuberculosis and food microbiology. In addition, training was provided in vaccine production and preparation of biological materials and reagents.

Of significant importance, is the Animal Health Planning Course carried out at the Center during 1972. This Course was developed in collaboration with the Foot and Mouth Disease Center. A total of 18 veterinarians from 9 countries were selected to attend. This Course was designed to improve the planning section of animal health units. Included in the Course, were subjects pertinent to the planning, execution and evaluation of programs - subjects not normally taught in the normal veterinary curriculum.

In addition to the training provided at the Center, Courses and Seminars were conducted in a variety of countries. A total of 17 Courses held with the Center's participation provided training opportunity to 513 participants. A total of 6 Seminars were also held outside of CEPANZO, with the participation of 326 participants.

- Action of CEPANZO for the future

A review of past training provided by the Center reveals that a significant improvement in diagnostic capacity in zoonoses should be evident at this time in all countries of the hemisphere. In spite of this, it would appear that limited use is being made of the training skills provided. The crisis in production of biologics in latin America points to the fact that training *per se* is not necessarily the bottle-neck, and that the solution may lie in other areas. For a partial solution to this problem, the proposal has been made for the establishment of regional laboratories for vaccine production. If this solution is reached CEPANZO will undertake to

provide the necessary training and assistance in this area.

The Center is aware of the growing need of countries for training in zoonoses surveillance. While this subject is not one in which training is easily provided within the physical facilities of CEPANZO, consideration is being given to the holding of special Courses, Seminars, etc. at the Center and elsewhere, in combination with Foot and Mouth Disease Center and Communicable Disease Units.

The traditional training for individual fellows from countries will continue, in accordance with the stated request and need of the country. It is anticipated that, following the development of programs of tuberculosis and brucellosis control, that requests for training opportunities will increase. The Center will plan to meet these requests. The Center does not however, anticipate, any increase in requests for training in hydatidosis and leptospirosis since no increase in field or laboratory program activity is evident in the countries concerned at this time.

In view of the changing pattern of zoonoses, the priorities assigned by the countries themselves to these zoonoses, CEPANZO will adapt its training program to present and future needs of the countries. As new techniques and procedures come to prove their efficiency, CEPANZO will introduce these into training program. Thus the trials being undertaken in vampire bat control, will inevitably, if successful, form a part of the training provided, in sylvatic rabies control. As yet is is early to determine the area of CEPANZO training responsibility in provision of training in diagnosis of such zoonoses as Venezuelan Equine Encephalitis. As the problem of VEE becomes more defined, the training opportunities will be given the necessary attention.

B. Program of Technical Information

During 1972 the Center continued the reference library services; a total of 4,446 publications were received, and 110,186 copies of articles were made for reference and for distribution.

The Center published the Quaterly Information Bulletin "Zoonoses" with a distribution of 4,500 copies. The Monthly and Six Monthly Epidemiological Surveillance Report on Rabies in separate English and Spanish languages was distributed in 10,200 copies. Similarly the Monthly and Six Monthly Report on Epidemiological Surveillance of Encephalitis was sent out in 1,800 copies.

The Center prepared the following publicationsin the Technical Report Series :

- Technical Report No. 14 "Guidelines for the Preparation and Evaluation of Bovine Brucellosis Programs".
- Technical Report No. 15 "Guidelines for Bovine Tuberculosis Projects". A distribution of 1,500 copies was made.

In the Center's Monograph series, the following publications were distributed :

- Monograph No. 2 "Food Consumption and Hygiene" (2,500 copies)
- Monograph No. 3 "Haematophagous Bats and their Medical Importance in Panama (1,200 copies).
- In press: Monograph No. 4 "Venezuelan Equine Encephalitis in Colombia" and Monograph No. 5 "Simplified Diagnostic Serological Methods for Salmonellae".

A total of 75 publications were prepared by the Staff of the Center.

TABLE

International Courses and Seminars - 1972
(Organized by Cepanzo, or with the Center's participation)

| Subject | No. of participants | Place and Date |
|---|---|---|
| II Animal Health Planning Course | 18 | Ramos Mejía, Buenos Aires, Argentina, 15 May-10 December 1972 - CEPANZO |
| Course on Food Quality Control | 12 | University of Panama, Panama, 20 August-22 September, 1972 |
| Seminar on the Teaching of Veterinary Medicine | 37 | Belo Horizonte, Brazil, 21-31 August, 1972 |
| First Latin-American Congress on Large Animals (Buiatría) | - | Buenos Aires, Argentina, 11-15 September, 1972 |
| Training Course on Epidemiology and Immunodiagnosis of Hydatid Disease | 80 | Arequipa, Peru, 16-20 October, 1972 |
| Tenth International Congress on Hydatidosis | - | Arequipa, Peru, 22-27 October, 1972 |
| Regional Brucellosis Seminar | 98 | Port of Spain, Trinidad, 25-28 October 1972 |
| First Argentine Congress on Parasitology and International Symposium on Chagas Disease | 400 | Buenos Aires, Argentina, 26 November - 2 December 1972 |

TABLE

Regional and National Courses or Seminars - 1972
(Organized by Cepanzo, or with the Center's participation)

| Subject | No. of participants | Place and Date |
|---|---|---|
| XVII Regional Dairy Training Course for Latin America | 29 | Santiago, Chile, 1 March - 2 June 1972 |
| II National Dairy Training Course | 33 | Buenos Aires, Argentina - 17 April - 14 May 1972 |
| Brucellosis Course for Veterinarians | 35 | Mexico, Mexico, 23-30 May 1972 |
| Seminar on Public and Animal Health Aspects of Brucellosis | - | Havana, Cuba, 18-19 May 1972 |
| Regional Equine Encephalitis Seminar | 25 | Curaçao, Netherlands Antilles 29 May-2 June 1972 |
| VII Seminar on Drugs and Food Control for Central America and Panama | 27 | Guatemala, Guatemala, June 4-10, 1972 |
| I National Rabies Seminar | 114 | Caracas, Venezuela, June 5-9 1972 |
| II Short Course on Rabies Diagnosis | 19 | Maracay, Venezuela, June 12-16 1972 |
| III Course on Microbiology and Parasitology | 13 | Rosario, Santa Fe, Argentina, 29 June- 2 July 1972 |
| II Course on Rabies Diagnostic Methods | 16 | Bogota, Colombia, 1-15 September 1972 |
| Course for Laboratory Professionals | 7 | Mar del Plata, Buenos Aires, Argentina, 25 Sep-6 Oct. 1972 |
| Course on Immunology and Immunofluorescence Techniques | 24 | Montevideo, Uruguay, 25 September 14 October, 1972 |
| IV Argentine Special Meeting on Transmissible Disease | 200 | Rosario, Santa Fe, Argentina, 28-30 September, 1972 |
| Practical Course on Serologic Diagnosis of Human Brucellosis | 26 | Lima, Peru, 2-5 October, 1972 |

| Subject | No. of participants | Place and Date |
|---|---|---|
| II Argentine Congress on Biochemistry | 1080 | Huerta Grande, Córdoba, Argentina, 8-15 October, 1972 |
| Brucellosis and Tuberculosis Seminar | 25 | Guatemala, Guatemala, 9-14 October, 1972 |
| Seminar on Rabies Control Techniques | 60 | Sao Paulo, Brazil, 20-24 November, 1972 |
| First National Course on Epidemiology and Medical Care of People Exposed to Rabies | 49 | Popayan, Colombia, 20-24 November, 1972 |
| Course on Food Hygiene for Sanitary Inspectors | 36 | Montevideo, Uruguay, 27 November-2 December 1972 |
| Course on Bacteriological Control of Food | - | Santiago, Chile, 6-16 December 1972 |
| XVIII Regional Dairy Training Course | - | Santiago, Chile, September 1972 |

## SUPPORTING ACTIVITIES IN ANIMAL HEALTH

In addition to studies directly related to the principal zoonoses, CEPANZO has developed a series of activities designed for the improvement of the infrastructure of animal health services. Among the principal activities are those concerned with training and technical assistance in planning and statistics, the development of surveillance systems for the whole area, and training and technical assistance.

It is a constant concern of the Center that this multidisciplinary participation be carried out with as much coordination as possible and that this coordination be later reflected in the national health services.

### PLANNING

1. Description of the situation in the countries of the area

Countries have demonstrated their interest in reinforcing activities in animal health, with the aim of reducing the burden of zoonoses, specially insofar as they affect public health and economics. This interest is expressed in the development of programs in which a variety of components take part. These factors may be technical, social, economic, financial, etc. In addition, these programs have to be properly coordinated with sectorial plans of livestock development and of human health; in some instances, multinational, and national coordination, must be considered.

In a few countries, planning units have been developed within the animal health services. These have taken over the responsibility of developing new programs, and of redesigning programs already in operation. The creation of such units, however, is a recent development, and the personnel involved are still in the process of being trained. In addition, there are difficulties in adapting previous administrative structures to include such units. In other countries, the development program design is being carried out by interdisciplinary groups, made up by staff from the different agencies who work in the animal health field. In some instances, these groups have received technical assistance of the Center.

In general terms, it can be stated that present planning in animal health is characterized by the following :

a. Insufficient degree of training in planning, design and in program administration.

b. Insufficient development of planning units in the animal health services. This is due to a variety of causes, among which are the following :

   1. Several countries have not made the political decision to include such units within the service;

   2. In some instances the planning units have not been able to establish a sufficient degree of coordination with the technical units directly responsible for the execution of

the programs. This is particularly true at regional level, and at the level where decisions are made;

3. The methodology used for design and administration of programs is quite deficient. In particular, mention should be made of problems related to diagnostic techniques, cost-benefit analyses, program evaluation, and procedures for emergency action.

c. Failures in information systems. These failures are concerned with the unsatisfactory coverage of the information, and with the fact that the methods used for the collection and analysis of the information are not sufficiently adjusted to the needs for which the information was designed.

2. Review of the work accomplished in 1972

From the beginning, CEPANZO has collaborated in the development of programs of animal health. This assistance is based on the provision of technical assistance for the development of programs, training of veterinarians in planning methods, and assistance in the development of planning units in the animal health services.

At the same time,a large sector of the Center's laboratory services are directly related to the design and operation of programs.

In this respect, mention must be made of the collaboration which exists between the International Development Bank and the Pan American Health Organization, through the Pan American Foot-and-Mouth Disease Center and the Zoonoses Center, for the provision of technical assistance to those countries in receipt of financial support for their programs.

It is evident that professionals properly trained in planning methods are necessary for these programs. These skills are not ones which are included in the study programs of Faculties of Veterinary Medicine. For this reason, the Pan American Health Organization decided to develop courses of Planning in Animal Health, to be offered by the Foot-and-Mouth Disease Center and by the Zoonoses Center. During 1972, the second such course was offered. A total of 18 professionals from 9 latin American countries attended. The Course began on 15 May and ended on 15 December. During the period 1 October to 2 December, the related field exercises were carried out, using three groups of trainees :

- Development of a Foot-and-Mouth Disease and Brucellosis control program in Llanquihue Province, Chile.

- Development of a Foot-and-Mouth Disease and Tuberculosis program in the Department of Guairá, Paraguay.

- Development of a Brucellosis and Tuberculosis program at Azul, Argentina.

Reference material relating to a large portion of the disciplines involved in the studies were prepared and published.

In addition, the Center provided technical assistance for the development of national or regional programs for the main zoonoses, as well as for design and evaluation of pilot programs.

3. Future activity of the Center

The Center will continue to provide training opportunities in Planning for Animal Health.

The Center will maintain a close working relationship with the services in the countries concerned with the development and execution of control programs.

It would appear useful to extend the collaboration of the Center to include problems of the operational type, which arise from the development of planning systems within the services, specially in regard to the coordination of information gathering systems, with epidemiological surveillance units, and with research and execution of programs in the field.

During 1973 it is hoped to carry out a seminar to analyze the developments reached in animal health programs, and to formulate recommendations for future action. Participants to such a seminar will be the fellows trained in previous courses, animal health officers of the countries, and PAHO representatives concerned with training and technical assistance in the field of planning.

EPIDEMIOLOGICAL SURVEILLANCE IN ANIMAL HEALTH IN THE AMERICAS

1. Overall View

The status of epidemiological surveillance varies with the degree of development of the country:

a. In those economically advanced countries, morbidity, mortality and notifiable disease registers are incomplete, and on occasion, of doubtful validity. Governments in this category are well equipped with the resources needed to control acute and epidemic disease, and have the necessary infrastructure to prevent the introduction of dangerous and exotic disease into the country. Highly advanced countries recognise that they do not have surveillance services for endemic disease.

b. In the developing latin American countries, there are several vertical programs such as foot-and-mouth disease, encephalitis, rabies, and others. In the case of many other acute and chronic infectious disease, there still remains the traditional slow system of collection of information. This is based on a deficient infrastructure, which is specially poor in its reporting system, laboratory and support services.

In general the most critical need is to establish efficient surveillance services. The surveillance systems currently in existence are inadequate from the point of view of both the area and the population they cover. The international surveillance systems for foot-and-mouth disease, equine encephalitis an rabies were started during the last decade. It should be noted that zoonoses surveillance systems seldom operate within the integrated framework, comprising Ministries of Public Health and Agriculture, and the Universities.

2. Review of CEPANZO's activities during 1972

The rabies surveillance service has now been in effect for three years; encephalitis surveillance was started in 1972. Monthly, bi-annual and annual reports are published regularly.

A critical review of the forms used for both services was conducted in 1972 with a view to improving the accuracy of the information received. In the same year, the second review of basic information on human and animal populations as well as selected zoonoses in the Americas was published and distributed.

As was the case in previous years, the Center collaborated with WHO in the world survey of rabies for 1971.

Work was started on the translation into Spanish of Dr. Violas James, (California, USA) paper on encephalitis surveillance.

The documents "Epidemiological Surveillance" and "Animal Health" read at the Third REMSA meeting, held in Santiago, Chile, were analyzed.

During 1972 papers dealing with canine and bovine rabies were prepared (La Plata and Rosario). A working paper was sent to the Seminar on Epidemiological Surveillance held in Nairobi, Kenya, and proposals were submitted to the consideration of the WHO Committee of Experts in Rabies (Geneva).

The Center was represented at a Seminar on equine encephalitis (Corrientes, Argentina). The epidemiology of equine encephalitis was included in the Animal Health Planning Course taught at the Center. Special classes in epidemiology were held at the Rabies Seminar held in Popayan, Colombia.

During the second semester, the Epidemiology Unit, responsible for the establishment of the surveillance system, subjected the results obtained to an in-depth evaluation. In addition, the use of monthly telephone surveys for rabies surveillance was tried in Argentina.

3. Future Action of the Center

Both at the national and international level, the Center will endeavour to bring about effective coordination of foot-and-mouth and rabies surveillance services with those of other zoonoses and human transmissible disease. The ultimate goal will be to set up a global system for the surveillance of transmissible diseases on zoonoses in the Americas.

Emergency plans will be designed to prevent exotic disease from being introduced when disaster situations arise.

Epidemiological surveillance services at the international level will be expanded so as to include other zoonoses, such as salmonellosis, cysticercosis, trichinosis, etc.

In conjunction with PANAFTOSA and other PAHO agencies, courses will be organized to provide training opportunities in surveillance techniques for personnel of animal health units.

Steps will be taken to promote the creation of national surveillance units. Simple surveillance procedures will be designed, suited to the conditions prevailing in the Americas in the area of animal health.

## STATISTICS AND INFORMATION SYSTEMS

### 1. Overall View

The present status of animal health information units or services : Animal health information services, are for the most part, unsatisfactory, in the countries of the area.

Time and again, it has been shown that the complete absence of data, or lack of up to date, trustworthy, broad-based data, has been a major obstacle in the proper and basic analysis of problems. This situation applies repeatedly in a variety of disease problems, not only in zoonoses.

In this regard, it should be noted that resolutions concerning the need to create or improve information gathering systems, were adopted at each of the last three meetings of RICAZ. This is a measure of the concern with which governments view the problem.

In general terms, it can be said that the present services in operation are deficient in the area they cover, in the quality of the data obtained, in the timeliness of the data, and of the use that is given to it.

These deficiencies might be blamed in some way, to individual failure. Nevertheless, it is true to say that information systems, in the fluid traditional style become complex and costly items quite beyond the economic reach of most animal health units.

This is not to say that there are unsumountable obstacles to prevent countries from gaining worthwhile information. Technology with its data-processing techniques and application of appropriate statistical method, will surely permit a rapid improvement in information gathering systems and utilization of data, essential if more effective action is to be achieved in the area of animal health.

## 2. Review of Activities during 1972

The Biostatistics Unit, created at the Center in 1972 has been involved in the work of the Center in various aspects of research, teaching and technical assistance.

### 2.1 Research

The Unit has collaborated in the planning and analysis of data resulting from research projects. In this regard, it has also collaborated with the National Agriculture and Livestock Institute (INTA), Argentina.

### 2.2 Teaching

Statistics constitute an important component of the curriculum of the course "Planning in Animal Health" held at the Center. In addition the Unit collaborated in the design of field studies carried out by the trainees during the latter phase of their training.

### 2.3 Technical Assistance

The Unit collaborated with Uruguay in prevalence studies in brucellosis. A major objective of the study was to evaluate the brucellosis vaccination program which had been underway for several years; based on the results of this study, decisions are to be taken regarding the future development of this activity.

In Mexico, the Unit developed a series of sampling techniques for application in varying situations of prevalence of disease and of livestock development. It is expected that the Animal Health Department, Mexico will, as a result be able to obtain more significant information regarding the progress of their bovine tuberculosis and brucellosis control programs.

## 3. Future Activities

### 3.1 Research

In this aspect, the Unit will continue participating in the design and analysis of research projects and other activities of the Center.

### 3.2 Teaching

Increased participation of the Statistics Unit is projected for 1973, in the Course on Planning in Animal Health. Provision is made within the studies calendar for the Course, for the inclusion of aspects of statistics to be developed in accordance with past experience.

