directing council

PAN AMERICAN HEALTH ORGANIZATION

XXIV Meeting

regional committee

WORLD HEALTH ORGANIZATION

XXVIII Meeting

México, D.F.
September-October 1976

Provisional Agenda Item 24

CD24/22 (Eng.)
17 August 1976
ORIGINAL: ENGLISH

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

In compliance with Resolution XIX, adopted by the Directing Council at its XVII Meeting, held in Trinidad and Tobago from 2 to 12 October 1967, the Director convened the IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control.

The Executive Committee at its 76th Meeting, held in Washington, D.C., from 21 to 29 June 1976, took note of the following documentation of the Ministerial Meeting (see Annex II):

- Agenda
- 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 Executive Committee adopted Resolution XIV on the subject, which is annexed for the consideration of the Directing Council.

Annexes

EXECUTIVE COMMITTEE OF THE DIRECTING COUNCIL

PAN AMERICAN HEALTH ORGANIZATION

76th Meeting

WORKING PARTY OF THE REGIONAL COMMITTEE

WORLD HEALTH ORGANIZATION

76th Meeting

RESOLUTION XIV

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

THE EXECUTIVE COMMITTEE,

Having considered the Final Report of the IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control (Document RICAZ9/FR);

Bearing in mind the increasing demand for technical cooperation by the countries that are conducting national programs for the prevention or control of foot-and-mouth disease and other zoonoses, which place a heavy financial burden on livestock development and affect human health; and

Recognizing that the Pan American Foot-and-Mouth Disease Center and the Pan American Zoonoses Center are essential agencies for the animal health programs which the countries are conducting or planning with the financial assistance given by the Inter-American Development Bank,

RESOLVES:

1. To request the Director to transmit the Final Report (RICAZ9/FR) contained in Document CE76/17 to the Directing Council at its XXIV Meeting.

2. To recommend to the Directing Council at its XXIV Meeting that it consider adopting a resolution along the following lines:

THE DIRECTING COUNCIL,

Having considered the Final Report of the IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control (Document RICAZ9/FR);

Bearing in mind the importance of the technical cooperation which the Organization is providing to the Governments through its Pan American Foot-and-Mouth Disease and Zoonoses Centers in the planning, operation and evaluation of animal health programs essential to the control and eradication of diseases of importance both to man and to animals;

Considering the scope of the manpower training programs being carried out by the above-mentioned Centers; and

Being aware that an increase is foreseen in the demand for services by the countries, and in the operating cost of such services,

RESOLVES:

1. To take note of the Final Report of the IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control (Document RICAZ9/FR).

2. To thank the Ministers of Agriculture for their willingness to make voluntary contributions to the Centers in order to cope with their financial problems, as indicated in Resolutions V and IX contained in Document RICAZ9/FR.

3. To express its appreciation to the Ministers of Agriculture for their efforts to improve the health of the peoples of the Americas through the control and prevention of animal diseases that affect the economy and health of the countries of the Hemisphere.

(Approved at the twelfth plenary session, 28 June 1976)

executive committee of the directing council

PAN AMERICAN HEALTH ORGANIZATION

working party of the regional committee

WORLD HEALTH ORGANIZATION

CD24/22 (Eng.)
ANNEX II

76th Meeting
Washington, D. C.
June-July 1976

Provisional Agenda Item 16

CE76/17 (Eng.)
13 May 1976
ORIGINAL: SPANISH

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

In compliance with Resolution XIX, adopted by the Directing Council at its XVII Meeting, the Director convened the IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control. The meeting was held in Caracas, Venezuela, from 5 to 8 April 1976, and was attended by representatives of 28 Member Governments and observers from two governments and nine international organizations.

The Director takes pleasure in presenting for the consideration of the Executive Committee the following documents for transmittal to the XXIV Meeting of the Directing Council, with such recommendations as the Committee deems appropriate:

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

The documents on the technical activities relating to the various topics of this meeting are available for study and review by the members of the Executive Committee, who may request them through the Secretariat.

The principal topics discussed at this IX Inter-American Meeting included: production, control and supply of veterinary biologicals by the governments and their agencies in the Americas; quarantine systems for foot-and-mouth disease control; role of wildlife in the transmission of zoonotic diseases; infertility of cattle and its relation to livestock development and food production in the Americas; and the status of the application of and compliance with the recommendations and the animal health and veterinary public health goals established in the Ten-Year Health Plan for the Americas.

The Final Report contains 18 resolutions, adopted by the Ministers of Agriculture, relating to technical assistance to animal health and veterinary public health programs in the Region; regional laboratories for the production and control of veterinary biologicals; the importance of bats in the epidemiology of zoonoses, with special reference to bovine rabies; the role of wildlife in the transmission of zoonoses; financial assistance from international agencies such as the Inter-American Development Bank and the United Nations Development Program; the regional laboratory for the diagnosis of vesicular diseases for Central America and Panama; and epidemiological surveillance systems in animal diseases.

The two principal resolutions that have budgetary implications and were examined and adopted by the Ministers of Agriculture are Resolution V, Proposed Program and Budget of the Pan American Foot-and-Mouth Disease Center for 1977, and Resolution IX, Proposed Program and Budget of the Pan American Zoonoses Center for 1977.

Annexes

CE76/17 (Eng.)
ANNEX I

PAN AMERICAN HEALTH ORGANIZATION

WORLD HEALTH ORGANIZATION

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

CARACAS, VENEZUELA, 5-8 APRIL 1976

RICAZ9/1, Rev. 3 (Eng.)
5 April 1976
ORIGINAL: SPANISH

AGENDA

		Document No.
1.	Preliminary Session. Election of the President, Two Vice-Presidents, and the Rapporteur	
2.	Inaugural Session. Addresses by the Minister of Agriculture and Husbandry of the Republic of Venezuela and by the Director of the Pan American Sanitary Bureau	
3.	Approval of the Agenda and the Program of Sessions	RICAZ9/1, Rev. 2 and RICAZ9/2
4.	Panel on Production, Control and Availability of Veterinary Biologicals by the Governments and their Institutions in the Americas	
	A. Production, Control, and Distribution of Biologicals for Animal Use in the Americas	RICAZ9/13
	B. Regional Laboratories for the Production and Control of Veterinary Biologicals	RICAZ9/16
	C. National Systems for the Production and Supply of Biologicals	RICAZ9/21
	D. Official Production of Biologicals for a National Animal Health Program	RICAZ9/11
5.	Report of the Secretariat on the Implementation of RICAZ VIII Resolutions	RICAZ9/22 and ADD.
6.	Program and Budget of the Pan American Zoonoses Center	RICAZ9/7
7.	Research Program of the Pan American Foot-and-Mouth Disease Center	RICAZ9/4
8.	Program and Budget of the Pan American Foot-and-Mouth Disease Center	RICAZ9/8

		Document No.
9.	Panel on Quarantine Systems for Control of Foot-and-Mouth Disease	
	A. Animal Quarantine Stations in the Americas	RICAZ9/5
	B. Foot-and-Mouth Disease Quarantine in Countries in the Disease-free Area	RICAZ9/18
	C. Foot-and-Mouth Disease Quarantine in Countries in the Affected Area	RICAZ9/23
	D. Rules for the International Marketing of Bovine Semen in Relation to Foot-and-Mouth Disease	RICAZ9/26
10.	Current Status of the Development and Implementation of the Recommendations and Goals for Animal Health and Veterinary Public Health as Established in the Ten-Year Health Plan for the Americas, approved by the Governing Bodies of the Pan American Health Organization, Santiago, Chile, October 1972	
11.	Panel on the Role of Wildlife in the Transmission of Zoonotic Diseases	
	A. Wildlife in the Transmission of Zoonoses in the Americas	RICAZ9/25
	B. Arbovirus Encephalitis, with Special Reference to Equines	RICAZ9/19
	C. Importance of Bats in the Epidemiology of Zoonoses, with Emphasis on Bovine Rabies	RICAZ9/15
12.	Panel on Sterility in Cattle and its Relation to Livestock Development and Food Production in the Americas	
	A. Subfertility of Cattle and its Influence on the Food Production and Economy of the Countries	RICAZ9/24
	B. Breeding Efficiency of Cattle and its Relation to Herd Management and Nutrition	RICAZ9/14
	C. Selection Programs and Genetic Aspects to be Considered with a View to Increasing Conception Rates	RICAZ9/20
	D. Importance of Genital Vibriosis of Cattle and Rules for its Control	RICAZ9/6