Intensive courses on applied statistical methodology will be taught, with special application to health, and directed to officers of animal health services of individual countries or groups of countries, depending on time and opportunity.

3.3 Technical Assistance

Efforts will be made to promote the establishments of information services relating to animal health, or the improvement of these services where they already exist. For this purpose, the most appropriate techniques will be used, geared to the special conditions and needs of each country.

Pilot studies of collection of information by means of sample surveys will be developed.

3.4 Information Sub-Unit at CEPANZO

The Unit will assist in the development of a data bank within the Center which will permit the unification of all available data from a variety of sources, on countries of the region and on zoonoses.

## BRUCELOSIS

### 1. Overall View

Brucellosis is the most important zoonoses in latin America, considering its wide distribution, the burden it represents for the economy and the number of human cases that occur annually.

Bovine brucellosis is the most important from the economic point of view. Its prevalence is high, especially among the dairy cattle in South America. Infection rates are usually lower in Central America and in the Caribbean area.

According to estimates made by 12 latin American countries - both large and small - their annual losses amount to 275 million dollars. With the exception of some countries, such as Canada, Cuba and the United States, which have had control programs under way for several years, most countries lack statistically valid information on prevalence therefore, estimates of losses are accepted with reservation.

Swine brucellosis is the second in importance from the economic standpoint. From the health viewpoint however, caprine brucellosis is more important. Latin America is considered to have the highest prevalence in the world in swine brucellosis. Only a few countries however (11) have data on infection in swine, and these are based on the examination of a small number of samples and of herds. Except for the United States and Cuba, none of the American countries has undertaken swine brucellosis control programs. In this regard, it should be mentioned that Canada is free from swine brucellosis.

As has been stated, caprine brucellosis is the most important from the public health viewpoint. According to the available data, only three latin American countries, Argentina, México and Perú, are faced with this problem. Over 1000 human cases are reported annually in these countries, chiefly due to B. melitensis. Chile has erradicated caprine brucellosis from the Cajón del Maipo, where, in 1954, a rate of 8,6% was found in the 2.190 goats tested. In 1951, 99 human cases were reported in Chile, especially in Santiago, where the present incidence is 4-6 cases annually. Perú has established a control program in the departments of Lima and Ica, based on vaccination with B. melitensis, Rev. 1 vaccine Argentina and México, the other two countries, have no national programs underway.

Ram epididymitis caused by B. ovis is an economic problem. In all countries with important sheep populations such as Argentina, Brazil (Río Grande do Sul), Chile, Perú and Uruguay, there are indications of high prevalence of this infection. None of these countries have control programs.

2. Review of activities carried out during the year

The main emphasis was placed on lending support to the bovine brucellosis control programs of the member countries. Thus, technical assistance was given to help in the design of new programs and for guidance for the programs already underway. The IDB's offer to provide financial assistance to national control programs has encouraged countries to give serious thought to such programs. Dearth of economic resources is one part of the problem. However, it would seem that one of the major difficulties several countries would have to overcome in order to undertake such programs at a national level, is the lack of an adequate infrastructure of veterinary services and trained professionals. This aspect is being taken into account when the programs are being designed, so as to provide for the strengthening of this infrastructure and the funding of training programs. This is probably one of the aspects of planning which is most beneficial for the countries, since it will enable the national services of animal health to discharge their specific responsibilities not only with regard to brucellosis but will also enable them to carry out prevention and control programs of other diseases.

Other activities equally important for the support of control programs were training of personnel, provision of laboratory services and applied research.

Field Advisory Services: A favourable change in the situation was observed in recent years as several countries started national control programs. Others are in the process of program preparation, with the Center providing the technical assistance. During 1972, the IDB approved loans to Colombia and Venezuela for a total of US$ 7,300,000 and US$ 7,500,000 respectively, for brucellosis and foot-and-mouth control programs. An animal health project was submitted to the IDB by the Dominican Republic together with a loan application for US$ 3,750,000, which will be chiefly employed in the control of bovine brucellosis. Honduras and Costa Rica are presently in the process of elaborating their respective projects.

Cuba is conducting successful bovine and swine brucellosis control programs, having now reached the eradication phase. The rate of bovine reactors, which was 4.3% in 1963, had been reduced to 0.39% by 1971 Under the swine brucellosis control program, infected herds are slaughtered off and repopulated with swine, from brucellosis free farms. Serological tests are conducted following repopulation and after parturition. From 1970 to 1971 the number of free units rose from 17 to 46.

Through an agreement with PAHO, a caprine brucellosis control program was started by Peru in the departments of Lima and Ica, for which the B. melitensis Rev. 1 vaccine is being used. With regard to Peru, it is worth mentioning that infection with B. melitensis was demonstrated in "alpacas" in the Puno region, a

finding that posed an economic as well as a public health problem, inasmuch as there were several human cases associated with the outbreak. The origin of the infection in "alpacas" has not yet been determined, nor has their potential as a reservoir for other animal species been ascertained. It is a subject, however, that deserves further study. Uruguay's program for the compulsory vaccination of calves with B. abortus, strain 19 has been in effect for 10 years; the animal health authorities now in the process of evaluating the results obtained so as to be able to define strategy for the future. Argentina and Brazil have regional control programs based on vaccination with strain 19. Ecuador will begin its own program this year with the assistance of the UNDP. The governments of Barbados and Jamaica have bothe submitted animal health projects to UNDP, that are expected to go into effect during 1973, and in which brucellosis control figures prominently. The financial assistance requested to UNDP by Barbados and Jamaica amounted to US$ 120,000 and US$ 507,800 respectively.

During 1972, members of the Center's staff have cooperated in other programs conducted in the following countries: Argentina, Cuba, Guatemala, Costa Rica, Honduras, Mexico, Nicaragua, Peru, Dominican Republic, Trinidad and Tobago. Advisory services were provided to the pertinent authorities on planning, diagnosis, prevalence surveys and control methods.

Training: Members of the Center's staff participated in the teaching of several seminars and courses at regional and national levels. A Seminar for the Caribbean countries was held in Port of Spain, Trinidad, from 25-28 October, with the participation of 98 professionals from 15 countries and territories.

The Center collaborated with the Ministry of Agriculture and the "Universidad Autónoma de México" in a national course on brucellosis which took place in Mexico City from 23-30 May, and was attended by 46 veterinarians from the National Brucellosis Campaign. Another national course was organized in Guatemala, from 9-14 October, with the participation of 25 veterinarians from the Ministry of Agriculture and the University of San Carlos. A course on the diagnosis of human brucellosis for hospital laboratory workers was held in Ica, Peru. Fellows from Brazil, Chile, Surinam and Venezuela received individual training at the Center in diagnostic techniques, vaccine and antigen production and control of biologicals.

Laboratory Services: Laboratory services offered by way of support to the countries' programs consisted in the quality of antigens and vaccines, the typing of strains isolated from humans and animals, and the elaboration and distribution of standard antigens and strains for production purposes.

From the moment the Center started its activities, the need was felt for standardized antigens and adequate diagnostic techniques. Sixteen antigens produced in 7 countries were submitted to quality tests: one for animal use and six for human use proved unsatisfactory. It would be desirable that all the countries which produce antigens

submit samples to the Center for reference testing.

There are several countries which presently control batch by batch all B. abortus vaccines, strain 19 they produce. In other countries, however, this control is carried out sporadically. It is obvious that such control should be carried out systematically if the vaccination programs are to produce the expected results.

During 1972, only 3 countries submitted vaccine samples to the Center for reference control. Out of the seven batches examined, 3 were satisfactory. Vaccine control should be organized by animal health authorities, if possible, even before the establishment of brucellosis control programs to assure the results of the vaccinations carried out on a voluntary basis.

The Center continued collaborating with the countries in the typing of Brucella strains isolated from humans and animals. The main purpose of this activity is to contribute to a better understanding of the epidemiology of brucellosis in latin America. Twenty-five strains submitted by 4 countries were typed during the year. The results of typing so far demonstrate the presence in latin America of biotypes 1, 2 and 4 of B. abortus, biotype 1 of B. suis and biotypes 1 and 2 of B. melitensis (the latter, from human cases occurred a long time ago). Several strains whose characteristics do not correspond to any of the known biotypes have also been received.

Antigens and other biologicals have been supplied to 18 countries for reference purposes and - in some cases - for surveys or emergencies. The fact that the countries are stepping up their demand for these biologicals compels the Center to increase their production. Additionally, the Center had to provide B. melitensis, Rev. 1 vaccine that is commercially not available. In 1972, Peru received 64,000 doses for its brucellosis control campaign.

The Center was also called upon to provide laboratory support for routine brucellosis diagnosis for those countries lacking either qualified personnel or adequate facilities. Over 8,000 samples of human sera and about 1,200 of bovine sera from 4 countries were tested.

Research projects: These projects have focussed principally on evaluating the different types of vaccines and diagnostic techniques.

During the past two years the brucellosis unit worked on 19 projects. It was possible to determine the usefulness of reduced doses of B. melitensis, Rev. 1 vaccine, administered to adult goats, which solved a practical problem posed by the control campaign in Peru, where the males run together with the goats all the year around making it hazardous to use complete doses of Rev. 1. In the light of the experiments carried out at the Center, it was possible to demonstrate that the reduced doses

confers the same degree of immunity as the complete single dose, with the additional advantage that antibodies disappear earlier. The duration of the immunity conferred by the reduced dosis is still to be demonstrated.

Special attention was given to the fact that several biotypes of B. abortus are present in latin America. A project was undertaken to ascertain the degree of protection that B. abortus, strain 19 vaccine would confer against the different biotypes.

New types of vaccine, which have appeared in recent years, such as B. abortus 45/20, B. melitensis H 38, B. abortus, strain 19 PB and B. suis in water-in-oil adjuvant are being evaluated in order to be able to give adequate orientation to the countries as to their use.

The Center is collaborating with the "Instituto Nacional de Tecnología Agropecuaria" (INTA), Argentina, in the evaluation of a procedure for the immunization of pigs that INTA scientists have devised, and at the same time it is investigating a new type of vaccine to be used for the same purpose.

Studies have been carried out on the value of 6 different serological tests on infected or vaccinated goats. For the purpose of solving problems of large scale production of vaccine, the Center carried out assays defining the most advantageous conditions for multiplication of B. abortus, strain 19 and B. melitensis, Rev. 1 in a fermentor by the batch process. These studies have demonstrated that the Rev. 1 vaccine for goat immunization can be produced in an aereated buffered liquid medium without risk of dissociation and with the additional advantage of a high yield.

The attempts made at improving the agar in gel test which had been devised by the Center for the diagnosis of ram epididymitis have met with success. This simple test makes it possible to carry out mass testing at a very low cost and without special equipment.

With regard to ram epididymitis, it has also been demonstrated that Meriones unguiculatus may serve as an experimental laboratory model for B. ovis infection.

3. Future Action of the Center

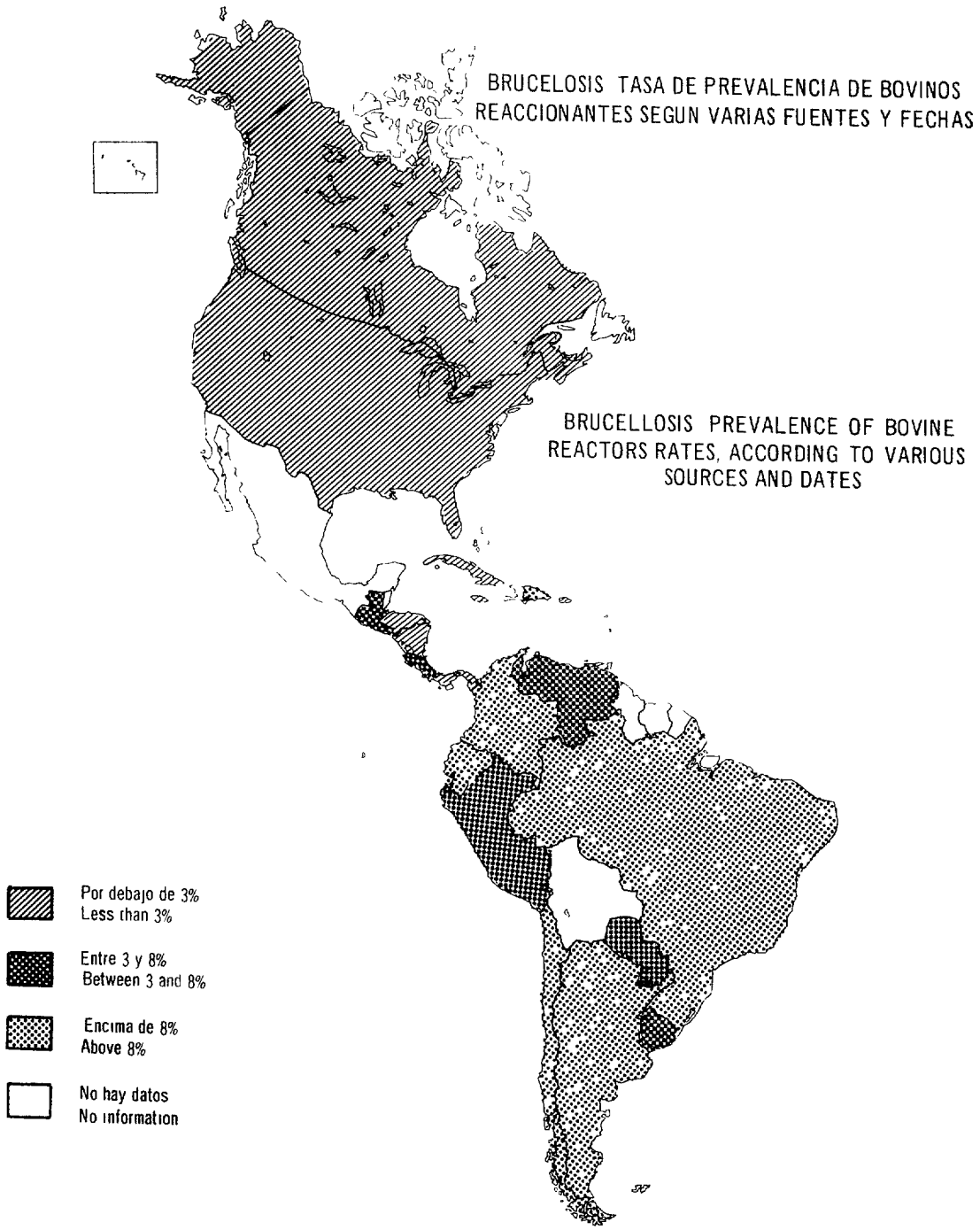
At present, the Center is primarily concerned with strengthening the technical assistance provided to countries engaged in control programs and to those preparing new programs. In the future, the Center intends to continue the promotion of control programs in the member countries where these do not as yet exist.

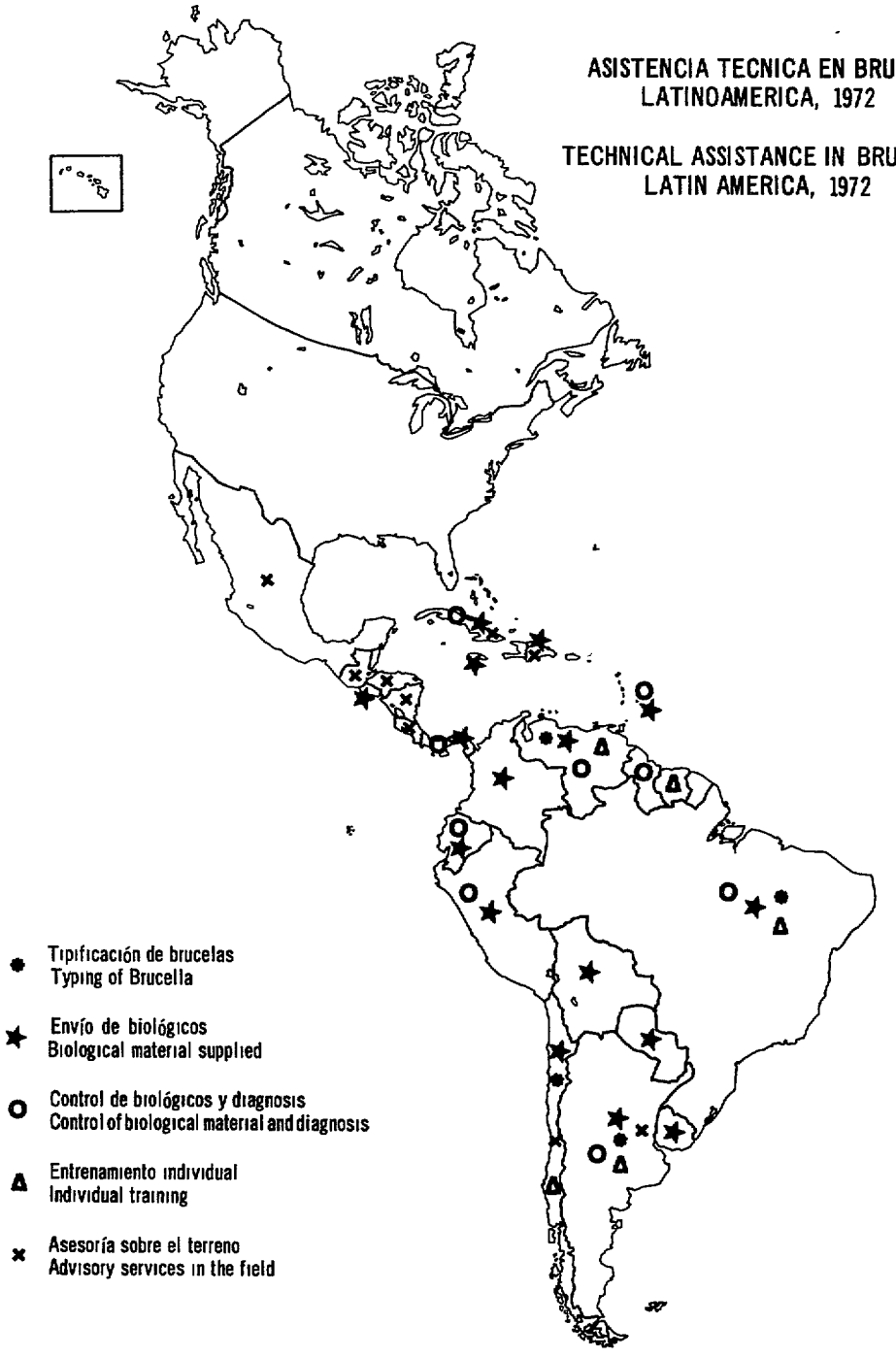
The Center will continue to carry out studies aimed at developing simplified diagnostic tests and will continue to provide

reference strains and antigens, as well as perform quality testing of antigens and vaccines, and typing of Brucella strains.