		Document No.
	E. The Problem of Trichomoniasis in Cattle and Rules for its Control	RICAZ9/17
13.	Epidemiological Surveillance of Rabies, Equine Encephalitis, Foot-and-Mouth Disease and Other Vesicular Diseases	RICAZ9/9, RICAZ9/10, and RICAZ9/12
14.	A Program of Veterinary Medical Education for the Caribbean. A Feasibility Study	RICAZ9/27

PAN AMERICAN HEALTH ORGANIZATION

WORLD HEALTH ORGANIZATION

CE76/17 (Eng.)
ANNEX II

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

CARACAS, VENEZUELA, 5-8 APRIL 1976

RICAZ9/FR (Eng.)
8 April 1976
ORIGINAL: ENGLISH-SPANISH

F I N A L R E P O R T

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

FINAL REPORT

The IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control was held at the Parque Central, Caracas, Venezuela, from 5 to 8 April 1976, 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

On 5 April the heads of delegation met to elect the Officers of the Meeting, with the following results:

President:	Dr. Carmelo Contreras Barboza Minister of Agriculture and Husbandry of Venezuela
Vice Presidents:	Dr. Hernán Garron Salazar Minister of Agriculture and Livestock Breeding of Costa Rica
	Dr. Anthony Roberts Minister of Agriculture, Fisheries and Local Government of the Bahamas
Rapporteur:	Dr. Eduardo Rivera C. Director General of Animal Health Ministry of Agriculture and Livestock Breeding of Mexico

Dr. Héctor R. Acuña, Director of the Pan American Sanitary Bureau, served as Secretary ex officio.

PARTICIPANTS

The following Governments were represented: Argentina, Bahamas, 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 States of America, Uruguay, and Venezuela. Also present were observers for the United Kingdom, Surinam, and the following international organizations: Food and Agriculture Organization of the United Nations, Inter-American Development Bank, International Center for Tropical Agriculture, International Group for Agricultural Development in Latin America, International Office of Epizootics, Organization of American States, Regional International Organization for Plant and Animal Health, United Nations Development Program, and the Wellcome Foundation.

PLENARY SESSIONS

At the inaugural session, Dr. Héctor R. Acuña, Director of the Pan American Sanitary Bureau, and Dr. Carmelo Contreras Barboza, Minister of Agriculture and Husbandry of Venezuela, took the floor.

Dr. Acuña said that the RICAZ Meetings, which had been held each year since 1968, gave the countries an opportunity for an exchange of knowledge and technology calculated to solve problems which in the final analysis affected human life. It was also traditional to discuss at the Meetings the programs carried out by the Pan American Foot-and-Mouth Disease and Zoonoses Centers in support of the efforts of the Governments of the Americas for the control and prevention of animal disease, and to make headway with animal health programs. The topics to be discussed at the present Meeting--the production and availability of veterinary products; quarantine systems for foot-and-mouth disease control; the role of wild species in the transmission of zoonotic diseases; and infertility in cattle and its relationship with livestock development and food production--were today matters of the utmost importance for animal husbandry in all the countries. The significance of international cooperation in animal health activities was undeniable. Hence, the countries had decided to organize regional projects such as the Center for the Production of Veterinary Biologicals of Central America and Mexico, the Arbovirus Center in Venezuela, and the Vesicular Disease Diagnosis Laboratory in Panama. He further pointed out that the efforts made in program areas were supplemented by research and human resources development, dissemination of scientific information, and direct technical cooperation with the PAHO Member Countries at their request. Zoonoses control and the consequent increase in the production and yield of the livestock industry were factors that went a long way toward ensuring that national food and nutrition policies would be successful and attain the goals laid down in the Ten-Year Health Plan. In conclusion, he said that although the activities of the Governments, which were firmly supported by PAHO, had brought spectacular results, even greater combined efforts were needed to achieve the final result desired by all the countries, namely the achievement of greater well-being for all the people.

Dr. Contreras welcomed the participants in the name of the President of Venezuela and referred to the importance attached by the Venezuelan Government to agriculture and livestock development. He spoke of the picture presented by foot-and-mouth disease in the Hemisphere and the efforts required for controlling the disease in the countries affected and preventing it in the disease-free areas. In Venezuela the foot-and-mouth disease control program embraced systematic and compulsory vaccination throughout the territory, the training of personnel, and cooperation with stockbreeders for carrying out any measures needed to cope with the problem. He also referred to other activities being undertaken to combat animal diseases such as brucellosis and bovine tuberculosis; and he thanked the Pan American Health Organization for the assistance it had given for that purpose. He

likewise referred to the expansion of the network of veterinary diagnostic laboratories in the country giving support to the Veterinary Research Institute in Maracay. He mentioned the need for changes in the administrative structure of programs to make them more flexible and hence able to comply more promptly with the objectives for which they had been established.

He said that the present occasion was propitious for accepting the challenge to improve the situation existing in the Region in regard to the availability of sufficient food to feed the population of the various countries. He thought it advisable to go even further and deal not only with the specific question of animal health but also with proper exploitation of the various species, the improvement of genetics, the economics of stockbreeding, among other subjects of importance to animal health. There must be a bold approach to the measures to be taken to solve the problems common to all the countries in the field of nutrition.

In conclusion, he expressed the hope that the Meeting would produce decisions of outstanding importance for the programs being undertaken by the countries to improve the health of their animal populations; such decisions were of particular importance today in the light of the faster and faster-growing food requirements throughout the world.

He then declared the IX Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control officially open.

The first plenary session, with Dr. Hernán Garrón in the Chair, was devoted to the item "Production, Control and Availability of Veterinary Biologicals by the Governments and their Institutions in the Americas." Dr. Raúl Casas Olascoaga, of the Pan American Zoonoses Center, presenting the first paper, stressed the importance of the production of veterinary biologicals for animal health programs. He said that national authorities could play a fundamental role in regard to biological products used in the diagnosis, prevention and control of animal diseases, by coordinating and planning production in conjunction with industry, enabling the latter to cope with the needs of the countries and maintain a balance between supply and demand. He likewise referred to external sources of supply of such products, to technical and scientific advances made in the production of veterinary biologicals in the last few years, to the general conditions required for the production of biologicals, and to the distribution and storage of biological products.

Dr. Diódoro Batalla Campero, of National Veterinary Biological Productions, Mexico, next submitted the paper entitled "Regional Laboratories for the Production and Control of Veterinary Biologicals." He spoke of the regional project being carried out by the countries of Central America, Panama and Mexico for setting up a center designed to cover the needs of the countries in biologicals for veterinary use, a project for which it was hoped that cooperation would be forthcoming from PAHO, UNDP and FAO. He pointed out that animal health programs necessitated good-quality antigens

and reagents to ensure the correct diagnosis of diseases, a knowledge of their distribution and prevalence and an evaluation of the results achieved by means of control activities. He went on to give statistical information on the estimated need for biologicals for veterinary use in the countries in question between 1976 and 1979; and he specified the long-term and short-term objectives and the production goals of the above-mentioned regional project for biologicals production.

The third paper on the item was presented by Dr. Newton Wiesmann Guimarães, of the Distribution Program of the Drug Center (CEME) of Brazil. Referring to national systems for the production and supply of biologicals, he outlined the support given by CEME to activities for the manufacture and distribution of pharmaceutical products and its work on the coordination of manufacture of rabies vaccine by national laboratories. He said that as a result of the work of that body it had been possible to modernize laboratories and to improve the breeding and handling of laboratory animals. In conclusion, he touched on the system of quality control of vaccines, the supply of drugs, and the storage of products supplied by CEME.

Next, Dr. Gabriel Baraya González, of the Colombian Veterinary Products Enterprise, Inc. (VECOL), of Bogotá, presented a paper entitled "Official Production of Biologicals for a National Animal Health Program." He pointed out that the work of VECOL, which when it began in 1950 was limited to foot-and-mouth disease, had over the years been expanded to cover other zoonoses. Today it was an undertaking attached to the Ministry of Agriculture of Colombia, in which the State was the majority shareholder. Its purpose was the production of biologicals and chemical-pharmaceutical compounds for veterinary use. VECOL operated on a nonprofit-making basis, and provided the country's livestock industry with a complete line of products satisfactorily catering for health needs at reasonable cost to the stockbreeders of the country.