The Center will also continue with its studies on the evaluation of the use of reduced doses of Rev. 1 vaccine in adult goats and will likewise go on evaluating vaccines and advising their production.

In addition, the Center will continue to sponsor training programs on the production and control of antigens and vaccines, as well as on diagnostic techniques and epidemiology, in order to prepare personnel for present and future programs.


BRUCELOSIS TASA DE PREVALENCIA DE BOVINOS REACCIONANTES SEGUN VARIAS FUENTES Y FECHAS
BRUCELLOSIS PREVALENCE OF BOVINE REACTORS RATES, ACCORDING TO VARIOUS SOURCES AND DATES
Por debajo de 3%
Less than 3%
Entre 3 y 8%
Between 3 and 8%
Encima de 8%
Above 8%
No hay datos
No information


ASISTENCIA TECNICA EN BRUCELOSIS
LATINOAMERICA, 1972
TECHNICAL ASSISTANCE IN BRUCELLOSIS
LATIN AMERICA, 1972
Tipificación de brucelas
Typing of Brucella
Envío de biológicos
Biological material supplied
Control de biológicos y diagnosis
Control of biological material and diagnosis
Entrenamiento individual
Individual training
Asesoría sobre el terreno
Advisory services in the field

# HYDATIDOSIS

## 1. Overall View

Considering the global distribution of the parasite, latin America has long been recognized to be one of the areas where infection by E. granulosus reaches its greatest prevalence in both man and lower animals.

Existing data are not adequate to allow a precise quantitative description of the prevalence of infection by the hydatid parasite throughout most of its range of occurrence in the two American continents. Nevertheless, the importance of this zoonosis has usually brought it to the attention of health workers wherever it occurs and most of this information has found its way into print.

The distribution of this infection in the Americas is shown in Fig. 1 and it is observed to exist at varying levels throughout latin America.

In Mexico, the rest of Central America and in the northern countries of South America the infection is sporadic and apparently at a low level of prevalence although a complete evaluation of the problem has not yet been made.

To our knowledge autochthonous E. granulosus infection has not been reported in the caribbean island countries, the Guianas nor in Colombia. With respect to Colombia, however, there exists the possibility that hydatid disease has been recently introduced. An attempt to intensify sheep production involved the importation of more than 25 thousand animals from countries where echinococcosis is endemic (e.g. Argentina, New Zealand and Australia). To date there has been no indication that the parasite is present in those animals, however, the danger will remain as long as the movement of sheep into the country continues.

The absence of E. granulosus thoroughout most of the vast tropical lowland areas of Central and northern South America is probably determined more by the scarcity of suitable intermediate hosts than by climatic factors exerted directly on the parasite.

It is in the countries of southern South America where infection by E. granulosus reaches its greatest significance. In this region the distribution of the parasite is roughly coincident with the distribution of the sheep population. In terms of both human and animal prevalence (and the consequent losses) the greatest problems exist in Uruguay, Argentina, Chile, Peru and southern Brazil (Fig. 1).

Table 1 shows the annual incidence of surgical cases of hydatid disease reported from those countries of latin America where the disease is most important. Morbidity figures at the national level, however, fail to indicate the true importance of the disease because all populations are not at equal risk. Even in Uruguay, where the average annual surgical incidence rate of 20 per 100

thousand inhabitants is the highest national figure ever reported, almost half of the population lives in Montevideo where they are exposed to a much reduced infection risk. In some of the interior departments the surgical incidence exceeds 80 per year.

Table 1 - Annual Incidence of Surgical Cases of Hydatidosis in several latin American countries.

| Country | Year | Incidence per 100,000 inhabitants | Source |
|---|---|---|---|
| Argentina | 1966 | 2.0 | Sec.Estado Salud Pública, 1967 (17) |
| Chile | 1960-1967 | 6.8-8.6 | Neghme y Silva, 1970 (8) |
| Peru | 1966 | 1.0 | Min. Salud Pública y Asist. Social,1967(5) |
| Uruguay | 1962-1968 | 17.9-23.8 | Purriel et al., 1970 (10) |

Similarly in Argentina, Brazil, Chile and Peru the infection exists in highly endemic foci where recent surveys have demonstrated that human morbidity reaches the highest levels yet reported anywhere in the world.

Among the countries of latin America it is only Uruguay for which systematically collected data is available concerning the distribution and prevalence of human hydatid disease throughout the entire country. Retrospective surveys of all the country's hospitals and surgical clinics for the years 1962-71 have revealed that, in that country of less than 3 million inhabitants, between 500 and 600 hydatid cases are operated on each year with an average case-fatality ratio averaging 6%. The annual surgical incidence for that country, which averages 20 per 100,000 inhabitants, gives Uruguay the dubious honor of being number one in the world. But these diagnosed cases are only the tip of the iceberg because thoracic radiographic surveys carried out since 1948 have detected average prevalence of 30 cysts per 100,000 persons radiographed in the intrathoracic localization alone. Autopsy studies of persons dead for causes not related to hydatid disease reveal an even higher prevalence. With the exception of the urban Department of Montevideo, cystic infection in humans and livestock occurs at a high level throughout the country. Between 1963 and 1965, of more than 50 thousand slaughtered cattle examined at the "Frigorífico Nacional", 60 percent were infected with cysts and the rate for older sheep reached 100 percent. High rates of ovine infection have also been recorded in adult sheep sacrificed in Argentina. During 1971 in Corrientes Province hydatid infection was found in 66% and in

1972 ovine infection was reported to vary from 33 to 89% in different lots of sheep. In Rio Grande do Sul, Brazil, infection was reported in 22% of slaughtered horses.

In some urban and rural communities the dogs primarily become infected from viscera obtained at improperly controlled abattoirs and serve as a source of human infection. A variety of occupational and other factors influence the probability of an individual entering the parasite's cycle and becoming infected.

High rates of infection in dogs have been reported from a variety of regions. In Uruguay (18 to 40%), in Argentina (25 to 43%), in the Sierra of Peru (40 to 65%) and in Bolivia 22%.

One important aspect that complicates the control of hydatidosis in animals is the present absence of precise methods of diagnosis. Traditional parasitological methods do not usually detect all infected dogs and in domestic animals. Due to the lack of sensitive and specific immunodiagnostic tests the only way to accurately detect cystic infection is at slaughter. On the other hand, immunodiagnostic tests have been demonstrated to be quite useful for assisting the diagnosis of infection in man.

Certain characteristics of latin America such as low socio-economic levels of the rural population, large and uncontrolled canine populations, vast continental geographic conditions and the occurrence of large sylvatic animal populations which are potential hosts for E. granulosus may create special problems for control. It has been questioned whether "conventional" control measures applied in these areas can be expected to achieve the same results as in Iceland, New Zealand and Tasmania. Rather, in these zones, it may be necessary to evolve different approaches.

Economic losses: Economic losses due to human hydatidosis are difficult to estimate accurately. Losses arise from the prolonged hospitalization required by most patients (generally about 7 weeks). Since about 70 percent of all hydatid cases are diagnosed in individuals between 20 to 60 years of age (Neghme and Silva, 1970) the reduction in the communities effective labor force is considerable. In Argentina public health authorities estimate current hospitalization costs at US$ 150,000 and Neghme and Silva (1970) give a figure of US$ 300 to US$ 500 thousand per annum for Chile. Neither figure takes into account welfare payments or loss of manhours.

In Uruguay, Purriel et al. (1965) estimated that during 1962 to 1964 the costs of surgical attention to the cases of hydatidosis admitted to five major hsopitals amounted to US$ 200,000. Losses to the diseased individual are even greater, however, because they do not cease upon his release from the hospital. A follow up survey of 357 surgical cases in Uruguay revealed that approximately 60% were unable to return to work on normal household routine before 4 months following hospital release and 40% were incapacitated 6 months or longer (Purriel and Schantz, 1971).

Directly measurable losses to the livestock industry result from the condemnation of infected viscera. These losses as calculated in all of the endemic countries are considerable. In Uruguay, for example, it was estimated that losses due to the rejection of infected bovine viscera totaled US$ 300,000 per year.

2. Review of activities during 1972

The hydatidosis unit provides technical and advisory services related to the planning, organization and execution of programs of hydatidosis control in the countries of the region. In addition the unit provides training opportunities, laboratory services, carries out research and distributes technical reports on hydatidosis.

During 1972 the Center participated in training courses and seminars. The Center collaborated in the development of a two week course on Epidemiology and Immunodiagnosis of Hydatid Disease at the Universidad Nacional de San Agustín in Arequipa, Peru. This course was attended by more than 80 professionals from Peru, Chile, Bolivia, Argentina and Colombia. Furthermore, 5 fellows from Uruguay and one from Surinam received training in serodiagnosis at the Center.

The Center provided reference service for immunodiagnostic procedures. Additionally a uniformly produced and evaluated skin test antigen was distributed to other workers in the field in an attempt to promote the standardization of this technique. A total of 8050 doses of this antigen with the corresponding control solution was distributed to official groups in Argentina, Brazil, Peru and Uruguay. Routine diagnostic examinations were performed on 56 patients attended in hospitals in Buenos Aires, and Peru. Additionally 1780 sera were tested serologically for collaborative surveys carried out in Argentina and Uruguay.

Technical advisory services were offered in 1972 to national authorities from Uruguay and Argentina concerning the evaluation of pilot projects of hydatidosis control. The projects in both countries were initiated in 1970. The Center collaborated closely from the beginning in the design, implementation and subsequent evaluation of these projects. Additionally the Center has provided training for the staff of these projects and carried out epidemiological research in collaboration with both groups. A major activity in 1972 was assistance to Uruguay in the design of a control program at the national level which will involve a request to the Interamerican Development Bank for its financing. The Center also participated with authorities from Peru in the planning stages of a pilot project to be implemented within the Agrarian Reform Program.

An important research activity during 1972 were the epidemiological studies carried out in collaboration with the authorities of the Uruguayan and Argentine pilot control project. Such studies

had as their objective the provision of baseline data of infection prevalence against which to measure future progress. Immunodiagnostic tests were also evaluated for use as epidemiological tools. Studies continued to define the importance of sylvatic animals as reservoirs of infection for domestic animals and man.

In terms of clinical diagnosis an exhaustive evaluation was carried out of a wide range of serological techniques in order to define their relative sensitivity and specificity. This study was carried out collaboratively with the "Laboratorio de Inmunoparasitología" of the Facultad de Medicina in Uruguay.

Research activities in basic immunology have been addressed primarily to the problems of identification, origin, and mechanism of entry into the cyst of host immunoglobulins. This line of research may permit a better understanding of the host's tolerance of hydatid cysts.

Further documentation at the Center of the developmental characteristics of hydatid disease in various laboratory animals has been of direct usefulness to other projects involved with research programs in the biology, immunology, and the chemotherapy of hydatid disease by providing models in which research can be carried out rapidly, reliably and economically.

A multidisciplinary approach to the problem of lack of effective chemotherapy was initiated at the Center in collaboration with University and private institutional research scientists in Buenos Aires. This approach includes not only drug screening programs in dogs and laboratory animal models, but also basic studies in hydatid cyst metabolism and permeability characteristics.

The Unit disseminates pertinent technical information by publishing the results of its research, periodic preparation of reviews and teaching manuals and participation in scientific meetings and seminars. During 1972 the Center participated in the following meetings: Tenth International Congress of Hydatidosis (Arequipa), First Argentine Congress of Parasitology (Buenos Aires), Joint meeting of the American Society of Tropical Medicine and Hygiene and the American Society Parasitology. In addition, lectures and seminars were presented to a variety of groups in Argentina, Uruguay, Peru and the United States.

3. Future action

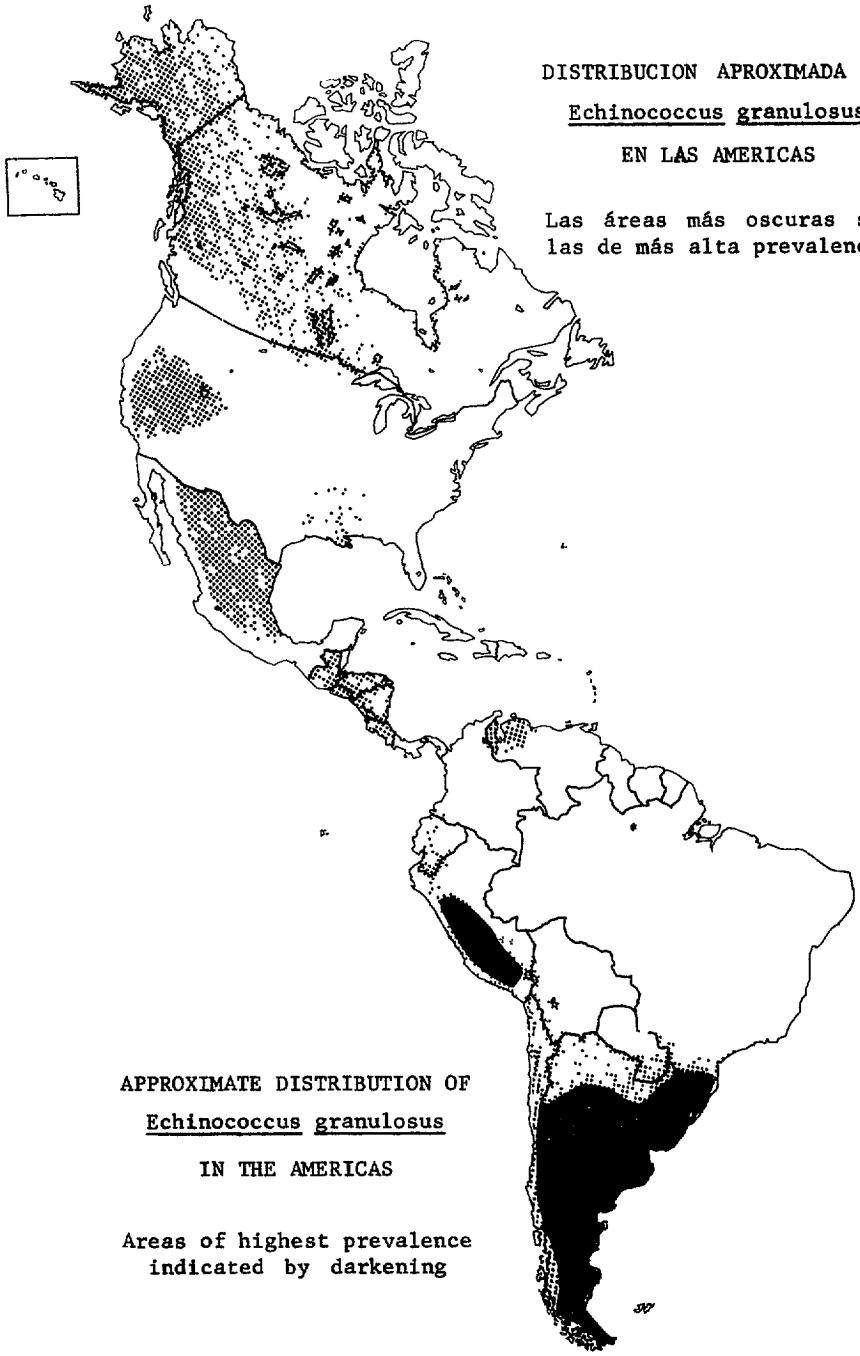
The Center will continue its activities in hydatidosis during the coming years along the following lines:

a) Continue to provide technical assistance in pilot control programs,

b) Continue research activities directed toward the resolution of parasitologic diagnosis in dogs and immunodiagnosis in man,

c) Continue research activities with the objective of improving control methods under local conditions and the evaluation of different methods of medical education. Continue basic and applied studies of chemotherapeutic studies in the dog and man,

d) Initiate studies in collaboration with national authorities toward the determination of economic losses suffered by the countries due to infection in livestock.



DISTRIBUCION APROXIMADA DE

Echinococcus granulosus

EN LAS AMERICAS

Las áreas más oscuras son las de más alta prevalencia

APPROXIMATE DISTRIBUTION OF

Echinococcus granulosus

IN THE AMERICAS

Areas of highest prevalence indicated by darkening

# LEPTOSPIROSIS

## 1. Overall view

Leptospirosis has a world wide distribution. Many cases and outbreaks of leptospirosis, in animals as well as in man, have not been identified because of the lack of specialized diagnostic laboratories. This lack is particularly evident in latin America, and allied with this, is a parallel lack of personnel trained in the diagnosis of leptospirosis. Physicians and veterinarians, are not, moreover on the alert for this disease. Severe human epidemic have ocurred in Barbados. In northem Brazil, sporadic human cases have been reported. Smaller outbreaks are reported from other countries which have appropriate laboratory facilities. Due to the high prevalence of brucellosis, it is thought that many outbreaks of leptospirosis in cattle are masked or mistaken for brucellosis Nevertheless, outbreaks of leptospirosis in cattle with considerable economic loss, are known to have occurred in Argentina and in Chile. For the most part L. pomona has been responsible.

## 2. Review of Accomplishments in 1972

The Center continued in its role as a reference center for latin America, and provided training in diagnostic tecniques, distribution of biological material, typing of strains and applied research

The Center received one fellow for long term training, from each of the following countries: Barbados, Dominican Republic and Venezuela.

The trainee can acquire a thorough knowledge of diagnostic procedures and techniques. He is thus in a position of being able to undertake all phases of laboratory diagnosis on return to his own country. Hopefully, this will eventually result in making laboratory services available where previously there were none. Hence the great importance attached by the Center to this type of long-term training, for it considers that only through the establishment in the area of diagnostic laboratories with qualified personnel will the countries become acquainted with the basic facts about leptospirosis which are, at present, barely known.

Diagnostic services: Tests were carried out on 1283 sera from humans and different animal species that were submitted to the Center for reference diagnosis from countries which lack adequate laboratory services for the diagnosis of leptospirosis. All the sera were tested against 12 different serotypes. A high number of reactors was found in all samples. It is worth mentioning that reactors to serotype L. autumnalis are frequent in Barbados and that reactors to L. hebdomadis predominate in all countries. Reactors to L. pomona have also been found in bovine sera.

In a dairy farm in the province of Buenos Aires, Argentina, where a large number of abortions was observed, the examination of 131 sera demonstrated the presence of a high proportion of reactos to L. pomona

in the group of animals which had aborted. The sera proved negative for brucellosis.

Two strains isolated from rats and mice, received from Barbados, were typed, respectively, as L. icterohaemorrhagiae and L. ballum (tentatively).

Distribution of biological materials: During 1972, the Center supplied 187 strains of different reference serotypes for diagnostic purposes, to 9 countries. A further 77 anti-leptospira sera were distributed for reference purposes to 4 countries.

Research projects: The Center succeeded in solving a problem common to many tropical and subtropical countries, namely, that blood samples sent to diagnostic laboratories are exposed to long journeys and high temperatures. As a result of the experiments carried out at the Center it was demostrated that sand and sugar are the most suitable materials to use in these cases for protection purposes.

Sand was chosen for its absorbing qualities when dry, and because it permits the complete absorption of the serum; sugar was chosen on account of its bacteriostatic action and because it dissolves completely without affecting antibodies. After keeping the dessicated sera on sand or sugar either at room temperature or at 37°C for 2 months, no reduction was observed in the titers. This was in contrast with the rather poor results obtained with the same sera kept in liquid state and refrigerated.

Through the incorporation of neomycine to culture media, satisfactory results were obtained in the isolation of leptospira from contaminated material. This method will enable countries to perform diagnoses even on contaminated samples as well as conduct epidemiological investigations.

Also successful was the attempt to solve the problem faced by laboratories with respect to the preservation of leptospira strains. It was demonstrated that the incorporation of activated animal carbon to Fletcher's solid medium prolongs the survival of leptospira.

The isolation from bovine kidneys of 6 leptospira strains belonging to the Hebdomadis group was also significant for, once these strains are typed they will serve to identify the serotypes responsible for the high rate of serological reactors to this group.

L. tarassovi and L. pomona strains have been isolated from a high percentage of pig kidneys, which serves to confirm the fact that swine are an important reservoir for pathogenic leptospirae and swine therefore, deserve special attention in epidemiological studies and control programs.

3. Future action of the Center

The Center will continue to play a significant role as regional reference center, inasmuch as it is the only institution in latin America which can supply to the countries different serotypes and sera, offer reference diagnostic services and type isolated strains.

The Leptospirosis Unit will devote increasing attention to the provision of training opportunities in the diagnosis of leptospirosis through individual and group training, so that the member countries may eventually be able to establish their own diagnostic laboratories. With regard to research, the Center's action will be chiefly addressed to the epidemiological and ecological aspects of leptospirosis. In this connection, it will undertake the study of the effect of antibiotics used for leptospiruria, a subject of positive interest to all member countries as it bears on the inter-country movement of animals.

In addition, the Center will carry out a survey of laboratories in the Americas with a view to obtaining the most comprehensive information possible on incidence, personnel training and diagnostic techniques. It is hoped that the information gathered will serve to estimate more accurately the losses due to this disease and will eventually allow the development of plans for its control and eradication.

The Center's plans for the future also include encouraging countries to conduct national surveys on the prevalence of leptospirosis.

## FOOD MICROBIOLOGY

### I. Overall View

Most countries of the area export food, either as a raw material or as processed or semi-processed products. Latin America is rightly regarded as the great reservoir of animal proteins in a world increasingly hungry for, and short of protein. As the increase in demand is accompanied by increase in quality, so do requirements by importers, who insist on the improvement of the hygienic and sanitary conditions of the products they purchase.

With regard to the meat intended for exportation, it is expected that the progress made in the zootechnical field and in the fight against the zoonoses will result in an increased supply of high quality livestock. This calls for adequate facilities, modern equipment and the efficient application of advanced technology in packing plants. Moreover, it is imperative to find a solution to the problems posed by canning and to improve the hygienic conditions related to the processing, storage and transportation of foodstuffs. The number of establishments that are at present in a position to meet the importers' requirements are still inadequate, as is the number of qualified veterinary inspectors with a good and up to date knowledge of the proper procedures in the sanitary supervision of slaughterhouses. The lack of compliance with these sanitary requirements results in lower prices being paid to the producers, in a falling demand, and in the displacement of the buyers' market to other geographical areas. When the sanitary deficiencies of the product involve a potential hazard to public health such as is the case with meat contaminated with salmonellae whole batches may be destroyed, returned or re-processed by the importing country. In addition to the obvious economic loss this entails, it is also detrimental to the country concerned on account of the discredit thereby brought upon itself and its products.

The example presented for meat also holds good for fish meal. One of the fish-meal producing countries in Latin America has found itself in most unfavourable situations due to the finding of salmonellae in its product. As a result, it is being forced to invest substantial sums of money in sanitation programs and in the re-conditioning of the premises of its food-processing plants. Similar situations have obtained with regard to other products, a case in point being shell fish with unusually high numbers of staphylococci and coliforms.

The bacteriological contamination of food is also responsible for the spoilage of large quantities of foodstuffs. A substantial proportion of the agricultural production of Latin America has occasionally been spoiled completely owing to enzymatic microbiological contamination, resulting from application of knowledge of food technology and hygiene. This, in turn results from the lack of an adequate infrastructure. From the point of view of public health, it is alarming to consider the high and ever-increasing number of food borne diseases present in Latin America. In one single country, in 1966, 19% of the recorded mortality was due to diseases whose incidence may decrease simply through the application of measures aimed at improving food hygiene.

Deficient hygienic conditions of food are also to be blamed for several diseases which affect children particulary the infant diarrheas which account for a high proportion of the mortality rate.

In a large number of hospitals especially in pediatric hospitals there have been outbreaks of food-borne infections and intoxications caused by inadequate hygienic practices observed in the preparation of food. Similarly, the improper handling and preparation of feeding bottles has given rise to many cases of diarrheas and deaths among babies.

The basic structure for the processing, storage, transportation and marketing of foodstuff are defective and inadequate. The handling and retailing of food takes place in conditions which leave much to be desired, and the personnel in charge lack the elementary principles of hygiene which are indispensable to carry out such operations. In most countries, food is sold in the streets in deplorable hygienic conditions. In many of the food markets the hygienic standards are also deficient Slaughter houses and packing plants, with the exception of those which deal exclusively with meat intended for export, are inadequate and there are many which are not subject to any kind of government supervision.

In view of these considerations on the economic and sanitary aspects of the problem, it seems imperative that a high priority be attached to food control in Latin America. It is most unfortunate that the majority of the countries in the area lack the programs which would be instrumental in attaining this goal. One of the main difficulties lies in the lack of an adequate number of professional and auxiliary personnel, properly qualified for field and laboratory work.

The existing sanitary legislation for the control of foodstuffs is outdated and unsatisfactorily enforced. There is no coordination between the various control agencies and, furthermore, functions and responsibilities are not properly or clearly apportioned. This leads to a wasteful duplication of effort and to the inefficient employment of available human and material resources.

There is a lack of laboratories with adequate facilities and proper equipment to carry out the examination of foodstuffs. This lack, together with the shortage of qualified personnel, pointed out earlier, is to be blamed for the absence of comprehensive epidemiological information on the most frequent food contaminants.

2. Review of the work carried out during 1972

Training has been uppermost among the considerations of the Unit of Food Microbiology and Hygiene during 1972. In addition to the eleven fellows who received individual training in the laboratories at the Centre, the Unit participated in the organization or actual teaching of seven intensive graduate courses which covered specific aspects such as the microbiology of milk, fish seafood and meat and by-products; a main part of the training was devoted to the integral control of foodstuffs. Moreover, the Centre participated in courses and seminars of food control. Reference material was published for use at these events.

It has been one of the main concerns of the Centre to advise on the organization or improvement of central and reference laboratories for food control in several countries.

A new service was offered in 1972, providing for the serotyping of Salmonellae. These strains continue to be supplied for reference purposes.

Laboratory studies designed to examine the epidemiology of salmonellosis in Argentina, by investigating the presence of salmonellae in the faeces of equines, bovines and swine, in the meat fed to these animals, and in some meat by-products, such as sausage.

In order to gain a better understanding of the ecological mecahisms of transmission of these micro-organisms, the presence has of Salmonellae has also been investigated in birds and other sylvatic animals.

In limited studies carried out, it was shown that 17% of the bovines, 27% of equines and 68% of swine eliminate salmonellae with their faeces. Of the sparrows (Passer domesticus) captured in the corrals where horses destined for consumption are kept, 12,8% proved to be carriers of salmonellae. It was a source of concern the finding of salmonellae in a high percentage of the samples of fresh sausages prepared with beef or pork.

In order to determine the role of the human handler in the mechanisms of contamination of beef and equine meat with salmonellae a survey was conducted which proved that 8% of the workers in slaughter houses were carriers of salmonellae.

One of the main etiological agents of the infant infectious diarrheas occurring in the countries of the area is enteropathogenic Escherichia coli. Accordingly, in order to contribute to a better understanding of the epidemiology of this disease, studies have been conducted with a view to investigating the presence of such bacteria in the faeces of bovines, equines and swine in beef and pork, and in the faeces of meat handlers. Out of the 1088 strains of E. coli examined so far, it has been found that 15% correspond to infant enteropathogenic serotypes. The results represent a significant contribution to this alarming problem in the infant population.

The non-therapeutic use of antibiotics in livestock production resulting in the selection of drug-resistant micro-organisms is causing considerable concern. In some countries (USA and Great Britain, for example), this has prompted the authorities concerned with agriculture and health to restrict and even to altogether ban at times the use of such substances in the feed of livestock and poultry. In order to assess properly the problem in these countries and to be able to advise authorities when the pertinent legislations are reviewed, a number of investigations are carried out at the Centre to find out the resistance and the capacity to transfer such resistance in intestinal bacteria isolated from animals (bovines, equines, swine), with and without antibiotic treatment.

Another line of research within the Unit has aimed at establishing the mechanisms of contamination of food during processing and storage with

a view to finding the crucial points of control and be thus able to recommend the moments and places where the application of sanitary measures would be more effective. An important part of this project is the standardization of bacteriological techniques for evaluating the sanitary conditions of abattoirs and the establishment of quantitative criteria for use by authorities concerned with abattoirs. Such standards could then be included in future legislation.

Epidemiological studies have also been carried out on microbiological contaminants with numerous samples of foodstuffs, including meat, dairy products and products of marine origin, with a view to determining the risk they represent to public health and the factors which favour or prevent contamination. With this purpose specialists from some of the countries of the area have been urged to conduct similar studies on these products.

3. Future Action of the Centre

Training opportunities will be increased. An intensive course on food hygiene will be offered for field and laboratory professional personnel.

Individual training on food microbiology will also be increased at the laboratories of the Centre.

The Centre will collaborate in the training of food inspectors and handlers as well as in the training of hospital personnel responsible for the preparation of food.

Veterinary inspectors of slaughterhouses will receive training in intensive annual or bi-annual courses.

The Centre will expand its advisory services with regard to the organization of central laboratories of food control, with the main emphasis placed on microbiological aspects.

The Centre will collaborate in the standardization of analytical techniques for the microbilogical control of food as well as in the improvement of some aspects of bromatological legislation in the countries of the area.

The Centre will moreover carry out and promote studies aimed at establishing microbiological standards for some foods.

Additionally the Centre will continue studies aimed at improving the epidemiological information on the chief microbial contaminants of the more widely-consumed, foods, and it will continue to urge specialists in the different countries to undertake this type of studies in their respective areas.

Furthermore the Centre will continue to carry out studies in order to contribute to the epidemiological knowledge of salmonellosis in the Americas.

The Centre will continue publishing Technical Notes and reference material dealing with problems of food microbiology and hygiene in order to contribute to the improvement of the programs of quality and safety control of foodstuffs.

# RABIES

## 1. Overall View of Rabies in the Americas

1.1 Canine Rabies: In this Region the principal vector of rabies in all domestic species, is the dog. The consequences for human health are obvious. During 1971, more than 22,000 cases of rabies in dogs, were reported. Even though a reduction in the number of cases for 1972 was evident, it is too soon to draw any valid conclusion regarding the significance of this decrease. In part, however, this may be attributable to the control programs established in several major cities in latin America; on the other hand, the reduction in number of cases may only be an apparent one, and may be a reflection of the delay in reporting by countries to the Rabies Surveillance service operated by the Center. Again changes in criteria concerned in reporting, such as occurred in Mexico (see Zone II) may be responsible.

For an analysis of the present status of canine rabies by Zones of PAHO, see maps 1.1 a and b.

Zone I: Canine rabies control programs have been developed only in the western part of Venezuela. The production of canine rabies vaccine for the Zone does not cover more than 16% of the estimated requirements. Diagnostic laboratories are fairly well distributed geographically, and 97% of the rabies cases are confirmed by laboratory diagnosis. There is a significant decrease in the number of cases, and it is thought that in this instance, this is due to the control programs themselves.

Zone II: A marked decrease in the number of cases of canine rabies is evident. This is probably due to the fact that Mexico ceased to report clinical cases of canine rabies as from February 1972. The production of canine rabies vaccine is sufficient to cover only 19% of the estimated requirements of the area. Apart from the program being carried out along the northern U.S. Mexico border, there are no organized control programs in the country, and the diagnostic services do not cover the area needs.

Zone III: The number of rabies cases continue at a constant level. Apart from Panama, there are no programs in operation. The production of rabies vaccine is sufficient for 1% of the estimated needs. There appears to be adequate laboratory diagnostic facilities, with 72% of cases confirmed by laboratory examination. In El Salvador, however, only 24% of cases are so confirmed. It should be pointed out that the relationship of cases of rabies in animals to cases of human rabies, is quite low. This would indicate some deficiency in the area of animal disease surveillance within the country.

Zone IV: A reduction of approximately 5,000 cases has been observed in the figure for 1972 as contrasted with that of

1971. The rabies control programs developed in Lima-Callao, Peru and in the Valle del Cauca, Colombia, have been quite efficient, and to some extent, this may account for such a reduction in number of cases. The countries of this Zone produce 23% of the canine vaccine required. Although there exists a good network of laboratories, only 26% of animal rabies cases are confirmed by laboratories. It is evident that a greater degree of coordination should exist between the Ministries of Public Health and of Agriculture if better use is to be made of existing laboratories.

Zone V: Programs of urban rabies control have been developed in several cities in Brazil. In some instances these programs have not reached the goals set, and this has been due, generally, to economic factors. The problem of canine rabies, therefore, continues. Brazil produces approximately 5% of the estimated vaccine needs. Diagnostic laboratories have gradually included up to date techniques and this has been reflected in an increased proportion of laboratory confirmed cases of rabies.

Zone VI: Countries in this Zone produce 63% of the vaccine required. This Zone includes Uruguay, at present considered free from rabies. Canine rabies control programs are in operation in the greater Buenos Aires area of Argentina, and in the Santiago-Malleco area of Chile. A similar program is underway in Asunción, Paraguay. Uruguay does not have a surveillance system in operation, nor effective laboratory facilities for diagnosis or for vaccine production in the case that rabies may be re-introduced into the country. As in the case of El Salvador, attention is drawn to the relationship animal cases to human cases in Chile. The situation here is very similar, with 20 animal cases of rabies to 1 human case during 1971 and only 11 animal cases of rabies to 1 human case during 1972. This is compared with the average of 70 animal cases per human case for the remaining countries of the Americas during the three and a half years in which the rabies surveillance service has been in operation. Throughout the countries of Zone VI however, an increase in the proportion of cases confirmed by laboratory diagnosis, has been noted. This proportion has increased from 45% in 1969 to 93% in 1972.

1.2 Bovine Rabies: Bovine rabies in latin America is produced principally by vampire bats. These normally are found from Mexico to the northern Argentine border. The annual loss from this disease has been estimated at many thousands of head of cattle. The reports obtained from the countries affected by this disease, represent a small proportion of the true incidence. The loss of protein due to the death of large numbers of cattle is significant in certain countries, and efforts must be made to reduce this loss. In this region the production of vaccine for bovine use is much below the requirements of the countries; there

are no organized programs in operation. Insufficient use is made of available laboratories, and there is room for improvement in this area, by better coordination between health and agriculture, for joint use of existing facilities.

Research carried out at the Center has shown that vaccines already exist which can offer solid protection to bovines, and as a result, rabies in cattle can be brought under control. In addition, in certain selected areas, it has been shown that vampire bats can be controlled by fumigation and by blocking of their refuges. The U.S. Fish and Wildlife have developed the use of an anticoagulant (diphenadione) for vampire bat control. These procedures, allied with a good surveillance system on the dynamics of vampire bat populations monitored by relative census information, permit the adoption of timely measures which can contribute to reduced incidence of rabies in cattle.

2. Summary of activities in 1972

2.1 Laboratory Services. Laboratory reference services of the Center were utilized in potency testing of 34 different vaccines for human and animal use, sent to the Center. Of these, 24 were satisfactory. Of 243 brain samples sent to the Center for diagnosis, 52 were positive by the use of immunofluorescent techniques and by mouse brain inoculation.