When the debate opened, the Representative of Chile said he would like to know whether, in view of the high cost, the control of biologicals should be done separately for products for veterinary use and for human use. Dr. Casas felt that that depended on the particular situation obtaining in each country. In some countries the control laboratories were unified; in others they were separate. In order to reduce costs, it would obviously be beneficial to integrate the services.

The Representative of Chile inquired whether an attempt should be made to unify the two types of control. Dr. Guimarães said that in Brazil control was done separately. Dr. Batalla described Mexico's experience; there too, control was separate for administrative and budgetary reasons. Dr. Baraya said that in Colombia, likewise, control was separate.

The Representative of El Salvador asked where rabies control would be carried out; Dr. Casas replied that that would depend on the structure of the services in each country.

The Representative of Panama asked when National Veterinary Biological Productions (PRONABIVE) was likely to begin to operate. Dr. Batalla said that the construction work would be completed by May and operations could begin in the second half of 1976. Dr. Acha stated that UNDP was considering this important project and had indicated that no definite decision could be taken on the subject until 1977. He also pointed out that PAHO and the Government of Mexico had signed an agreement in regard to PRONABIVE.

The Representative of Haiti asked whether biological products coming from countries affected by foot-and-mouth disease constituted a risk for disease-free countries. Dr. Casas said that potentially such products could be dangerous, but provided control measures were taken the risks could be avoided.

The Representative of Jamaica said that his country did not produce biologicals and was dependent on products from the United Kingdom, the United States of America, and Canada. He felt that an international organ should be responsible for quality control in government laboratories.

The second plenary session, in the afternoon of 5 April, was devoted to the presentation of reports on the present situation in regard to the progress and implementation of the recommendations and goals on animal health and veterinary public health in the Ten-Year Health Plan for the Americas.

Dr. Pedro N. Acha, Chief of the Division of Disease Control of the Pan American Sanitary Bureau, explained that in accordance with the agreement reached at the 1975 Meeting in Guatemala, the veterinary advisers to each of the PAHO Zones would present the consolidated reports covering the countries included in each zone. Thus the reports in question were presented in the following order:

Report of the countries of Zone I (Bahamas, Barbados, Guyana, Jamaica, Surinam, Trinidad and Tobago, Venezuela, France, Kingdom of the Netherlands, United Kingdom), presented by Dr. Eugene Papp, the Zone veterinary adviser.

Report of the countries of Zone II (Cuba, Dominican Republic, Haiti, Mexico), presented by Dr. Enrique Mora, the Zone veterinary adviser.

Report of the countries of Zone III (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama), presented by Dr. Jorge Escalante, the Zone veterinary adviser.

Report of the countries of Zone IV (Bolivia, Colombia, Ecuador and Peru), presented by Dr. Benjamín L. Morán, the Zone veterinary adviser.

Report of Zone V (Brazil), presented by Dr. Juan Zapatel, the Zone veterinary adviser.

Report of the countries of Zone VI (Argentina, Chile, Paraguay and Uruguay), presented by Dr. Rubén A. Lombardo, of the Pan American Zoonoses Center.

Report of Canada and the United States of America, presented by Dr. Luis V. Meléndez, Regional Adviser in Veterinary Medicine.

When the presentations were completed, the Representative of Panama referred to the prevention of foot-and-mouth disease in the Darién region, requesting that financial support be stepped up with a view to safeguarding that problem area. He also mentioned the foot-and-mouth disease research laboratory which was to operate in Panama. Next, the Representative of Jamaica said that the method of presenting reports had been improved, but he requested that in future there be uniformity in the reports.

The Representative of Chile said he was surprised that no mention had been made of his country's achievements in regard to foot-and-mouth disease control, and Dr. Lombardo replied that the subject would be dealt with in the report of the South American Commission for Foot-and-Mouth Disease Control (COSALFA). Dr. Acha agreed with the Representative of Chile, a country that had done praiseworthy work in relation to foot-and-mouth disease and had been free of the disease since 1975. He also mentioned the efforts made in that direction by Paraguay and Uruguay. He agreed with the Representative of Jamaica that it might be useful to standardize the reports in the future. The Representative of Ecuador likewise considered that presentations should be uniform, and he suggested that a model be designed for use in each region. He also thought that the reports should contain a larger element of evaluation and criticism instead of confining themselves to giving an account of progress made. He regretted that no figures had been given in the report as presented concerning what had been achieved in Ecuador. The Representative of Jamaica felt that Chile should be congratulated on what it had achieved. The Representative of Haiti agreed with the Representative of Ecuador and felt that in the future papers should include references to errors which called for rectification in order to proceed with programs. The Representative of Guyana congratulated Chile and said that his country too was free of foot-and-mouth disease. The Representative of Haiti considered that the question of countries which did not possess vaccines for animal health campaigns should be discussed.

The Representative of Brazil pointed out that efforts should continue to be made to improve the machinery of the RICAZ meetings, and the Representative of Guyana agreed with him. Dr. Acha said he was gratified to note the concern of the Representatives to perfect the arrangements for conducting the meetings; but he pointed out that any decision on the subject must take account of the additional financial implications of extending the length of the meetings. He suggested that on the final day of sessions the subject might be studied at greater length so that the Organization could ascertain what the countries really wanted and adjust its plans accordingly for future meetings.

The Rapporteur then read out two draft resolutions on the subject of laboratories for the production of veterinary biologicals which had been debated at the morning session, and they were unanimously approved.

The third plenary session took place on the morning of 6 April, under the Chairmanship of Dr. Carmelo Contreras, Minister of Agriculture and Husbandry of Venezuela. It began with a presentation by Dr. Humberto Olmos Colmenares (Venezuela) of the report of the Third Regular Meeting of the South American Commission for Foot-and-Mouth Disease Control (COSALFA), held in Caracas on 1 and 2 April 1976, including recommendations on the activities carried out by the countries to combat the disease.

Dr. Jerry J. Callis, Director of the Plum Island Animal Disease Center, of the U.S. Department of Agriculture, presented the report of the Scientific Advisory Committee of the Pan American Foot-and-Mouth Disease Center, which reviewed the work done by the Center in 1974 and 1975 and made recommendations on the programs to be carried out in the future.

Next, Dr. Roberto Goić, Acting Director of the Pan American Foot-and-Mouth Disease Center, presented the program and budget of the Center for 1976 and the proposed estimates for 1977, underlining the efforts being made to meet the requests of the various countries. He outlined the results obtained in the foot-and-mouth disease campaign over the past year, and reaffirmed the Center's desire to continue to work with the countries on these activities. He also pointed out that on the basis of the budget presented, only the Center's current activities could be undertaken, and for that reason the Center had tried to obtain emergency funds from IDB and UNDP in order to cope with the increase in operational and program costs.

The Representative of Brazil asked whether the budget deficit referred to at at the 1975 Meeting had been corrected. Dr. Mário V. Fernandes, Chief of the Department of Human and Animal Health, PASB, explained that, in spite of voluntary assistance received from the Governments of Brazil, Ecuador and Venezuela, it had been necessary to make adjustments in the budget, although this was not reflected in any reduction in technical assistance, but merely in fellowships.

The Representatives of Paraguay, Guyana, Uruguay, Bahamas, Colombia, Jamaica, Chile and Venezuela expressed their full support for the activities of the Center and the budget as presented, at the same time stressing the importance of considering voluntary contributions so as to relieve the present financial situation.

The Representative of Haiti considered that it was very important to ascertain the opinion of all the Representatives as to the possibility of obtaining voluntary funds for foot-and-mouth disease control.

The Representative of Guyana asked whether support had been requested from IDB for the Center's research; Dr. Goić replied that at the present time

a document was being prepared in connection with the possibility of IDB assistance for that purpose.

The Representative of Jamaica said he would like to know whether all the commitments for 1976 had been fulfilled. Dr. Acha explained that it had been necessary to call on PAHO regular funds to meet the deficit in the Center's budget, and that some fellowship programs would have to be reduced.

The Representative of Ecuador likewise expressed his full support for the work of the Center and proposed that in order to alleviate the budgetary problem the countries receiving direct benefits from the Center should undertake to train personnel and to finance this activity directly. Dr. Fernandes considered the proposal by the Representative of Ecuador a sound one and said that Brazil and Venezuela had already taken steps in that direction.