Reference reagents for the production and control of rabies vaccines were produced by the Center and distributed to requesting countries. Similarly,marked antigen and other reagents for diagnosis were supplied on request.

2.2 Field Services. The Epidemiological Surveillance Service for rabies continued to report on the status of the disease in the countries of the Region. During 1972, a total of 12 monthly reports and 2 semester reports were published. The detailed analysis of this service is presented as Annex 2.

The second survey on production of rabies vaccine in latin America was carried out. At this time, the Center is receiving preliminary replies.

The Center continued during 1972 its collaboration with the National Animal Health Service, Argentina (SENASA), the program of vampire bat control in Santiago del Estero, in the north central area of the country. Water wells in an area of 30 Km by 50 Km were fumigated and covered with protective material. This area is located ahead of an advancing wave of rabies, travelling from north to south. This procedure effectively prevented rabies from occurring in cattle in the working area, and it was observed that the epizootic wave continued along the western margin of the control area.

With the cooperation of SENASA, the Center continued its studies on a relative census of the vampire bat population in

north eastern Argentine. This will permit a better understanding of the epizootiology of the disease in vampire bats and in cattle. On the other hand, evidence has been obtained of the transmission of rabies from vampire bats to other wildlife in areas where bovine rabies exists.

Technical advice on post vaccinal reactions and on control programs has been provided by the Center to the health authorities of Argentina (Buenos Aires and Mendoza) and of Chile. Similar advice on the dynamics of vampire bat populations was given to the Ministry of Agriculture, Brazil (Recife) and on rabies vaccine schedules to Colombia (Popayán). Technical advice was also provided to the health and veterinary services of Cuba, Mexico and Venezuela on the production and control of rabies vaccines for human, canine and bovine use. Assistance was provided to the laboratory diagnostic facilities in Brazil, Colombia and Venezuela.

2.3 Training. A total of 23 fellowship months of training in rabies was provided to professionals of the Ministry of Agriculture and of Health and of Universities of 6 member countries. This training was in the field of rabies vaccine production and control, diagnosis and cell culture for rabies vaccine production.

Personnel of the Center collaborated in national courses on diagnosis, held at the Veterinary Investigation Center at Maracay, Venezuela, at the Veterinary Faculty, Montevideo, Uruguay, and at the National Institute of Special Health Programs, Bogotá, Colombia. In this latter course, the majority of participants were members of the Livestock and Agricultural Institute of Colombia.

2.4 Research. The Center is carrying out a total of 17 projects on rabies, concerning the improvement and evaluation of vaccines for human and animal use, the development and evaluation of new diagnostic techniques, immunity, pathogenesis, epidemiology and ecology of rabies in man and in animals both domestic and wildlife. During 1972, seven such projects were successfully brought to completion, and a total of 8 papers were prepared. Of these, five were published in scientific journals of various countries.

## 3. Future Action of the Center

3.1 In the field of diagnosis: In the latin American countries, in the Ministries of Agriculture and of Health, in the Universities there are more than 70 diagnostic laboratories equipped with sufficient human and material resources to permit them to use up to date diagnostic techniques. The distribution of these laboratories, and the degree of training reached by the staff, appear to be satisfactory. Nonetheless, during the last three years, only about one half of the reported cases of rabies in man and in animals were supported by laboratory confirmation. There seems to be a serious degree of under-utilization of available laboratories. The following steps are suggested to improve this situation:

3.1.1 PAHO might be requested to promote studies to determine the reasons why better use is not made of laboratories.

It is probable that the cause of this bottleneck may indicate that there is a more general problem, quite distinct from any connection with rabies diagnosis.

3.1.2 Without prejudice to the above, in the short term view, it appears urgent that a better degree of coordination exist between the Ministries and Universities. PAHO and the Center would be in a position to provide assistance in such an area.

3.2 Vaccine Production: In latin American countries there are over 40 laboratories engaged in the production of rabies vaccines for animal use. During recent years, this production has been insufficient. For example a total of 3.5 million doses of canine rabies vaccine were produced, leaving a deficit of 14 million short of need. A total of 6.1 million doses of bovine rabies vaccine was produced. Many millions of doses more are required.

This bottleneck in vaccine production appears to be a principal obstacle to rabies control in animals. As an example, it may be stated that in 1972, the Argentine authorities requested PAHO to obtain a million doses of canine rabies vaccine. It was not possible, under market conditions prevailing at that time, to comply with this request.

It would appear that the solution to this problem cannot be solved simply by looking beyond the latin American area. The Center and PAHO should concentrate assistance to 3 or 4 laboratories of the Region, and thus encourage stepped up production of vaccines, by means of subsidy from PAHO and technical advice and reference services provided by the Center. Such a policy would permit a solution to the deficit anticipated for the 5 year period 1973-1977.

3.3 Applied Research and Technical Assistance

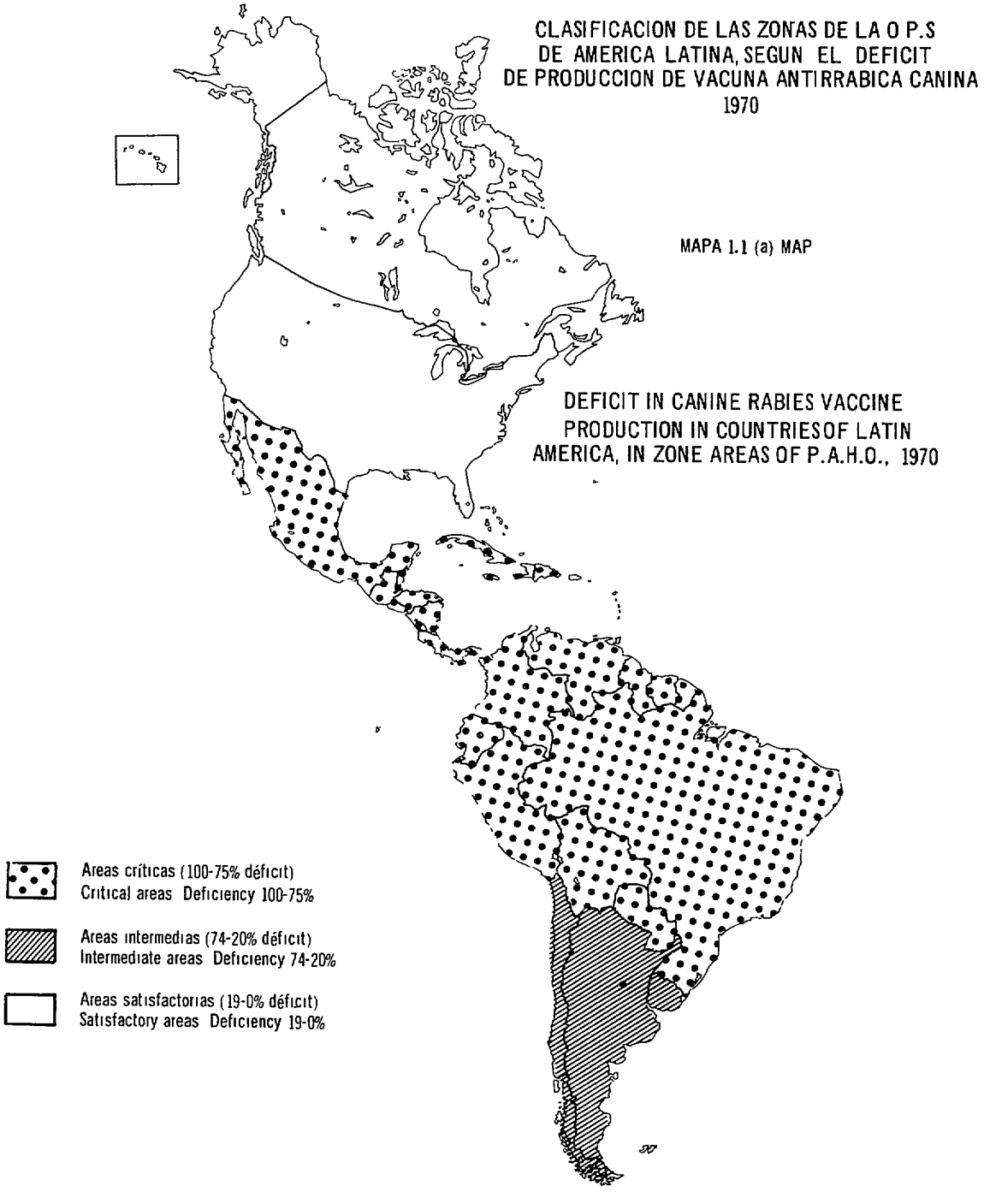
3.3.1 The Center will continue to strengthen within the limits of its resources, the Epidemiological Surveillance Services, with the ultimate goal of being able to provide "information for action", and not simply a collection of data. Within the general informative field, the Center will carry out periodic surveys of diagnostic facilities and vaccine production units.

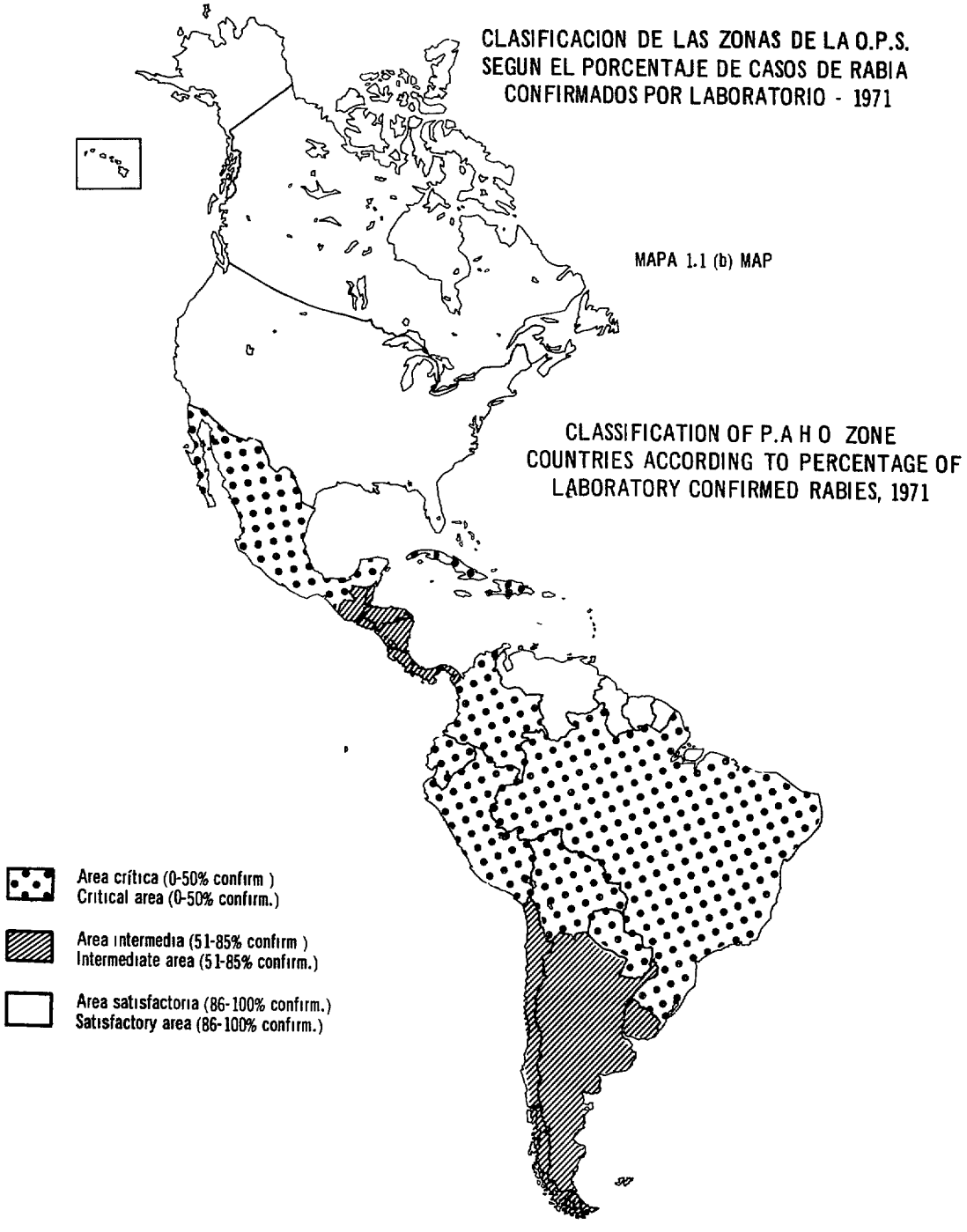
It will also keep a watchful eye on the index provided by the relationship of animal cases to human cases, and when indicated, encourage the studies and corrective measures that are indicated.

3.3.2 The Center will continue to provide technical assistance in the production and control of vaccines, in the development

of diagnostic techniques, as well as in epidemiological and ecological procedures. Reviews will constantly be made of vaccine schedules. With regard to the application of ecological control measures, the Center will provide training in vampire bat control, with special emphasis on bovine rabies programs. It will also continue providing such reference services as are required for control of vaccines and for diagnosis.

3.3.3 The Center will broaden its technical assistance program in canine and bovine rabies control. Again, the Center will propose the creation of pilot areas which will permit of trials of vampire bat control, under the technical supervision of ecologists, using newly developed techniques. Other pilot areas for the development of bovine and canine rabies control will be developed.


CLASIFICACION DE LAS ZONAS DE LA O P.S
DE AMERICA LATINA, SEGUN EL DEFICIT
DE PRODUCCION DE VACUNA ANTIRRABICA CANINA
1970
MAPA 1.1 (a) MAP
DEFICIT IN CANINE RABIES VACCINE
PRODUCTION IN COUNTRIESOF LATIN
AMERICA, IN ZONE AREAS OF P.A.H.O., 1970
Areas críticas (100-75% déficit)
Critical areas Deficiency 100-75%
Areas intermedias (74-20% déficit)
Intermediate areas Deficiency 74-20%
Areas satisfactorias (19-0% déficit)
Satisfactory areas Deficiency 19-0%


CLASIFICACION DE LAS ZONAS DE LA O.P.S.
SEGUN EL PORCENTAJE DE CASOS DE RABIA
CONFIRMADOS POR LABORATORIO - 1971
MAPA 1.1 (b) MAP
CLASSIFICATION OF P.A H O ZONE
COUNTRIES ACCORDING TO PERCENTAGE OF
LABORATORY CONFIRMED RABIES, 1971
Area crítica (0-50% confirm )
Critical area (0-50% confirm.)
Area intermedia (51-85% confirm )
Intermediate area (51-85% confirm.)
Area satisfactoria (86-100% confirm.)
Satisfactory area (86-100% confirm.)

## TUBERCULOSIS

### 1. The status of bovine tuberculosis in the Americas

It is not possible to establish a definite prevalence of bovine tuberculosis for each country of the Region, owing either to the small number of animals examined or to the fact that the surveys available covered only selected groups of cattle or more limited to selected geographical areas; the available data never-the-less provide an indication of the situation in most of the countries concerned.

Bovine tuberculosis is widespread and it is present in all countries in latin America. The rate of infection varies considerably from one geographical area to another and from country to country. The disease is most widespread in South America where the highest infection rates are also found. Tuberculosis in dairy cattle in Argentina, Brazil, Chile, Paraguay, Peru and Uruguay undoubtedly constitutes one of the principal livestock diseases. Moderate infection rates of approximately 2 percent are found in Ecuador and also in Colombia. In Bolivia, knowledge of the situation is practically limited to the Department of Cochabamba, as tuberculin testing had been carried out only in this district, and no data relating to condemnations in the slaughterhouses of this country are available.

A national tuberculin survey in cattle in Argentina was completed in 1972. Within the different areas of the country, typical for milk production, breeding of beef, a random sample of a number of districts was taken. In those selected a number of farms were allocated, again at random, and from each of these a sample of animals randomly selected for tuberculin testing. Of a total of 11,662 cattle tested, 497 (4.3 percent) were positive. The prevalence of positive animals varied according to the type of exploitation from 2.5 percent in breeding farms to 8.5 percent in dairy cattle. Of the 388 farms included in the survey, 147 (38 percent) had positive reactors.

In South America, Venezuela is the only country that is conducting a national campaign for the eradication of bovine tuberculosis. In 18 years, the prevalence has been reduced from 3.5 percent to 0.5 percent, which represents a considerable degree of success.

In Central America and the Antilles, the prevalence of bovine tuberculosis appears in general, to be low. In Cuba, a national eradication campaign was undertaken in 1964; the results are very encouraging since the tuberculin reactor rate in cattle has decreased from 3.24 percent at the begining of the campaign to approximately 0.1 percent in 1972. The situation in Haiti is not known, and in the Dominican Republic tuberculin testing is limited to state farms. In Nicaragua, the infection is reported to be found only in imported cattle and in a few native animals. In Costa Rica, the prevalence is apparently very low but wider surveys are necessary in order to determine the real situation. In most of these countries there is very little information relating to condemnations for tuberculosis in

slaughterhouses. In El Salvador, Honduras and Panama, campaigns for the control of the disease are being conducted; these campaigns are accompanied by appropriate legislation, and financial support is provided by the Governments. However, the tuberculin test can only be applied to a limited number of animals each year due to the shortage of veterinarians. An improvement in the situation has occurred in recent years as the number of veterinarians in the Central American republics has increased, and the prevalence of infection in herds included in the control programmes has been reduced from 3 percent to 1 percent. In North America, bovine tuberculosis is virtually eradicated in the U.S.A. and also in Canada. In Mexico, information is fragmentary but the national prevalence is probably 10 percent or more.

Study of the prevalence of bovine tuberculosis in each country of the Region shows that there is great variation from area to area and that the highest rates are in the milk-producing sheds of the large cities. For example, Sao Paulo, Brazil has 32 percent of positive reactors; Asuncion, Paraguay has 25 percent; Lima, Peru has 40 percent; Montevideo, Uruguay has 10 percent.