Dr. Goić said that in addition to the costs connected with the training of fellowship-holders, the costs incurred for equipment and installations for that type of training had also to be considered.

The Representative of the United States of America fully endorsed the Center's budget which he considered very reasonable. The Representative of Argentina regretted that he would be unable to take part in the discussion of the topic. He explained that the participation of his country in the meeting should be considered solely for the purposes of information since he wished to observe its deliberations. In due course, his Government would inform the pertinent agencies of its position with respect to the topics discussed. The Representatives of the Dominican Republic, Panama, Cuba, Mexico and Peru indicated their approval of the budget as presented.

The President announced that the budget was approved, and asked the Rapporteur to draft a resolution on the subject.

The Rapporteur next read out a draft resolution concerning areas free of foot-and-mouth disease. The Representatives of Colombia and Jamaica submitted amendments to the draft, and the President therefore asked the Rapporteur to prepare a new draft resolution taking account of the amendments.

The Representatives of Colombia, Haiti and Venezuela said they were interested to know what criteria should be required before a country could be considered free of foot-and-mouth disease. Dr. Goić explained that according to one criterion, two years must elapse since the country had had the last case of foot-and-mouth disease before it could be regarded as disease-free. He also mentioned that there was no definition of disease-free areas within an affected country, and he suggested that this matter be studied more thoroughly.

Guyana considered that the requirements to be met before a country be declared free of foot-and-mouth disease should be clearly established.

The Representative of Venezuela explained that the export to disease-free countries of livestock products from countries with disease-free areas and countries in which foot-and-mouth disease was endemic represented a risk from the international point of view.

The observer for the Inter-American Development Bank, Dr. Abraham A. Arce, expressed IDB's satisfaction at the support given by PAHO to the countries through the Pan American Foot-and-Mouth Disease Center. It had enabled substantial progress to be made in the countries affected by the disease. He was convinced that the programs for cooperation between the Center and the Governments were based on realistic evaluations of the situation existing in each country.

The Rapporteur next read out a draft resolution on the COSALFA report presented earlier, and another on the report of the Scientific Advisory Committee of the Center; both were unanimously approved.

Dr. Ramón Rodríguez Toro, Director of the Pan American Zoonoses Center, presenting the program and budget of the Center for 1976 and the proposed estimates for 1977, pointed out that they had been planned on the basis of the needs of the countries in their animal health programs. He referred to the research being done on hydatidosis and to the course in planning held each year in conjunction with the Foot-and-Mouth Disease Center. He emphasized the Center's critical financial situation caused by inflation and complicated by the fact that the agreement on UNDP aid was due to end in 1976. He appealed to the countries to take note of the efforts needed to meet the requests received by the Center with the limited funds at its disposal.

The Representative of the Dominican Republic pointed out that many zoonoses programs were carried out with financial assistance from IDB, and for this, help from CEPANZO was essential. He was disturbed to note that the budget was tight, and he proposed that a study of fellowship costs be undertaken so that items on that subject could be included in the projects placed before IDB.

The Representative of Mexico congratulated Dr. Rodríguez on his presentation of the Center's program and budget and suggested that the possibility be considered of requesting assistance for the Center from IDB.

The Representative of Paraguay described the animal health program being developed in his country with the help of PAHO and IDB, and expressed his thanks for the assistance being given to Paraguay by the Zoonoses Center in carrying out various activities for the control of animal diseases.

The Representative of the United States of America said that action to combat zoonoses was of the utmost importance in view of the repercussions

of the problem on the livestock industry in the various countries. He found the budget presented by the Center satisfactory; he thought, however, that plans should be made to establish the appropriate priorities.

The Representative of Venezuela also expressed satisfaction with the report presented. His Government was alive to the Center's financial problems and had considered the possibility of suggesting that the Center be transferred to Venezuela.

Dr. Acha thanked the various Representatives for their favorable comments on the Foot-and-Mouth Disease and Zoonoses Centers. He pointed out that not only PAHO but the governments as well had their economic problems. He reminded the Meeting that the Foot-and-Mouth Disease Center was about to complete 25 years of activity, and the Zoonoses Center would shortly complete 20 years. The work done had only been possible with the help of all the Governments of the Region, especially the countries where the two Centers had their headquarters, namely Brazil and Argentina.

The fourth session was held on 6 April, in the afternoon, under the Chairmanship of Dr. Anthony Roberts, Minister of Agriculture, Fisheries and Local Government of the Bahamas. When the plenary session opened, the Rapporteur read out the draft resolution on the program and budget of the Pan American Foot-and-Mouth Disease Center, and it was unanimously approved.

The Meeting then went on to discuss item 11 of the agenda: "Panel on the Role of Wildlife in the Transmission of Zoonotic Diseases." Dr. Ramón Rodríguez T., presenting the paper entitled "Wildlife in the Transmission of Zoonoses in the Americas," pointed out that many mammals and wild birds in the Americas were well-known hosts for a large number of microorganisms potentially pathogenic to man and domestic animals. He felt that studies should be promoted in all the countries with a view to ascertaining the true incidence of these pathogenic agents, since wildlife diseases could constitute serious problems for the Region.

The paper which followed, presented by Dr. Carlos Sanmartín, Laboratory Adviser to PASB stationed in Caracas, dealt with the topic "Arbovirus Encephalititis, with Special Reference to Equines." It described the encephalitides in the Americas which attack humans and those which affect not only man but also domestic animals, especially equine animals. Those in the first group include the Powassan virus, Colorado tick fever, California encephalitis and St. Louis encephalitis. The second group comprises western equine encephalitis, eastern equine encephalitis, and Venezuelan equine encephalitis. Control of the last-named type was based primarily on the vaccination of equine animals, and hence the availability of high-quality vaccines was of the utmost importance.

The third paper was presented by Dr. Rexford Lord, Ecologist of PASB, stationed at Maracay, Venezuela, the subject being: "The Importance of Bats in the Epidemiology of Zoonoses, with Emphasis on Bovine Rabies." He referred

to the role played by bats in mycotic, protozoan, bacterial and viral diseases. He also referred to rabies in nonhematophagous bats and to the transmission of rabies to bovines by the vampire bat. He pointed out that investigation of the epidemiology of bat-borne zoonoses was in its infancy; nevertheless there was no doubt that bats were hosts in many diseases. There were specific new methods of bat control which should be put into operation.

When the discussion opened, the Representatives of Colombia, Ecuador, Venezuela and El Salvador referred to the problem of encephalitis in their respective countries and to the action taken to combat it. Dr. Sanmartín gave additional information, at the request of several Representatives, concerning the paper presented. The Representative of El Salvador outlined the epidemiologic situation in regard to encephalitis in his country and inquired as to what had to be done to control it. The vaccine used was apparently of good quality, yet the previous year, when 30,000 animals had been vaccinated, there had been a new outbreak in neighboring areas.

The Representative of Mexico considered it highly desirable that the Mexican vaccine used in El Salvador against encephalitis be subjected to control, since it needed to be handled with great care. He observed that in Mexico there had been no VEE since 1972, following mass administration of vaccine.

With regard to the subject of rabies and bats, the Representatives of Nicaragua, Costa Rica, Guyana and Trinidad and Tobago asked questions, which were answered by Dr. Lord and Dr. Acha.

Dr. Pedro N. Acha next presented the document containing a study on the feasibility of establishing a school of veterinary medicine in the Caribbean region. It described the efforts being made to implement this joint project undertaken by the Caribbean countries and wholeheartedly supported by PAHO.

The Representative of Guyana expressed his gratitude to Dr. Acha for the report presented. He was in complete agreement with it and would be submitting a draft resolution on the subject.

The Representative of Haiti indicated that he would like to be involved in the project, since he was interested in the subject.

The Representatives of Trinidad and Tobago and Jamaica also expressed their thanks for the presentation of the study and their appreciation of the information contained in it.

The Rapporteur then read out the draft resolution concerning areas free of foot-and-mouth disease, following which there was an interesting debate in which the Representatives of Venezuela, Colombia, Mexico, Uruguay, Guyana, Chile, Brazil, Guatemala and Costa Rica, and the observer for the

Regional International Organization for Plant and Animal Health, took part. Some of the speakers expressed their desire for a clear definition of what the term "area free of foot-and-mouth disease" was intended to cover. Following statements by Dr. Goić and Dr. Acha, the draft resolution on disease-free areas was put before the Meeting, and was unanimously approved, without amendment.