Comparison of the figures relating to tuberculin testing and to meat inspection reflects the impact on the dairy industry. The tuberculin test is used mainly in dairy herds, and in all countries the rates of infection obtained by this means of diagnosis are generally much higher than those indicated by the figures for slaughterhouse condemnations.

With some exceptions the rates based on post-mortem examinations of carcasses in slaughterhouse do not exceed 1 percent. The data of this type refer mostly to beef cattle. The method of raising beef cattle and their marketing for slaughter at an early age accounts for the difference in the infection rates in comparison with dairy cattle. A higher seizure rate is observed in Argentina where, in 1969, among 9,565,107 slaughtered animals, 6.8 percent were found to have tuberculous lesions. This figure indicates that, even in the conditions prevailing on extensive ranges such as those in Argentina, the prevalence of tuberculosis may be fairly high.

In many latin American countries, one of the chief difficulties is the lack of uniformity in tuberculins, procedures and interpretation of the test. The use of tuberculin of insufficient potency, and of inappropriate methods of application and interpretation, does not permit accurate knowledge of the problem to be established, or effective control of the disease to be undertaken. For the same reason, difficulties have arisen in international trading of livestock; a number of countries have found positive reactors amongst imported animals which were tuberculin negative in their country of origin. For example, in Paraguay 17 (25.8 percent) of one group of 66 imported cattle gave positive reactions to the tuberculin test, and post-mortem

examination revealed tuberculous lesions in 11 of them.

2. Summary of work carried out by CEPANZO during 1972

Individual training: Fellows from Argentina, Brazil, Cuba, Mexico and Surinam received training in laboratory diagnosis and classification of mycobacteria, or in the preparation of tuberculin PPD.

Reference diagnosis: Tests for isolation and classification of mycobacteria were carried out on 159 samples from animals and man. In addition, 17 strains of mycobacteria were received for classification. Although the majority of strains isolated were *Mycobacterium bovis*, a wide range of different mycobacteria were classified. These samples were not randomly selected, of course, but were submitted for reference diagnosis from field cases which had exhibited some unusual feature, such as para-specific tuberculin sensitivity in the live animal, or in pathology at slaughter.

Quality control of biological products: Twelve batches of BCG vaccine produced in Argentina and seven preparations of PPD and old tuberculin of different origins from Argentina and Brazil, were submitted to biological control tests. All the batches of BCG vaccine were of a satisfactory biological standard, but four of the seven tuberculin preparations were significantly lower in biological potency than was specified on their labels.

Production of tuberculin: Two batches of purified tuberculins, 54 g of mammalian PPD and 22 g of avian PPD, were produced as reference preparations for use in the Pan American Region.

Distribution of biological materials: Tuberculin PPD was supplied to official laboratories or to national control authorities in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Paraguay and Peru. Strains of mycobacteria for tuberculin production were also supplied to Argentina, Chile, Cuba and Mexico.

Field and laboratory advisory services: The Center has continued collaborating with the Ministry of Agriculture and the Secretariat of Public Health, Argentina, through the National Zoonoses Commission, in a demonstration project to eradicate bovine tuberculosis from five pilot areas in the Provinces of Buenos Aires, Cordoba and Santa Fe.

The Center's specialist visited Mexico, Cuba and Guatemala, at the invitation of the respective Governments, to advise on the production of tuberculins, the technique and interpretation of the tuberculin test in cattle, and the planning of different stages of national eradication programmes against bovine tuberculosis.

Research activities: A number of research projects are in progress at the Center, all related to the work of the Unit as a Reference Laboratory for the typing of mycobacteria and the control of tuberculins and BCG vaccine.

Guidelines for bovine tuberculosis projects: The Center's specialist participated in the meeting of the PAHO Advisory Study Group on Bovine Tuberculosis, held in Washington in February 1972. The final report of this group, including the "Guidelines and Criteria for the Planning, Conduct and Evaluation of Bovine Tuberculosis Eradication Programs", was presented to and approved by RICAZ V, held in Mexico, April 1972.

3. Future activities of the Center

The principal objective of the tuberculosis project is to provide from the Zoonoses Center advisory and technical services to the governments of the hemisphere in the planning,organization, execution and evaluation of programmes for the eradication of bovine tuberculosis, in order to protect human health and the economy, and to increase food production.

In establishing bovine tuberculosis control programmes, uniform activities should be performed to meet the following requirements:

a. Definition of the problem, including determination of causal and spreading factors.

b. Establishment of pertinent control measures with the final aim of absolute eradication of the disease.

c. Evaluation of the effectiveness of control measures implemented.

The main aims for 1973 are :

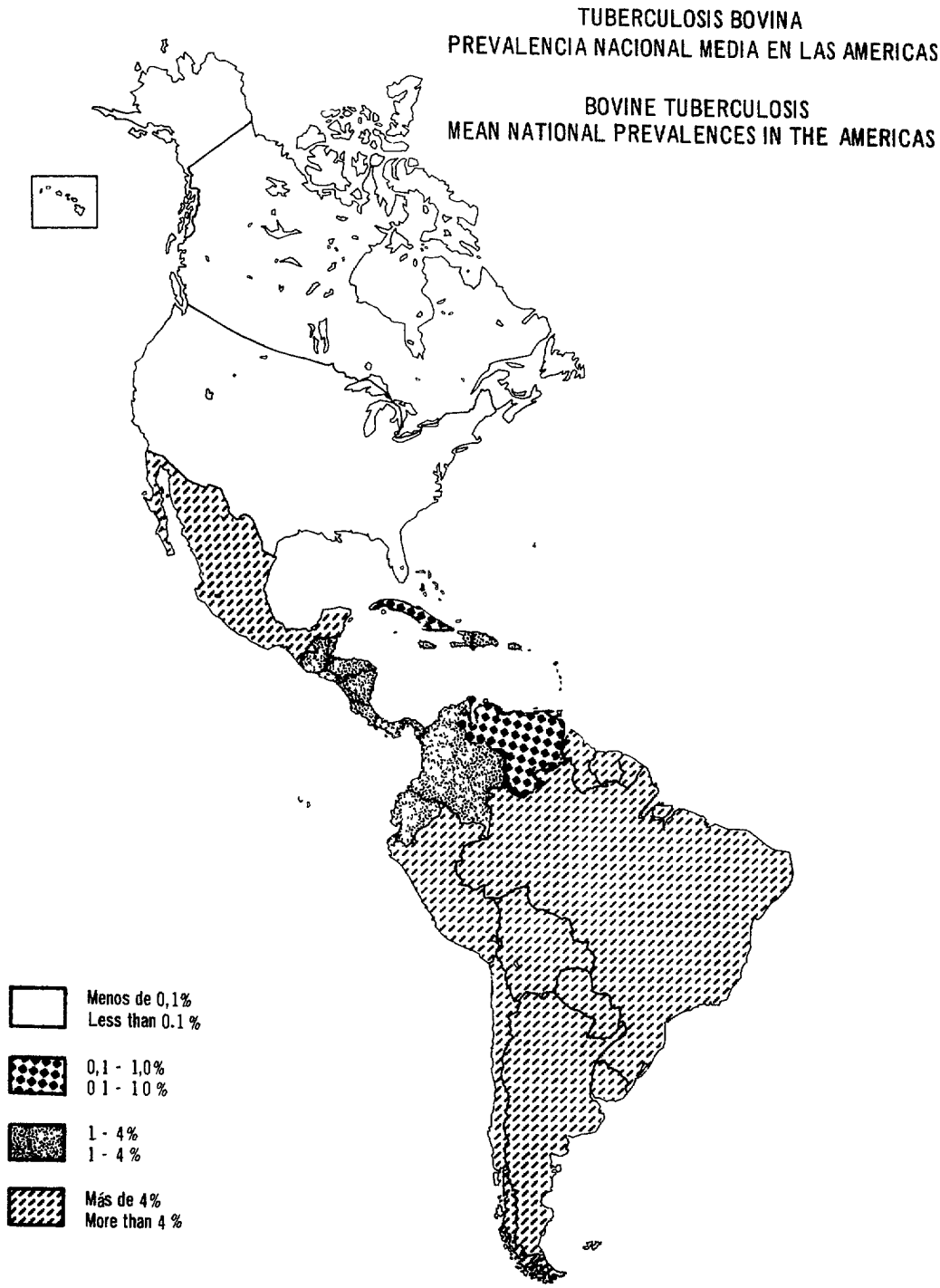
i. To obtain collaboration of the countries of the hemisphere in the standardization of materials and technical criteria. The first and most important factor is the availability of a uniform tuberculin in sufficient quantity for use through out the Region, both in initial surveys and in actual control and eradication campaigns. The production of tuberculin PPD in a limited number of approved laboratory centres should be planned on a regional basis to ensure a ready and reliable supply of uniform tuberculin for all the countries. The tuberculin requirements of many of these countries will be small, so that it would not, in any case, be economical for them to have their own production units, and tuberculin should be made available to them at cost price.

ii. The most suitable tuberculin testing technique and the most

efficient interpretation of any test varies with the environment, depending on the types and degree of tuberculin sensitivity present (Lesslie 1967). Because of this, it is essential that biostatistical surveys should be undertaken in the different countries to determine the extent, level and types of tuberculin sensitivity present in the different areas and to devise the most efficient test for the particular environment in which it is to be used. This information will also allow the development of plans for active tuberculosis control and eradication.

In each country the first objective should be the protection of areas and herds still free from tuberculosis. The second step is the eradication of infection in herds and areas with low reactor rates in order to provide sources of replacement animals. The third stage must be to face the situation in the areas and herds with higher rates of infection, on a short-term or long-term basis, depending on the prevalence of the disease and the human and economic resources.

The methods for controlling bovine tuberculosis are known and well established. Many of the countries of the hemisphere are already technically capable, in respect of both personnel and facilities, of undertaking national campaigns. The political decision, however, must be made by each individual government, in order to provide the necessary legislation for the initiation of programmes. Those responsible in latin America for economic development, livestock disease control and public health should do all they can to see that the methods for bovine tuberculosis eradication are properly applied.


TUBERCULOSIS BOVINA
PREVALENCIA NACIONAL MEDIA EN LAS AMERICAS
BOVINE TUBERCULOSIS
MEAN NATIONAL PREVALENCES IN THE AMERICAS
Menos de 0,1%
Less than 0.1 %
0,1 - 1,0%
0 1 - 1 0 %
1 - 4%
1 - 4 %
Más de 4%
More than 4 %

## BIOLOGICALS DISTRIBUTED BY THE CENTER ON OFFICIAL REQUEST, DURING 1972

| Biologicals | Quantity | No. of Countries |
|---|---|---|
| **Anthrax** | | |
| *B. anthracis* strain CN-3472 | 4 amp. | 2 |
| *B. anthracis* strain Pasteur IV | 1 amp. | 1 |
| Anthrax vaccine (dilute) | 30.000 doses | 1 |
| Anthrax vaccine (concentrated) | 30.000 doses | 1 |
| **Brucellosis** | | |
| *Brucella* antigen (plate) | 5.680 ml | 15 |
| *Brucella* antigen (tube) | 3.390 ml | 13 |
| *Brucella* antigen (ring) | 4.470 ml | 1 |
| *B. melitensis* Rev.1 vaccine | 64.000 doses | 1 |
| *B. abortus* strain 19 (for vaccine production) | 37 amp. | 6 |
| *B. abortus* strain 1119-3 | 40 amp. | 6 |
| *B. abortus* strain 544 | 14 amp. | 6 |
| *B. abortus* strain 2308 | 2 amp. | 2 |
| *B. abortus* strain 45/20 | 1 amp. | 1 |
| *B. melitensis* strain 16M | 11 amp. | 3 |
| *B. melitensis* Rev.1 | 1 amp. | 1 |
| *B. melitensis* 53H38 | 2 amp. | 2 |
| *B. melitensis* 6319 | 1 amp. | 1 |
| *B. melitensis* Ethel | 1 amp. | 1 |
| *B. suis* 1330 | 11 amp. | 2 |
| *B. suis* 644-3B | 1 amp. | 1 |
| *B. ovis* | 1 amp. | 1 |
| Rivanol antigen | 180 ml | 1 |
| Rivanol solution | 360 ml | 1 |
| Soluble antigen for complement fixation and Immuno-diffusion test (agar-gel) | 10 ml | 1 |
| *B. abortus* antiserum (equivalent to International Standard serum) | 19 ml | 4 |
| *B. abortus* monospecific antiserum | 8 ml | 4 |
| *B. melitensis* monospecific antiserum | 8 ml | 4 |
| *B. ovis* antiserum | 4 ml | 1 |
| Sera for standardization of antigen | 20 tubes | 1 |
| *Brucella* bacteriophage | 4 amp. | 1 |
| **Hydatidosis** | | |
| Casoni antigen | 8.900 doses | 4 |
| Control antigen | 8.900 doses | 4 |
| Human positive serum | 7 amp. | 1 |
| **Immunology** | | |
| Rabbit anti-human serum | 6 ml | 2 |
| Rabbit anti-bovine serum | 6 ml | 2 |

| | | |
|---|---|---|
| Rabbit anti-equine serum | 5 ml | 2 |
| Rabbit anti-sheep serum | 10 ml | 2 |
| Rabbit anti-goat serum | 3 ml | 1 |
| Rabbit anti-human gammaglobulin | 10 ml | 2 |
| Rabbit anti-bovine gammaglobulin | 2 ml | 1 |
| Rabbit anti-equine gammaglobulin | 5 ml | 1 |
| Rabbit anti-swine gammaglobulin | 2 ml | 1 |
| Rabbit anti-mouse gammaglobulin (C3H) | 1 ml | 1 |
| Rabbit anti-swine serum | 5 ml | 1 |
| Rabbit anti-dog serum | 2 ml | 1 |
| Rabbit anti-mouse serum | 5 ml | 1 |
| Rabbit anti-rat serum | 4 ml | 1 |
| Goat anti-rabbit serum | 2 ml | 1 |
| Normal Bovine serum | 10 ml | 1 |
| Normal Equine serum | 10 ml | 1 |
| Normal Sheep serum | 10 ml | 1 |

Leptospirosis

| | | |
|---|---|---|
| Leptospiral serotypes | 163 amp. | 6 |
| Leptospiral antisera | 76 amp. | 2 |

Food Microbiology

| | | |
|---|---|---|
| *Salmonella gallinarum* 416 | 1 amp. | 1 |

Rabies

| | | |
|---|---|---|
| Rabies conjugate | 53 amp. | 9 |
| Fixed virus CVS | 25 amp. | 7 |
| Fixed virus 91 | 11 amp. | 4 |
| Fixed virus 51 | 11 amp. | 4 |
| Fixed virus PV | 6 amp. | 2 |
| Fixed virus HEP | 3 amp. | 1 |
| Fixed virus LEP | 5 amp. | 2 |
| Virus DR 19 | 2 amp. | 1 |
| Bolivar virus | 1 amp. | 1 |
| CVS suspension (for immunofluorescence) | 60 ml | 1 |
| Apipe-1 virus | 2 amp. | 1 |
| Reference rabies vaccine | 30 amp. | 3 |
| SMB Vaccine | 39 amp. | 3 |
| Suspension of normal mouse brain for IF | 120 ml | 1 |
| Positive rabies smears (for IF) | 20 slides | 3 |
| Negative rabies smears (for IF) | 20 slides | 3 |
| Hyperimmune horse serum | 9 amp. | 2 |
| Hyperimmune rabbit serum | 9 amp. | 3 |
| Standard hyperimmune horse serum | 1 amp. | 1 |
| BHK cell lines | 20 bottles | 4 |
| VERO cell lines | 11 bottles | 3 |

Tuberculosis

| | | |
|---|---|---|
| Avian Tuberculin PPD | 35.100 doses | 7 |

| | | |
|---|---|---|
| Mammalian Tuberculin PPD | 35.100 doses | 7 |
| *M. tuberculosis*, DT strain | 1 amp. | 1 |
| *M. avium*, D4 strain | 1 amp. | 1 |

# AGREEMENTS BETWEEN COUNTRIES AND THE ORGANIZATION RELATED TO PAN AMERICAN ZOONOSES CENTER

## AGREEMENTS ON ZOONOSES, CONCLUDED BETWEEN COUNTRIES AND PAHO

| Country | | Subject |
|---|---|---|
| Argentina | 1. | Zoonoses research and training |
| | 2. | Evaluation of vaccines used in brucellosis of swine |
| | 3. | Experimental study of bovine rabies control |
| | 4. | Ecological studies on *Desmodus rotundus* |
| Barbados | | Veterinary public health |
| Bolivia | | Zoonoses control |
| Brazil | 1. | Research in biology of insectiverous bats |
| | 2. | Demonstration of animal disease control in Rio Grande do Sul |
| | 3. | Establishment and operation of the National Reference Laboratory, and training in animal health |
| | 4. | Production and control of rabies vaccine for human use |
| Chile | 1. | Control of anthrax |
| | 2. | Eradication of canine rabies |
| Colombia | 1. | Control of canine rabies |
| | 2. | Control of brucellosis |
| | 3. | Veterinary Public Health (Zoonoses and Food Hygiene) |
| Cuba | | Zoonoses control |
| Dominican Republic | | Veterinary public health |
| Ecuador | | National veterinary laboratory |
| Guatemala | | Production of rabies vaccines |
| Guyana | | Veterinary public health |
| Haiti | | Veterinary public health |

| Country | | Subject |
|---|---|---|
| Jamaica | | Veterinary public health |
| Mexico | | Zoonoses control |
| Paraguay | | Veterinary public health |
| Peru | 1. | Control of canine rabies |
| | 2. | Control of brucellosis in goats |
| | 3. | Control of hydatidosis |
| Surinam | | Veterinary public health |
| Trinidad | | Veterinary public health |
| Uruguay | | Control of hydatidosis |
| Venezuela | 1. | Veterinary public health |
| | 2. | Venezuelan equine encephalitis |
| West Indies | | Veterinary public health |

PERSONNEL OF PAN AMERICAN

ZOONOSES CENTER

BUDGET 1973

PROPOSED ESTIMATES FOR 1974-1975

## PROGRAM AND BUDGET OF THE PAN AMERICAN ZOONOSES CENTER FOR 1973, PROPOSED ESTIMATES FOR 1974, AND PROVISIONAL DRAFT FOR 1975

### INTRODUCTION

The year of 1973 corresponds to the second yearly stage of the administration of the Pan American Zoonoses Center as a Regional Project under the support of the United Nations Development Program.