The Rapporteur next read out the draft resolutions on the importance of bats in the epidemiology of zoonoses and on wildlife in the transmission of zoonoses, and both were unanimously approved.

When the fifth session opened, on 7 April, under the Chairmanship of Dr. Anthony Roberts, the Rapporteur read out three draft resolutions, on the program and budget of CEPANZO, on UNDP assistance to CEPANZO, and on the Regional Center for Equine Encephalitis, respectively, and all of them were unanimously approved.

The Meeting then turned to item 9 of the Agenda: "Panel on Quarantine Systems for Control of Foot-and-Mouth Disease." The first paper, presented by Dr. Goić, was entitled: "Animal Quarantine Stations in the Americas." It stated that according to information dating from 1974, the infrastructure of animal quarantine stations seemed inadequate to fulfill its role. However, in view of the rising trend of international trade in livestock, which made demands and exerted pressure on the livestock sector, a thorough review of the situation was urgently called for with a view to taking the appropriate measures and planning the establishment of whatever stations were needed to carry out effective animal health control.

Dr. Kenneth F. Wells, Veterinary Director General in the Department of Agriculture, Canada, presented the paper entitled "Quarantine Stations in Foot-and-Mouth Disease-Free Countries," which described the work done by Canada in regard to the importation of livestock through its quarantine stations so as to prevent the introduction into the country of foreign animal diseases, in particular foot-and-mouth disease. He said that maximum security quarantine station systems were complex and costly, but everyone agreed that it was essential to make the effort to organize them.

The third paper: "Quarantine against Foot-and-Mouth Disease in the Countries Affected by the Disease," was presented by Dr. Carlos Palacios, Director of the National Farm Research Center of the Ministry of Agriculture and Husbandry of Venezuela. He described the work done at the Paraguaná Quarantine Stations in the State of Falcón, Venezuela. He also explained the method used for the examination of bovine carriers of the viruses of foot-and-mouth disease, brucellosis and tuberculosis, and he outlined the results of the quarantine established for animals imported by Venezuela between 1967 and 1975.

The final paper, "Disease Transmission Through Bull Semen and Fertilized Bovine Ova," was presented by Dr. Jerry J. Callis, Director of the Plum Island Animal Disease Center, U.S. Department of Agriculture. He

referred to the disease agents which could be transmitted by bull semen, foot-and-mouth disease virus in semen, the provisions for semen importation, and the tests on the subject conducted at the Plum Island Center.

The next speaker, Dr. Carlos Ruiz Martínez, observer for IOE, said that IOE had always been concerned with the problem of quarantine stations, and he outlined the work done on that subject in the 1960's. Dr. René Vittoz, Director General of IOE, said it was gratifying to note the importance given at the present Meeting to quarantine stations for foot-and-mouth disease control. He referred to the international animal health code, which was to be approved at the next meeting of IOE.

The Representative of France commented on the papers presented by Dr. Goić and Dr. Wells, and said that although the quarantine stations at San Pedro and Miquelón belonged to France, there was an agreement with the Canadian Government by which they were operated by Canada.

The Representatives of Brazil, Chile, Colombia, Bahamas, Jamaica, and the United States of America, and the observer for FAO, asked a series of questions concerning quarantine stations and their cost, and they were answered by Dr. Wells and Dr. Callis.

The Representative of Colombia said he was interested in knowing whether there was any possibility of training quarantine station staff in Grosse Ile, Canada. Dr. Wells replied that he saw no reason why not.

In the second part of the session, Dr. Mário V. Fernandes presented a detailed report on the implementation of the resolutions of the VIII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control, reviewing the work done by PAHO and the countries since the date of the VIII Meeting.

Next, Dr. Eduardo Rivera C., of Mexico, presented a report, pursuant to Resolution XIII of the VIII Meeting, on a fact-finding visit he had paid, together with Dr. José Pedro Gonzales of Brazil, to the Urabá region of Colombia, bordering on Panama, and he described the observations made and the conclusions reached by the mission.

The Representative of Colombia thanked Mexico and Brazil for the visit paid to the Chocó area, which was of great importance in connection with foot-and-mouth disease. For the past 15 years, Colombia had been establishing bases for control in that zone, and two years ago, with help from the United States of America,, it had reviewed the outstanding issues and had embarked on the project.

The Representative of Panama expressed his Government's concern at the situation obtaining in the zone in question and asked whether there was any prohibited area for cattle in the Colombian zone visited.

Dr. Rivera replied that in the near future no cattle would be permitted in the "Los Catios" national forest, and he added further information to his previous statement. He pointed out that the problem was of concern not only to Colombia and Panama but to all the countries, especially those to the north of Darién. He therefore considered that help should be forthcoming to the countries interested in controlling and ultimately eradicating foot-and-mouth disease.

When the sixth plenary session began on the afternoon of 7 April, the Rapporteur read out two draft resolutions, one on quarantine stations, the other on veterinary medical education in the Caribbean area; and both were unanimously approved.

The next item to be taken up was "Panel on Sterility in Cattle and its Relation to Livestock Development and Food Production in the Americas."

Dr. Norberto Ras, of the Inter-American Institute of Agricultural Sciences, presented the paper entitled "Subfertility in Bovine Animals and Its Influence on the Production of Foodstuffs and the Economy of the Countries." He referred to reproductive fertility in cattle and the relationship between it and health and the environment, and to subfertility in cattle in the Region and in other parts of the world. He also gave data on production costs and stressed the advantages of improving the fertility of herds.

The paper that followed was presented by Dr. Dieter Plasse of the Faculty of Veterinary Sciences at the Central University of Venezuela, Maracay, under the title: "Management and Nutrition Programs for Improvement of Reproduction Efficiency in Beef Cattle." He said that the improvement in livestock production involved each and every aspect of knowledge in relation to agriculture and animal husbandry, and he itemized the various phases of an integrated program to achieve higher reproductive efficiency in herds, making special reference to the experience gained in Venezuela in this field.

Dr. A. C. Warnick, Professor in the Department of Animal Science at the University of Florida, U.S.A., presenting the paper entitled "Genetics and Selection for Fertility in Cattle," spoke of the variety of factors making for genetic differences in fertility in bovines and cited examples of improvement by selective culling, as well as the findings of studies carried out in this field in the U.S.A., Germany and Venezuela.

Dr. A. Hoerlein, of the College of Veterinary Medicine and Biomedical Sciences, Colorado State University, U.S.A., next presented the paper entitled "The Importance of Genital Vibriosis in Cattle Infertility." He said that this disease was widespread throughout the world and caused enormous losses for the dairy and livestock industry in many countries. Effective control depended on accurate diagnosis, since once vibriosis was diagnosed in a herd, the effects of the disease could be effectively controlled by appropriate vaccination of all the female animals.

Finally, the paper entitled "The Problem of Trichomoniasis in Cattle and Rules for its Control" was presented by Dr. Vernon Tharp, of the College of Veterinary Medicine, Ohio State University, Columbus, Ohio, U.S.A. He described Trichonomas foetus as the etiological agent of an insidious infectious protozoan disease of the reproductive tract of cattle. He also spoke of the way in which trichomoniasis was transmitted, the signs of pathogenesis, the magnitude of the problem and treatment and control of the disease.

When the item came up for discussion, the Representatives of Guyana, Jamaica, Dominican Republic, Colombia, and Cuba commented on the papers presented, and Dr. Tharp, Dr. Ras, Dr. Hoerlein and Dr. Warnick gave additional information on the topic, at the request of the participants.

The Meeting next turned to item 13: "Epidemiological Surveillance of Rabies, Equine Encephalitis, Foot-and-Mouth Disease and Other Vesicular Diseases." Dr. Roberto Goić presented a document giving an account of epidemiologic surveillance in regard to foot-and-mouth disease and other vesicular diseases in the Americas.

Following upon this, Dr. Rubén Lombardo submitted a report on epidemiologic surveillance of rabies and equine encephalitis.

The Representative of Mexico furnished information on bovine rabies in his country and pointed out that diagnosis of the disease had improved. The Representatives of Haiti and France commented on bovine rabies transmitted by carnivorous animals, and Dr. Lombardo presented further details on the subject.

The Rapporteur then read out draft resolutions on foot-and-mouth disease vaccine, on veterinary diagnosis laboratories, and on epidemiologic surveillance in animal health; and all these were unanimously approved. He went on to read out a draft resolution on the Regional Vesicular Disease Diagnosis Laboratory, and this was approved subject to an amendment proposed by the Representative of Panama.

Finally, a statement was made by the Representative of Costa Rica on behalf of the countries of Central America, expressing their thanks to Dr. Pedro Acha as one who had devoted a large part of his professional life to working in the interest of health in the Americas, raising the profession of veterinary medicine to a high level and adding to its prestige, not only by his personal qualities but also through the valuable technical contribution he had made to the Governments of the Americas. He went on to say that because of those activities and those qualities, Dr. Acha had been promoted from his previous post to a more responsible post still higher in the hierarchy, namely that of Chief of the Division of Disease Control in the Pan American Sanitary Bureau. For those reasons, the countries of Central America requested that in the Final Report of the Meeting the record show not only their satisfaction at the well-deserved distinction won by Dr. Acha, but also their acknowledgement of the indefatigable efforts made in the

interest and/or the benefit of those countries by Dr. Acha as Chief of the Department of Human and Animal Health of PASB.

All the participants endorsed the statement of the Representative of Costa Rica by acclamation.

The seventh session was held on 8 April, under the Chairmanship of the Minister of Agriculture and Husbandry of Venezuela, Dr. Carmelo Contreras. It began with a review of procedures and arrangements for future meetings.

The Representative of Brazil reiterated the concern he had expressed in Guatemala in 1975 that the Meeting was unduly technical and that possibly for that reason not all the Ministers of Agriculture of the Americas attended. He proposed that at future meetings the number of topics to be dealt with be reduced and that meetings be divided into two parts, one technical and the other political, attendance by the Ministers being perhaps left until the end part.

The Representative of Trinidad and Tobago considered that the changes introduced during the present Meeting were sufficient, but that the mechanics of future meetings might be improved still further.

From then onward, Representatives of the following countries took part in the debate: Jamaica, Guyana, Haiti, Panama, Ecuador, Surinam, Uruguay, Colombia, Cuba, Chile, United States of America, Nicaragua, Venezuela and Honduras.

To sum up the discussion, there was a consensus among the Representatives as to the need for changes in future meetings, on the following lines:

1. The first part of the Meeting, lasting perhaps one or one-and-a-half days, be attended by the Ministers of Agriculture.

2. The second part, technical in character, would be changed as follows:

   a) the country reports would be drawn up in a uniform manner and could consist of evaluations; and

   b) the time devoted to the discussion of papers would be extended, and these would be summarized by their authors in their oral presentation, instead of being submitted in full, since they would in any case be at the disposal of the participants.

When the debate was resumed, Dr. Pedro N. Acha, speaking on behalf of PAHO, said he was gratified to note the interest shown by Representatives in improving future meetings, and he assured them that the Secretariat had taken note of the recommendations made and would bear them in mind in preparing the X Meeting, to be held in Panama in 1977.

The Representative of Argentina asked for the floor and said that because of the concern expressed at the present Meeting, the Government of Argentina would convene a study group as soon as possible to consider the question of CEPANZO's premises.

The observer for the Inter-American Development Bank, Dr. Abraham A. Arce, then took the floor. He stressed the importance attached by the Bank to the animal health programs being developed by the countries. As a result, in the last few years substantial loans had been made to a number of them. He gave an assurance that IBD would continue to cooperate in those activities, which were essential for improving the nutrition status of the inhabitants of all the countries.

The topics to be dealt with at the next Meeting were next discussed, and the Representative of Panama repeated his Government's invitation to hold the next Meeting in Panama City in March 1977.

The topics proposed by the various Representatives were as follows:

- Opening of the Darién Gap and its socioeconomic importance
- Importance of quarantine control at frontiers
- Health education in animal health programs
- Pesticides and mycotoxicosis
- Mycotoxins and salmonellosis
- Effect of mortality in young animals on food production in the Americas: causes and control measures
- Use of by-products in livestock feeding
- International trade in the main animal products
- Livestock technical assistance services
- Herd management
- Rhinotracheitis virus in bovines and other species

The Secretariat took due note of the topics and assured the participants that they would be borne in mind in preparing the agenda for the next Meeting.

The Representative of Ecuador confirmed his Government's invitation to hold the XI Meeting in Quito in 1978.

The Representative of Brazil expressed thanks on behalf of his Government to Dr. Mário V. Fernandes, now Chief of the Department of Human and Animal Health, PASB, for the work he had done as Director of the Pan American Foot-and-Mouth Disease Center, and wished him every success in his new post. The other representatives and the observer for IDB associated themselves with the statement by the Representative of Brazil.

After a short recess, the closing session was called to order. After reading out the Final Report of the Meeting, the Rapporteur submitted it to the representatives, who approved it unanimously.

Then Dr. Pedro N. Acha, speaking on behalf of the Director of PASB, thanked the representatives for their participation and commended them for the productive work done. He also thanked the Government of Venezuela for the support it had provided for holding the meeting.

Finally, Dr. Carmelo Contreras, speaking on behalf of the Government of Venezuela, expressed his appreciation to PAHO for holding the Meeting and to the secretariat for their efforts, which had contributed to its success, and expressed the hope that the animal health activities of all the countries would continue to be successful.

RESOLUTION I

REGIONAL BIOLOGICALS LABORATORIES FOR VETERINARY USE

THE IX INTER-AMERICAN MEETING,

Bearing in mind the paper on regional laboratories for the production and control of biologicals for animal health (Document RICAZ9/16);

Considering the importance of producing biologicals under proper quality control for the development of programs for the control and/or eradication of animal diseases;

Being aware of the initiative taken by the Government of Mexico to set up a National Laboratory for Veterinary Biological Products (PRONABIVE), which is ready to begin operating at regional level, with the support of the countries of Central America and Panama; and

Taking cognizance of the reply given by the United Nations Development Program to the Government of Mexico, deferring the decision as to its request for practical financing of PRONABIVE until 1977,

RESOLVES:

1. To congratulate the Government of Mexico on the initiative and on the work done up to the present.

2. To acknowledge the support given by the countries of Central America and Panama to the project submitted by the Mexican Government to UNDP.

3. To request UNDP to give special attention to the PRONABIVE project and to implement it as promptly as possible.

(Approved at the second plenary session,
5 April 1976)

RESOLUTION II

QUALITY CONTROL OF BIOLOGICALS

THE IX INTER-AMERICAN MEETING,

Recognizing the importance of reagents and prophylactic biological products in programs for the diagnosis and control of diseases both in man and in animals;

Considering the potential risks arising from the processing of biological products, and the highly specialized services required for evaluating the effectiveness of such products; and

Recognizing the need to unify and standardize biologicals,

RESOLVES:

1. To request PAHO to cooperate in developing a system of quality control of veterinary biologicals designed to define and regulate adequate standards.

2. To recommend to the countries that they establish and/or strengthen supporting laboratories as part of a unified and coordinated system for the quality control of biologicals.

(Approved at the second plenary session,
5 April 1976)

RESOLUTION III

SOUTH AMERICAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

THE IX INTER-AMERICAN MEETING,

Bearing in mind the report of the Third Regular Meeting of the South American Commission for the Control of Foot-and-Mouth Disease (COSALFA) held in Caracas, Venezuela, on 1-2 April 1976;

Considering that the Commission has made it possible to give the campaign against the disease the Hemispherewide scope it requires; and

Observing that the manner in which the regular meetings of COSALFA are held at present does not make for the achievement of their main objective, namely the evaluation of the campaign against foot-and-mouth disease in South America,

RESOLVES:

1. To endorse the resolutions of the Third Regular Meeting of the South American Commission for the Control of Foot-and-Mouth Disease.

2. To support in particular Resolution I, requesting PAHO to hold an annual meeting for the evaluation of the foot-and-mouth disease control programs being carried out by the countries.

3. To suggest to COSALFA that in conducting its meetings it pay special attention to the findings of such evaluation.

(Approved at the third plenary session,
6 April 1976)

RESOLUTION IV

VOTE OF THANKS TO THE SCIENTIFIC ADVISORY COMMITTEE OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

THE IX INTER-AMERICAN MEETING,

Having appreciated the excellent report of the Scientific Advisory Committee of the Pan American Foot-and-Mouth Disease Center on its work in 1974 and 1975 (Document RICAZ9/4);

Being aware that the research, technical cooperation and training activities carried out by the Center are fundamental in combating foot-and-mouth disease; and

Recognizing the eminence in the science field of the members of the Scientific Advisory Committee,

RESOLVES:

1. To offer a vote of thanks to the Scientific Advisory Committee of the Pan American Foot-and-Mouth Disease Center for its wide-ranging analysis of the Center's program in 1974 and 1975.