The Government of Argentina participates decidely with its contribution in the purposes that prompted the establishment of this United Nations project.

The UNDP contribution was approved in January 1972, and as regional project, the Center will now be able to increase the technical assistance it provides to the American countries in support of their zoonoses control and/ or their eradication programs.

### SOURCE OF FUNDS

Under the Regional Project, the funds allocated for financing the activities of the Pan American Zoonoses Center during the period 1972-1976 will come from the four following sources :

a. The United Nations Development Program (UNDP);

b. An annual contribution from the Government of Argentina;

c. Funds from the Regular Budget of the Pan American Health Organization (PAHO) (including the contributions of the Ministries of Agriculture as per Resolution II of RICAZ III, 15 April 1970);

d. Funds from the Regular Budget of the World Health Organization (WHO).

Tables 1 and 1A show the budgetary projection for the years 1973 through 1975 as well as the allocation of quotas to the corresponding Ministries of Agriculture.

TABLE 1

PAN AMERICAN ZOONOSES CENTER
BUDGETARY PROJECTIONS FOR THE YEARS 1973 THROUGH 1975
(in US dollars)

| | 1973 | 1974 | 1975 |
|---|---|---|---|
| Contributions from the United Nations Development Program (UNDP) | 316,360 | 325,760 | 271,560 |
| Contributions from the Government of Argentina | 342,753 | 359,891 | 377,886 |
| Funds from regular budget of the Pan American Health Organization* | 545,524 | 599,400 | 658,741 |
| Funds from regular budget of the World Health Organization | 98,668 | 109,200 | 120,011 |
| | 1,303,305 | 1,394,251 | 1,428,198 |

*In the funds of the PAHO Regular Budget there are included the corresponding contributions fo the ministries of agriculture, in the amounts of $ 363,000 (1973); $ 399,300 (1974); and $ 439,230 (1975). These amounts, included in the PAHO regular budget and approved by the Directiong Council of PAHO(or the Pan American Sanitary Conference), form an integral part of the quota assessment of each Member Government.

For the information of those Member Government who decide to allocate to the Ministry of Agriculture a portion of the quota for support of the Pan American Zoonoses Center, there is a schedule in Table 1A, showing the amount by country.

TABLE 1A

PROPORTION OF CONTRIBUTIONS OF MEMBER GOVERNMENTS OF PAHO PROJECTED FOR FINANCING THE EXPANDED PROGRAM OF SERVICES OF THE PAN AMERICAN ZOONOSES CENTER

| Country | % | 1973 $ | 1974 $ | 1975 $ |
|---|---|---|---|---|
| Argentina | 6.89 | 23,233 | 25,557 | 28,111 |
| Barbados | 0.08 | 270 | 297 | 325 |
| Bolivia | 0.32 | 1,079 | 1,187 | 1,306 |
| Brazil | 6.49 | 21,885 | 24,073 | 26,480 |
| Chile | 1.63 | 5,496 | 6,046 | 6,651 |
| Colombia | 1.54 | 5,193 | 5,712 | 6,283 |
| Costa Rica | 0.32 | 1,079 | 1,187 | 1,306 |
| Cuba | 1.30 | 4,384 | 4,822 | 5,304 |
| Dominican Republic | 0.32 | 1,079 | 1,187 | 1,306 |
| Ecuador | 0.32 | 1,079 | 1,187 | 1,306 |
| El Salvador | 0.32 | 1,079 | 1,187 | 1,306 |
| Guatemala | 0.41 | 1,383 | 1,521 | 1,673 |
| Haiti | 0.32 | 1,079 | 1,187 | 1,306 |
| Honduras | 0.32 | 1,079 | 1,187 | 1,306 |
| Jamaica | 0.32 | 1,079 | 1,187 | 1,306 |
| Mexico | 7.13 | 24,043 | 26,447 | 29,092 |
| Nicaragua | 0.32 | 1,079 | 1,187 | 1,306 |
| Panama | 0.32 | 1,079 | 1,187 | 1,306 |
| Paraguay | 0.32 | 1,079 | 1,187 | 1,306 |
| Peru | 0.81 | 2,731 | 3,004 | 3,305 |
| Trinidad and Tobago | 0.30 | 1,012 | 1,113 | 1,224 |
| United States of America | 66.00 | 222,554 | 244,809 | 269,291 |
| Uruguay | 0.57 | 1,922 | 2,114 | 2,325 |
| Venezuela | 3.33 | 11,229 | 12,352 | 13,586 |
| | 100.00 | 337,204 | 370,924 | 408,016 |
| Other Member and Participating Governments | | | | |
| Canada | 6.72 | 22,660 | 24,927 | 27,419 |
| France | 0.23 | 776 | 853 | 938 |
| Guyana | 0.24 | 809 | 890 | 979 |
| Kingdom of the Netherlands | 0.19 | 641 | 705 | 775 |
| United Kingdom | 0.27 | 910 | 1,001 | 1,103 |
| | | 25,796 | 28,376 | 31,214 |
| TOTAL | | 363,000 | 399,300 | 439,230 |

DISTRIBUTION OF FUNDS

The following percentages will be alloted, within the budget for each year, to each of the main headings listed below, which comprise the objectives of the Center and the activities for achieving them :

| Year | Training and Technical Information | Technical Advisory Services | Research Projects |
|---|---|---|---|
| 1973 | 19.4 | 48.3 | 27.8 |
| 1974 | 20.6 | 47.4 | 27.5 |
| 1975 | 20.7 | 47.5 | 27.3 |

The distribution of funds for 1973, 1974 and 1975 according to the program of activities and administrative expenses, is in Table 2.

TABLE 2

PAN AMERICAN ZOONOSES CENTER
PLAN OF EXPENDITURES IN ACCORDANCE WITH THE PROGRAM OF SERVICES TO COUNTRIES

| Year | Training and Technical Information (a) | % | Technical Assistance: Field Services for Zoonoses Control (b) | % | Technical Assistance: Laboratory Services (c) | % | Research (d) | % | Administration (e) | % | Total Budget | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 | 252,662 | 19.4 | 369,004 | 28.3 | 260,218 | 20.0 | 362,229 | 27.8 | 59,192 | 4.5 | 1,303,305 | 100.0 |
| 1974 | 287,367 | 20.6 | 387,237 | 27.8 | 273,696 | 19.6 | 383,193 | 27.5 | 62,758 | 4.5 | 1,394,251 | 100.0 |
| 1975 | 295,732 | 20.7 | 402,500 | 28.2 | 275,833 | 19.3 | 389,233 | 27.3 | 64,900 | 4.5 | 1,428,198 | 100.0 |

(a) The funds include fellowships for courses and national and international seminars, salaries of the Center's staff and special consultants, supplies, materials, teaching equipment, personnel, materials and cost of shipping publications.

(b) Includes salaries of staff, duty travel, supplies and equipment for epidemiological studies, vaccine field trials and other control procedures; administrative costs and meetings.

(c) Includes staff for the production of sandards reagents, quality testing of vaccines and antigens, duty travel, supplies and equipment, and common costs.

(d) Includes the costs of research projects at the Center itself and in the countries, including costs of personnel, consultants, duty travel, supplies and equipment, and administrative costs.

(e) Funds for staff salaries and general administrative expenses of the Center (finances, personnel, supplies and general services).

TABLE 8

PAN AMERICAN ZOONOSES CENTER STAFF

For the accomplishment of the objectives contemplated in the corresponding programs, as well as for the achievement of its internal organizatio, the Center has a body of international and local staff which is shown below :

| | 1973 | 1974 | 1975 |
|---|---|---|---|
| **Office of the Director** | | | |
| Director | 1 | 1 | 1 |
| Administrative Officer | 1 | 1 | 1 |
| Local staff | 3 | 3 | 3 |
| **Administrative Services** | | | |
| Local staff | 8 | 8 | 8 |
| **Training and Technical Information** | | | |
| Chief of Training | 1 | 1 | 1 |
| Editor-Translator | 1 | 1 | 1 |
| Audiovisual Aids Officer | 1 | 1 | 1 |
| Local staff | 5 | 5 | 5 |
| **Field Services** | | | |
| Chief of Department | 1 | 1 | 1 |
| Epidemiologist (Physician) | 1 | 1 | 1 |
| Epidemiologist (Veterinarian) | 1 | 1 | 1 |
| Mastozoologist (Ecology) | 1 | 1 | 1 |
| Consultant, Control Programs | 1 | 1 | 1 |
| Biostatistician | 1 | 1 | 1 |
| Zoonoses Specialist | 3 | 3 | 3 |
| Local Staff | 13 | 13 | 13 |
| **Laboratory Services** | | | |
| Chief of Laboratories (50%) | 0.5 | 0.5 | 0.5 |
| Bacteriologist (Tb) | 1 | 1 | 1 |
| Bacteriologist (Bru) | 1 | 1 | 1 |
| Expert in biological products | 1 | 1 | 1 |
| Local staff | 27 | 27 | 27 |

TABLE 8 (cont.)

PAN AMERICAN ZOONOSES CENTER STAFF

| Research | 1973 | 1974 | 1975 |
|---|---|---|---|
| Scientific Adviser | 1 | 1 | 1 |
| Chief of Laboratories (50%) | 0.5 | 0.5 | 0.5 |
| Parasitologist | 1 | 1 | 1 |
| Serologist | 1 | 1 | 1 |
| Virologist | 1 | 1 | 1 |
| Food Microbiologist | 1 | 1 | 1 |
| Immunologist | 1 | 1 | 1 |
| Specialist in Laboratory Animals | 1 | 1 | 1 |
| Assistant Scientist | 1 | 1 | 1 |
| Local staff | 35 | 35 | 35 |
| | 117 | 117 | 117 |

PAN AMERICAN ZOONOSES CENTER
BREAKDOWN OF THE BUDGET FOR 1973

| | Office of Director | Training and Technical Information | Technical Advisory Services: Field Services for Zoonoses Control | Technical Advisory Services: Laboratory Services | Research | Administration | Meetings | Local Costs | Total | Percentage of Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Salaries and Allowances | 48,671 | 120,810 | 294,525 | 193,592 | 262,254 | 57,602 | - | - | 977,454 | 75.0 |
| Short-term Consultants | - | 6,600 | 6,600 | 3,300 | 3,300 | - | - | - | 19,800 | 1.5 |
| Duty Travel | 4,232 | 5,600 | 22,093 | 18,231 | 8,899 | - | - | - | 59,055 | 4.5 |
| Fellowships | - | 75,600 | - | - | - | - | - | - | 75,600 | 5.8 |
| Supplies and Equipment | - | 6,246 | 2,489 | 22,408 | 19,165 | 1,598 | - | - | 51,906 | 4.0 |
| Common Services | - | 8,891 | 9,204 | 25,200 | 30,053 | - | - | - | 73,348 | 5.6 |
| Contractual Services | - | 423 | - | 1,484 | 1,743 | - | - | - | 3,650 | 0.3 |
| Meetings | - | - | - | - | - | - | 10,000 | - | 10,000 | 0.8 |
| Local Costs | - | - | - | - | - | - | - | 26,462 | 26,462 | 2.0 |
| Publications | - | 6,030 | - | - | - | - | - | - | 6,030 | 0.5 |
| Totals | 52,903 | 230,200 | 334,911 /599,126/ | 264,215 | 325,414 | 59,200 | 10,000 | 26,462 | 1,303,305 | |
| Percentage of total | 4.1 | 17.7 | 25.7 /46.0/ | 20.3 | 24.9 | 4.5 | 0.8 | 2.0 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER

BUDGET

1 January - 31 December 1973

| | | |
|---|---|---|
| I. | Office of the Director | 52,903 |
| | a. Salaries and allowances | 48,671 |
| | Professional staff (2) | |
| | Director, P.5<br>Administrative Officer, P.2 | |
| | Local staff (3) | |
| | b. Duty travel | 4,232 |
| II. | Training and Technical Information | 230,200 |
| | a. Salaries and allowances | 120,810 |
| | Professional staff (3) | |
| | Chief of Training , P.4<br>Translator and Publications Officer, P.2<br>Specialist in Audiovisual Aids, P.1 | |
| | Local staff (5) | |
| | b. Short-term consultants | 6,600 |
| | c. Duty travel | 5,600 |
| | d. Fellowships | 75,600 |
| | e. Supplies and equipment | 6,246 |
| | f. Common services | 8,891 |
| | g. Contractual services | 423 |
| | h. Publications | 6,030 |
| III. | Field Services for Zoonoses Control | 334,911 |
| | a. Salaries and allowances | 294,525 |
| | Professional staff (9) | |
| | Chief of Technical Services, P.5<br>Consultant, Control Programs, P.4<br>Epidemiologist (Physician), P.4 | |

BUDGET FOR 1973 (cont.)

Epidemiologist (Veterinarian), P.4
3 Specialists in zoonoses, P.4
Mastozoologist (Ecology), P.4
Biostatistician, P.4

Local staff (13)

| | | |
|---|---|---|
| b. | Short-term consultants | 6,600 |
| c. | Duty travel | 22,093 |
| d. | Supplies and equipment | 2,489 |
| e. | Common services | 9,204 |
| IV | Laboratory services | 264,215 |
| a. | Salaries and allowances | 193,592 |

Professional staff (3.5)

Chief of Laboratories (50%), P.5
Bacteriologist (Tb), P.4
Bacteriologist (Bru), P.4
Expert in biological products, P.4

Local staff (27)

| | | |
|---|---|---|
| b. | Short-term consultants | 3,300 |
| c. | Duty travel | 18,231 |
| d. | Supplies and equipment | 22,408 |
| e. | Common services | 25,200 |
| f. | Contractual services | 1,484 |
| V. | Research | 325,414 |
| a. | Salaries and allowances | 262,254 |

Professional staff (8.5)

Scientific adviser, P.5
Chief of laboratories (50%), P.5
Parasitologist, P.4
Serologist, P.4
Virologist, P.4
Food microbiologist, P.4
Serologist (Immunologist), P.4
Specialist in laboratory animals, P.2
Scientist, assistant, P.2

Local staff (35)

BUDGET FOR 1973 (cont.)

| | | | |
|---|---|---|---|
| | b. Short-term consultants | | 3,300 |
| | c. Duty travel | | 8,899 |
| | d. Supplies and equipment | | 19,165 |
| | e. Common services | | 30,053 |
| | f. Contractual services | | 1,743 |
| VI. | Administrative Services | | 59,200 |
| | a. Salaries and allowances | | 57,602 |
| | Local staff (8) | | |
| | b. Supplies and equipment | | 1,598 |
| VII. | Meetings | | 10,000 |
| | Scientific Advisory Committee | | 10,000 |
| | Travel | 8,500 | |
| | Per diem | 1,500 | |
| VIII. | Local Costs | | 26,462 |
| | Local Operating Costs | | 26,462 |
| | | Total | 1,303.305 |

PAN AMERICAN ZOONOSES CENTER

1973 BUDGET
TRAINING AND TECHNICAL INFORMATION

| | National Courses* | International Courses and Short Courses | Individual Training | Publications | Total | Percentage of Total |
|---|---|---|---|---|---|---|
| Salaries and Allowances | | | | | | |
| International staff | 28,224 | 24,812 | 11,886 | 6,825 | 71,747 | 31.2 |
| Local staff | 20,113 | 18,114 | 9,842 | 7,594 | 55,663 | 24.2 |
| Duty Travel | 2,408 | 2,138 | 1,054 | - | 5,600 | 2.4 |
| Fellowships | 31,223 | 30,601 | 13,776 | - | 75,600 | 32.8 |
| Supplies and Equipment | 1,547 | 1,285 | 501 | 2,913 | 6,246 | 2.7 |
| Common Services | 2,148 | 1,739 | 235 | 4,769 | 8,891 | 3.9 |
| Contractual Services | 159 | 139 | 67 | 58 | 423 | 0.2 |
| Publications | 2,487 | 2,115 | 1,428 | - | 6,030 | 2.6 |
| Totals | 88,309 | 80,943 | 38,789 | 22,159 | 230,200 | |
| Percentage of Total | 38.4 | 35.2 | 16.8 | 9.6 | | 100.0 |

* To be held in the countries with the assistance of the Center

PAN AMERICAN ZOONOSES CENTER
1973 BUDGET
TECHNICAL ADVISORY SERVICES

| | Field Services | % | Laboratory Services | % | Total |
|---|---|---|---|---|---|
| Salaries and Allowances | | | | | |
| International staff | 230,844 | 69.0 | 140,640 | 53.2 | 371,484 |
| Local staff | 70,281 | 21.0 | 56,252 | 21.3 | 126,533 |
| Duty Travel | 22,093 | 6.6 | 18,231 | 6.9 | 40,324 |
| Supplies and Equipment | 2,489 | 0.7 | 22,408 | 8.5 | 24,897 |
| Common Services | 9,204 | 2.7 | 25,200 | 9.5 | 34,404 |
| Contractual Services | - | - | 1,484 | 0.6 | 1,484 |
| Totals | 334,911 | 100.0 | 264,215 | 100.0 | 599,126 |
| Percentage of Total | 55.9 | | 44.1 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER

1973 BUDGET
RESEARCH PROJECTS

| | Epidemiological Research | Improvement of Diagnosis | Improvement of Vaccines | Basic Research | Total | Percentage of Total |
|---|---|---|---|---|---|---|
| Salaries and Allowances | | | | | | |
| International staff | 58,810 | 54,859 | 47,614 | 26,524 | 187,807 | 57.8 |
| Local staff | 23,166 | 22,184 | 19,713 | 12,684 | 77,747 | 23.9 |
| Duty Travel | 2,901 | 2,629 | 2,211 | 1,158 | 8,899 | 2.7 |
| Supplies and Equipment | 6,045 | 5,674 | 4,873 | 2,573 | 19,165 | 5.9 |
| Common Services | 9,417 | 8,814 | 7,637 | 4,185 | 30,053 | 9.2 |
| Contractual Services | 540 | 503 | 430 | 270 | 1,743 | 0.5 |
| Totals | 100,879 | 94,663 | 82,478 | 47,394 | 325,414 | |
| Percentage of Total | 31.0 | 29.1 | 25.3 | 14.6 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER

BREAKDOWN OF THE BUDGET FOR 1974

| | Office of Director | Training and Technical Information | Technical Advisory Services: Field Services for Zoonoses Control | Technical Advisory Services: Laboratory Services | Research | Administration | Meetings | Local Costs | Total | Percentage of Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Salaries and Allowances | 48,054 | 129,216 | 309,884 | 204,202 | 273,956 | 61,099 | - | - | 1,026,411 | 73.7 |
| Short-term Consultants | - | 6,600 | 6,600 | 3,300 | 3,300 | - | - | - | 19,800 | 1.4 |
| Duty Travel | 4,322 | 5,813 | 20,562 | 16,289 | 9,614 | - | - | - | 56,600 | 4.1 |
| Fellowships | - | 75,800 | - | - | - | - | - | - | 75,800 | 5.4 |
| Supplies and Equipment | - | 7,517 | 2,698 | 33,723 | 25,965 | 1,567 | - | - | 71,470 | 5.1 |
| Common Services | - | 10,806 | 11,192 | 31,044 | 37,374 | - | - | - | 90,416 | 6.5 |
| Contractual Services | - | 1,879 | - | 1,658 | 2,604 | - | - | - | 6,141 | 0.4 |
| Meetings | - | - | - | - | - | - | 15,000 | - | 15,000 | 1.1 |
| Local Costs | - | - | - | - | - | - | - | 26,613 | 26,613 | 1.9 |
| Publications | - | 6,000 | - | - | - | - | - | - | 6,000 | 0.4 |
| Totals | 52,376 | 243,631 | 350,936 /641,152/ | 290,216 | 352,813 | 62,666 | 15,000 | 26,613 | 1,394,251 | |
| Percentage of Total | 3.8 | 17.5 | 25.2 /46.0/ | 20.8 | 25.2 | 4.5 | 1.1 | 1.9 | | 100.0 |

# PAN AMERICAN ZOONOSES CENTER
## BUDGET
## 1 January - 31 December 1974

| | | |
|---|---|---|
| I. | Office of the Director | 52,376 |
| | (a) Salaries and allowances | 48,054 |
| | Professional staff (2) | |
| | Director, P.5<br>Administrative Officer, P.2 | |
| | Local staff (3) | |
| | (b) Duty travel | 4,322 |
| II. | Training and Technical Information | 243,631 |
| | (a) Salaries and allowances | 129,216 |
| | Professional staff (3) | |
| | Chief of Training , P.4<br>Translator and Publications Officer, P.2<br>Specialist in Audiovisual Aids, P.1 | |
| | Local staff (5) | |
| | (b) Short-term consultants | 6,600 |
| | (c) Duty travel | 5,813 |
| | (d) Fellowships | 75,800 |
| | (e) Supplies and equipment | 7,517 |
| | (f) Common services | 10,806 |
| | (g) Contractual services | 1,879 |
| | (h) Publications | 6,000 |
| III. | Field Services for Zoonoses Control | 350,936 |
| | (a) Salaries and allowances | 309,884 |
| | Professional staff (9) | |
| | Chief of Technical Services, P.5<br>Consultant, Control Programs, P.4<br>Epidemiologist (Physician), P.4 | |

BUDGET FOR 1974 (cont.)

Epidemiologist (Veterinarian), P.4
3 Specialists in zoonoses, P.4
Mastozoologist (Ecology), P.4
Biostatistician, P.4

Local staff (13)

| | | |
|---|---|---|
| (b) | Short-term consultants | 6,600 |
| (c) | Duty travel | 20,562 |
| (d) | Supplies and equipment | 2,698 |
| (e) | Common services | 11,192 |
| IV. | Laboratory Services | 290,216 |
| (a) | Salaries and allowances | 204,202 |

Professional staff (3.5)

Chief of Laboratories (50%), P.5
Bacteriologist (Tb), P.4
Bacteriologist (Bruc), P.4
Expert in biological products, P.4

Local staff (27)

| | | |
|---|---|---|
| (b) | Short-term consultants | 3,300 |
| (c) | Duty travel | 16,289 |
| (d) | Supplies and equipment | 33,723 |
| (e) | Common services | 31,044 |
| (f) | Contractual services | 1,658 |
| V. | Research | 352,813 |
| (a) | Salaries and allowances | 273,956 |

Professional staff (8.5)

Scientific adviser, P.5
Chief of laboratories (50%), P.5
Parasitologist, P.4
Serologist, P.4
Virologist, P.4
Food microbiologist, P.4
Serologist (Immunologist), P.4
Specialist in laboratory animals, P.2
Scientist, assistant, P.2

Local staff (35)

BUDGET FOR 1974 (cont.)

| | | | |
|---|---|---|---|
| | (b) Short-term consultants | | 3,300 |
| | (c) Duty travel | | 9,614 |
| | (d) Supplies and equipment | | 25,965 |
| | (e) Common services | | 37,374 |
| | (f) Contractual services | | 2,604 |
| VI. | Administrative Services | | 62,666 |
| | (a) Salaries and allowances | | 61,099 |
| | Local staff (8) | | |
| | (b) Supplies and equipment | | 1,567 |
| VII. | Meetings | | 15,000 |
| | Scientific Advisory Committee<br>Technical Coordinating Committee | | 15,000 |
| | Travel | 12,000 | |
| | Per diem | 3,000 | |
| VIII. | Local Costs | | 26,613 |
| | Local operating costs | | 26,613 |
| | | TOTAL | 1,394,251 |

PAN AMERICAN ZOONOSES CENTER

1974 BUDGET
TRAINING AND TECHNICAL INFORMATION

| | National Courses* | International Courses and Short Courses | Individual Training | Publications | Total | Percentage of Total |
|---|---|---|---|---|---|---|
| Salaries and Allowances | | | | | | |
| International staff | 29,761 | 25,467 | 11,573 | 7,267 | 74,068 | 30.4 |
| Local staff | 22,303 | 20,284 | 10,570 | 8,591 | 61,748 | 25.3 |
| Duty Travel | 2,006 | 2,622 | 1,185 | - | 5,813 | 2.4 |
| Fellowships | 28,883 | 28,376 | 18,541 | - | 75,800 | 31.1 |
| Supplies and Equipment | 1,752 | 1,536 | 221 | 4,008 | 7,517 | 3.1 |
| Common Services | 2,367 | 1,902 | 482 | 6,055 | 10,806 | 4.4 |
| Contractual Services | 757 | 662 | 253 | 207 | 1,879 | 0.8 |
| Publications | 2,500 | 2,500 | 1,000 | - | 6,000 | 2.5 |
| Total | 90,329 | 83,349 | 43,825 | 26,128 | 243,631 | |
| Percentage of Total | 37.1 | 34.2 | 18.0 | 10.7 | | 100.0 |

*To be held in the countries with the assistance of the Center

PAN AMERICAN ZOONOSES CENTER
1974 BUDGET
TECHNICAL ADVISORY SERVICES

| | Field Services | % | Laboratory Services | % | Total |
|---|---|---|---|---|---|
| Salaries and Allowances | | | | | |
| International staff | 239,486 | 68.2 | 146,347 | 50.4 | 385,833 |
| Local staff | 76,998 | 21.9 | 61,155 | 21.1 | 138,153 |
| Duty Travel | 20,562 | 5.9 | 16,289 | 5.6 | 36,851 |
| Supplies and Equipment | 2,698 | 0.8 | 33,723 | 11.6 | 36,421 |
| Common Services | 11,192 | 3.2 | 31,044 | 10.7 | 42,236 |
| Contractual Services | - | - | 1,658 | 0.6 | 1,658 |
| Totals | 350,936 | 100.0 | 290,216 | 100.0 | 641,152 |
| Percentage of Total | 54.7 | | 45.3 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER

1974 BUDGET
RESEARCH PROJECTS

| | Epidemiological Research | Improvement of Diagnosis | Improvement of Vaccines | Basic Research | Total | Percentage of total |
|---|---|---|---|---|---|---|
| Salaries and Allowances | | | | | | |
| International staff | 59,035 | 58,262 | 48,794 | 27,138 | 193,229 | 54.8 |
| Local staff | 24,761 | 24,487 | 21,165 | 13,614 | 84,027 | 23.8 |
| Duty Travel | 3,241 | 3,198 | 2,175 | 1,000 | 9,614 | 2.7 |
| Supplies and Equipment | 7,923 | 7,819 | 6,544 | 3,679 | 25,965 | 7.4 |
| Common Services | 10,061 | 11,929 | 10,710 | 4,674 | 37,374 | 10.6 |
| Contractual Services | 812 | 800 | 671 | 321 | 2,604 | 0.7 |
| Totals | 105,833 | 106,495 | 90,059 | 50,426 | 352,813 | |
| Percentage of Total | 30.0 | 30.2 | 25.5 | 14.3 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER

BREAKDOWN OF THE BUDGET FOR 1975

| | Office of Director | Training and Technical Information | Technical Advisory Services: Field Services for Zoonoses Control | Technical Advisory Services: Laboratory Services | Research | Administration | Meetings | Local Costs | Total | Percentage of Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Salaries and Allowances | 52,200 | 132,366 | 321,000 | 207,566 | 282,266 | 63,300 | - | - | 1,058,698 | 74.1 |
| Short-term Consultants | - | 6,600 | 6,600 | 3,300 | 3,300 | - | - | - | 19,800 | 1.4 |
| Duty Travel | 4,500 | 6,100 | 24,500 | 16,800 | 10,000 | - | - | - | 61,900 | 4.3 |
| Fellowships | - | 68,800 | - | - | - | - | - | - | 68,800 | 4.8 |
| Supplies and Equipment | - | 10,800 | 2,800 | 32,800 | 22,600 | 1,600 | - | - | 70,600 | 4.9 |
| Common Services | - | 11,200 | 11,600 | 32,200 | 38,700 | - | - | - | 93,700 | 6.6 |
| Contractual Services | - | 2,000 | - | 1,800 | 2,600 | - | - | - | 6,400 | 0.4 |
| Meetings | - | - | - | - | - | - | 19,413 | - | 19,413 | 1.4 |
| Local Costs | - | - | - | - | - | - | - | 22,317 | 22,317 | 1.6 |
| Publications | - | 6,570 | - | - | - | - | - | - | 6,570 | 0.5 |
| Totals | 56,700 | 244,436 | 366,500 /660,966/ | 294,466 | 359,466 | 64,900 | 19,413 | 22,317 | 1,428,198 | |
| Percentage of Total | 4.0 | 17.1 | 25.7 /46.3/ | 20.6 | 25.2 | 4.5 | 1.4 | 1.5 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER
BUDGET
1 January - 31 December 1975

| | | |
|---|---|---|
| I. | Office of the Director | 56,700 |
| | (a) Salaries and allowances | 52,200 |
| | Professional staff (2) | |
| | Director, P.5<br>Administrative Officer, P.2 | |
| | Local staff (3) | |
| | (b) Duty travel | 4,500 |
| II. | Training and Technical Information | 244,436 |
| | (a) Salaries and allowances | 132,366 |
| | Professional staff (3) | |
| | Chief of Training , P.4<br>Translator and Publications Officer, P.2<br>Specialist in Audiovisual Aids, P.1 | |
| | Local staff (5) | |
| | (b) Short-term consultants | 6,600 |
| | (c) Duty travel | 6,100 |
| | (d) Fellowships | 68,800 |
| | (e) Supplies and equipment | 10,800 |
| | (f) Common services | 11,200 |
| | (g) Contractual services | 2,200 |
| | (h) Publications | 6,570 |
| III. | Field Services for Zoonoses Control | 366,500 |
| | (a) Salaries and allowances | 321,000 |
| | Professional staff (9) | |
| | Chief of Technical Services, P.5<br>Consultant, Control Programs, P.4<br>Epidemiologist (Physician), P.4 | |

BUDGET FOR 1975 (cont.)

Epidemiologist (Veterinarian), P.4
3 Specialists in zoonoses, P.4
Mastozoologist (Ecology), P.4
Biostatistician, P.4

Local staff (13)

| | | |
|---|---|---|
| (b) | Short-term consultants | 6,600 |
| (c) | Duty travel | 24,500 |
| (d) | Supplies and equipment | 2,800 |
| (e) | Common services | 11,600 |
| IV. | Laboratory Services | 294,466 |
| (a) | Salaries and allowances | 207,566 |

Professional staff (3.5)

Chief of Laboratories, (50%), P.5
Bacteriologist (Tb), P.4
Bacteriologist (Bru), P.4
Expert in biological products, P.4

Local staff (27)

| | | |
|---|---|---|
| (b) | Short-term consultants | 3,300 |
| (c) | Duty travel | 16,800 |
| (d) | Supplies and equipment | 32,800 |
| (e) | Common services | 32,200 |
| (f) | Contractual services | 1,800 |
| V. | Research | 359,466 |
| (a) | Salaries and allowances | 282,266 |

Professional staff (8.5)

Scientific adviser, P.5
Chief of laboratories (50%), P.5
Parasitologist, P.4
Serologist, P.4
Virologist, P.4
Food microbiologist, P.4
Serologist (Immunologist), P.4
Specialist in laboratory animals, P.2
Scientist, assitant, P.2

Local staff (35)

BUDGET FOR 1975 (cont.)

| | | | |
|---|---|---|---|
| | (b) Short-term consultants | | 3,300 |
| | (c) Duty travel | | 10,000 |
| | (d) Supplies and equipment | | 22,600 |
| | (e) Common services | | 38,700 |
| | (f) Contractual services | | 2,600 |
| VI. | Administrative Services | | 64,900 |
| | (a) Salaries and allowances | | 63,300 |
| | Local staff (8) | | |
| | (b) Supplies and equipment | | 1,600 |
| VII. | Meetings | | 19,413 |
| | Scientific Advisory Committee<br>Technical Coordinationg Committee | | |
| | Travel | 15,413 | |
| | Per diem | 4,000 | |
| VIII. | Local Costs | | 22,317 |
| | Local operating costs | | 22,317 |
| | | TOTAL | 1,428,198 |

PAN AMERICAN ZOONOSES CENTER

1975 BUDGET
TRAINING AND TECHNICAL INFORMATION

| | National Courses* | International Courses and Short Courses | Individual Training | Publications | Total | Percentage of Total |
|---|---|---|---|---|---|---|
| Salaries and Allowances | | | | | | |
| International staff | 31,300 | 26,800 | 12,100 | 7,600 | 77,800 | 31.9 |
| Local staff | 22,168 | 20,166 | 10,366 | 8,466 | 61,166 | 25.0 |
| Duty Travel | 2,200 | 2,800 | 1,100 | - | 6,100 | 2.5 |
| Fellowships | 26,800 | 26,300 | 15,700 | - | 68,800 | 28.1 |
| Supplies and Equipment | 2,500 | 2,200 | 300 | 5,800 | 10,800 | 4.4 |
| Common Services | 2,400 | 2,000 | 500 | 6,300 | 11,200 | 4.6 |
| Contractual Services | 800 | 700 | 300 | 200 | 2,000 | 0.8 |
| Publications | 2,700 | 2,700 | 1,170 | - | 6,570 | 2.7 |
| Totals | 90,868 | 83,666 | 41,536 | 28,366 | 244,436 | |
| Percentage of Total | 37.2 | 34.2 | 17.0 | 11.6 | | 100.0 |

*To be held in the countries with the assistance of the Center

PAN AMERICAN ZOONOSES CENTER
1975 BUDGET
TECHNICAL ADVISORY SERVICES

| | Field Services | % | Laboratory Services | % | Total |
|---|---|---|---|---|---|
| Salaries and Allowances | | | | | |
| International staff | 251,300 | 68.6 | 153,100 | 52.1 | 404,400 |
| Local staff | 76,300 | 20.8 | 57,766 | 19.6 | 134,066 |
| Duty Travel | 24,500 | 6.6 | 16,800 | 5.7 | 41,300 |
| Supplies and Equipment | 2,800 | .8 | 32,800 | 11.1 | 35,600 |
| Common Services | 11,600 | 3.2 | 32,200 | 10.9 | 43,800 |
| Contractual Services | - | - | 1,800 | 0.6 | 1,800 |
| Totals | 366,500 | 100.0 | 294,466 | 100.0 | 660,966 |
| Percentage of Total | 55.4 | | 44.6 | | 100.0 |

PAN AMERICAN ZOONOSES CENTER

1975 BUDGET
RESEARCH PROJECTS

| | Epidemiological Research | Improvement of Diagnosis | Improvement of Vaccines | Basic Research | Total | Percentage of Total |
|---|---|---|---|---|---|---|
| Salaries and Allowances | | | | | | |
| International staff | 61,100 | 60,300 | 50,500 | 28,100 | 200,000 | 55.6 |
| Local staff | 25,268 | 24,966 | 21,566 | 13,766 | 85,566 | 23.8 |
| Duty Travel | 3,400 | 3,300 | 2,200 | 1,100 | 10,000 | 2.8 |
| Supplies and Equipment | 6,900 | 6,800 | 5,700 | 3,200 | 22,600 | 6.3 |
| Common Services | 10,400 | 12,300 | 11,100 | 4,900 | 38,700 | 10.8 |
| Contractual Services | 800 | 800 | 700 | 300 | 2,600 | 0.7 |
| Totals | 107,868 | 108,466 | 91,766 | 51,366 | 359,466 | |
| Percentage of Total | 30.0 | 30.2 | 25.5 | 14.3 | | 100.0 |