2. To endorse its recommendations, especially those on research designed to improve vaccines and on the problem of the survival of the foot-and-mouth disease virus in milk and milk products.

(Approved at the third plenary session,
6 April 1976)

RESOLUTION V

PROPOSED PROGRAM AND BUDGET OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1977

THE IX INTER-AMERICAN MEETING,

Bearing in mind Resolution III of the VIII Inter-American Meeting on Foot-and Mouth Disease and Zoonoses Control concerning the program and budget of the Center for 1976;

Having carefully studied the proposed program and budget for 1977 (Document RICAZ9/8);

Observing that the activities under the program for 1977 will be hampered by shortage of regular budget funds; and

Bearing in mind that the Center is an organ of vital importance for the prevention, control and eradication of foot-and-mouth disease in the Americas,

RESOLVES:

1. To recognize that the proposed program and budget for 1977 contains activities which are necessary if the Center is to continue to give basic support to the country programs for the prevention, control and eradication of foot-and-mouth disease.

2. To recommend to the XXIV Meeting of the Directing Council of PAHO that it give favorable consideration to approving the program and budget of the Center for 1977, as set forth in Document RICAZ9/8.

3. To recommend to the Ministers of Agriculture that they study the possibility of making voluntary contributions so that the growing demand for technical cooperation can be met.

4. To thank once again the countries and international agencies which support the Center, and especially the Government of Brazil for its outstanding contribution.

(Approved at the fourth plenary session,
6 April 1976)

RESOLUTION VI

AREAS FREE OF FOOT-AND-MOUTH DISEASE

THE IX INTER-AMERICAN MEETING,

Considering the importance from the epidemiologic, economic and program points of view of ensuring that areas or countries in South America are kept free of foot-and-mouth disease;

Considering that the experience gained and the progress made in this direction are basic to the goal of eradicating the disease from the Hemisphere; and

Being aware that this progress presupposes energetic, disciplined and unceasing action with a broad sense of intercountry cooperation,

RESOLVES:

1. To urge the countries of South America which are free of foot-and-mouth disease to maintain the surveillance required to keep them so.

2. To recommend to the countries that in conjunction with PAHO they define the criteria to be required before an area in a given country can be declared free of foot-and-mouth disease.

3. To recommend to the countries affected by foot-and-mouth disease that they consider undertaking the epidemiologic and socioeconomic study required for the establishment of disease-free areas.

(Approved at the fourth plenary session,
6 April 1976)

RESOLUTION VII

IMPORTANCE OF BATS IN THE EPIDEMIOLOGY OF ZOONOSES, WITH EMPHASIS ON BOVINE RABIES

THE IX INTER-AMERICAN MEETING,

Bearing in mind the papers presented on the importance of the bat as host in many communicable diseases affecting both men and animals;

Considering that research on the epidemiology of zoonotic diseases transmitted by bats is in its infancy;

Recognizing, nevertheless, the role of the vampire bat in the transmission of bovine rabies; and

Taking cognizance of the results achieved in a number of countries in regard to control of the vampire bat population using new techniques calculated to solve the problem of bovine rabies,

RESOLVES:

1. To urge the Governments to institute active programs for the control of the vampire bat population in areas affected by bovine rabies.

2. To encourage the countries affected to increase production of modified live virus vaccines with a view to carrying out systematic vaccination programs on bovines.

3. To recommend to the countries that they initiate or continue research designed to improve the knowledge of the role of bats as potential reservoirs and transmitters of zoonotic diseases.

(Approved at the fourth plenary session,
6 April 1976)

RESOLUTION VIII

WILDLIFE IN THE TRANSMISSION OF ZOONOSES

THE IX INTER-AMERICAN MEETING,

Bearing in mind that man's encroachment upon wildlife areas to serve the expansion of his current obvious needs involves changes in the ecological system of the territories colonized;

Considering that wild species constitute a source of infection for man and animals; and

Considering that it is urgently necessary in the Region to develop an appropriate diagnosis of diseases of wild animals, in conjunction with research activities,

RESOLVES:

1. To request the Pan American Health Organization to encourage initial efforts by the diagnostic laboratories of the various country animal health services to study the diseases of wild species.

2. To request PAHO to study the possibility of interesting university circles in the idea of including diseases in the relevant curricula subjects relating to wildlife and at the same time to try to integrate these important studies in a properly coordinated manner in the various professional sectors.

(Approved at the fourth plenary session,
6 April 1976)

RESOLUTION IX

PROPOSED PROGRAM AND BUDGET OF THE PAN AMERICAN ZOONOSES CENTER FOR 1977

THE IX INTER-AMERICAN MEETING,

Having studied the program and budget of the Pan American Zoonoses Center for 1976 and proposed estimates for 1977 (Document RICAZ9/7);

Recognizing the importance and significance of the technical work done by the Center for all the countries of the Region;

Bearing in mind that many countries are carrying out national zoonoses control programs which involve a heavy economic burden for the livestock industry and have repercussions on human health;

Recognizing that these programs include planning, progressive training, reference services and the adequate supply of biologicals by the Center; and

Considering that an increase is anticipated in the demand for services by the countries and in the relevant operational costs,

RESOLVES:

1. To give solid support to the work being done by the Pan American Zoonoses Center.

2. To recognize that the help given by the Center to the countries needs to be expanded, especially action in the vital fieldwork sector.

3. To emphasize that the program and budget estimates spread the Center's various activities in a satisfactory manner, in accordance with the needs of the countries.

4. To express its sincere thanks to the Government of Argentina and to the United Nations Development Program for the support given to the Center.

5. To recommend to the XXIV Meeting of the Directing Council of PAHO that it approve the program and budget of the Pan American Zoonoses Center as set forth in Document RICAZ9/7.

6. To recommend to the Ministries of Agriculture that they consider the possibility of making voluntary financial contributions so as to alleviate the budgetary difficulties which the Center is clearly experiencing in the face of constant demand on the part of the countries.

(Approved at the fifth plenary session,
7 April 1976)

RESOLUTION X

REQUEST TO THE UNITED NATIONS DEVELOPMENT PROGRAM THAT IT CONTINUE TO COOPERATE IN THE ACTIVITIES OF THE PAN AMERICAN ZOONOSES CENTER

THE IX INTER-AMERICAN MEETING,

Bearing in mind that in a number of countries of the Americas there are zoonosis control programs and that in others such programs are being initiated or expanded, on the basis of large-scale investments by the countries or by international credit agencies;

Considering that the Pan American Zoonoses Center has played an effective part in all these activities and that it is regarded as necessary that it continue and expand its technical assistance activities to the countries and also provide training and reference services for diagnosis and production and control of biologicals; and

Recognizing that the assistance provided by the Center under the Ten-Year Health Plan for the Americas (1972) has been made possible by the substantial financial support given by the United Nations Development Program to the Regional Program, which comes to an end in 1976,

RESOLVES:

1. To express its thanks to the United Nations Development Program for the support given to the countries of the Americas through the Regional Program for the Pan American Zoonoses Center in force until the end of 1976.

2. To request UNDP to give favorable consideration to financing a new Regional Project for assisting the countries through the Pan American Zoonoses Center, to begin in January 1977 and to run for a period of not less than three years.

3. To request PAHO to provide the necessary technical assistance for the preparation of the new Regional Project and to continue to act as executing agency.

(Approved at the fifth plenary session,
7 April 1976)

RESOLUTION XI

ESTABLISHMENT OF A REGIONAL CENTER FOR THE STUDY OF EQUINE ENCEPHALITIS

THE IX INTER-AMERICAN MEETING,

Bearing in mind that the Government of Venezuela has confirmed its interest in equine encephalitis research and control;

Considering that a joint committee was set up by the Ministry of Health and Social Welfare and the Ministry of Agriculture and Animal Husbandry of Venezuela to prepare a preliminary draft with a view to establishing a Regional Research and Surveillance Center for Venezuelan Equine Encephalitis; and

Considering that the preliminary draft in question has already been prepared and is being considered by the Venezuelan authorities,

RESOLVES:

To thank the Government of Venezuela for its continuing interest in the problem of equine encephalitis and to urge it to proceed with the plans to set up the proposed Center, which is urgently needed by the countries of the Americas.

(Approved at the fifth plenary session,
7 April 1976)

RESOLUTION XII

MEETING AT HEMISPHERE LEVEL ON QUARANTINE STATIONS

THE IX INTER-AMERICAN MEETING,

Considering the reports submitted (Documents RICAZ9/5, 17, 23 and 26) and the comments made on the item "Panel on Quarantine Systems for Control of Foot-and-Mouth Disease";

Bearing in mind that the present systems of veterinary inspection and the diagnostic methods used offer a high degree of reliability in detecting animals carrying infection or contaminated products of animal origin which should be withdrawn from international trade;

Considering that there is a growing world demand for foodstuffs of animal origin and that the trade exchanges which have occasionally to be made for social, political or commercial reasons between countries affected by foot-and-mouth disease and disease-free countries necessitate the adoption of technical norms for regulating international trade in animals and animal products that provide suitable safeguards to the disease-free countries without constituting instruments of unfair discrimination against the affected countries, in some of which there are well-defined areas which for geographical or other reasons are free of foot-and-mouth disease; and

Considering that various international organizations interested in this matter, such as the United Nations Food and Agriculture Organization (FAO) and the International Office of Epizootics, have suggested ways of making such trade viable, and that marked concern has been shown in this direction by the Organization of American States,

RESOLVES:

To request the Pan American Health Organization, in consultation with the Organization of American States, to promote a high-level conference, to be held in 1977, with a view to discussing norms for regulating international trade in animals and animal products in relation to foot-and-mouth disease.

(Approved at the sixth plenary session,
7 April 1976)

RESOLUTION XIII

PROGRAM OF VETERINARY MEDICAL EDUCATION
FOR THE CARIBBEAN COUNTRIES

THE IX INTER-AMERICAN MEETING,

Considering the importance of having adequate resources in the fields of livestock production, animal health and veterinary public health and of implementing the pertinent resolutions adopted by the Ministers of Agriculture at the III, IV, V, VI, VII and VIII Inter-American Meetings on Foot-and-Mouth Disease and Zoonoses Control;

Recognizing the initiative taken by the Governments of the Caribbean Community and the assistance provided by the United Nations Development Program and the Pan American Health Organization in launching the Regional Educational Project for Training Animal Health Assistants in Guyana in September 1975;

Bearing in mind the increasing difficulty being experienced by Caribbean candidates in gaining admission to schools of veterinary medicine and the extremely high cost of veterinary education in conventional schools; and

Realizing the additional demands which are being made on Caribbean veterinarians in the implementation of the Caribbean Community's Regional Livestock Production Program,

RESOLVES:

1. To commend PAHO and its consultants for the very efficient and expeditious manner in which they have implemented Resolution X, paragraph 3, of the VIII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control.

2. To commend the Governments of the Caribbean countries for their continued interest and support in establishing a Caribbean School of Veterinary Medicine.

3. To recommend to the Governments of the Caribbean that they make a commitment of financial and human resources for the establishment of a Regional Program in Veterinary Medical Education as outlined in Document RICAZ9/27.

4. To request the Pan American Health Organization, in cooperation with the CARICOM Secretariat and UNDP, to promote and convene a meeting of the pertinent Ministers of the Caribbean region for the purpose of considering the report submitted in Document RICAZ9/27 and implementing the recommendations presented in the document, with any amendments the governments deem expedient and necessary.

(Approved at the sixth plenary session,
7 April 1976)

RESOLUTION XIV

OIL ADJUVANT VACCINE TO COMBAT FOOT-AND-MOUTH DISEASE

THE IX INTER-AMERICAN MEETING,

Having taken note of the report of the Director of the Pan American Foot-and-Mouth Disease Center on the progress of research using oil adjuvant vaccine to combat foot-and-mouth disease;

Bearing in mind that this vaccine opens up highly promising prospects for the campaign against foot-and-mouth disease and that it is necessary to speed up the research and to include significant field evaluations;

Observing that if this objective is to be attained, it is necessary to provide the Center with greater resources and to secure the direct participation of the countries in field research; and

Being aware that an agreement on technical cooperation is being worked out between the Inter-American Development Bank and the Pan American Health Organization in regard to training and transfer of technical know-how on the production and application of oil vaccine in the countries of the Region,

RESOLVES:

1. To recommend to PAHO that it continue to give the highest priority to research on oil adjuvant vaccine to combat foot-and-mouth disease, furnishing the Pan American Foot-and-Mouth Disease Center with all possible facilities for speeding up the development of the plan.

2. To request the Inter-American Development Bank to consider the possibility of granting the supplementary financial assistance needed to achieve this objective in a reasonably short time.

3. To urge the countries of the Americas affected by foot-and-mouth disease to collaborate with the Center in giving consideration to oil adjuvant vaccine in their programs for combating the disease.

(Approved at the sixth plenary session,
7 April 1976)

RESOLUTION XV

INTEGRATED INTER-AMERICAN NETWORK OF
VETERINARY DIAGNOSIS LABORATORIES

THE IX INTER-AMERICAN MEETING,

Having noted the report submitted by the Pan American Zoonoses Center on the project for an integrated inter-American network of veterinary diagnosis laboratories, in accordance with Resolution XXII of the VIII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control (Document RICAZ8/FR); and

Recognizing the urgency of supporting this scheme which could give a boost to national animal health programs,

RESOLVES:

1. To request the Pan American Health Organization to prepare a project for implementing and operating a scheme for the coordination of veterinary diagnosis laboratories in the Member Countries, with the direct participation of the Pan American Zoonoses Center and other regional centers, as necessary.

2. To suggest to PAHO that the project in question include financial estimates of capital and running costs, so that applications to the international financing bodies can be made in the appropriate manner.

3. To recommend to the Member Countries that they give PAHO the necessary information to enable it to carry out its task and submit such a project to the X Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control in 1977.

(Approved at the sixth plenary session,
7 April 1976)

RESOLUTION XVI

REGIONAL VESICULAR DISEASE DIAGNOSIS LABORATORY FOR CENTRAL AMERICA AND PANAMA

THE IX INTER-AMERICAN MEETING,

Observing the excellent results achieved in the work done to establish a Regional Vesicular Disease Diagnosis Laboratory for Central America and Panama, in compliance with Resolution XVII of the VIII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control;

Recognizing that regional project RLA/75/045 of the United Nations Development Program meets the requirements for carrying out the first phase of this laboratory scheme; and

Realizing the importance of this project for strengthening foot-and-mouth disease prevention in Central America and Panama,

RESOLVES:

1. To thank the United Nations Development Program, the Government of Panama, the Gorgas Memorial Laboratory and PAHO for their financial, material and technical support in carrying out the project.

2. To recommend to these bodies that they speed up all the formalities needed for the complete achievement of the objectives of the project.

3. To recommend to the countries of the Central American Isthmus that their programs for the prevention and control of foot-and-mouth disease and other vesicular diseases be conducted in close cooperation with the Regional Vesicular Disease Diagnosis Laboratory.

(Approved at the sixth plenary session,
7 April 1976)

RESOLUTION XVII

PROJECT FOR A SYSTEM OF EPIDEMIOLOGIC SURVEILLANCE IN THE ANIMAL HEALTH FIELD

THE IX INTER-AMERICAN MEETING,

Having noted the slow rate of development of systems of epidemiologic surveillance of vesicular diseases (Documents RICAZ9/9, 10 and 12);

Realizing that the evaluation of the Ten-Year Health Plan for the Americas in respect of animal health will depend on the quality of the information obtained by means of these systems;

Considering that to achieve this it is essential that the national epidemiologic surveillance services have at their disposal trained personnel and the necessary equipment and financial resources; and

Being aware that PAHO submitted to the United Nations Development Program a project for speeding up the development of a Hemisphere-wide system of epidemiologic surveillance of foot-and-mouth disease and other communicable diseases of animals,

RESOLVES:

1. To recommend to the countries that they strengthen the epidemiologic surveillance systems to embrace the diagnosis of the animal health situation.

2. To request the Pan American Health Organization to continue to give the highest priority to the action needed to develop these systems on a Hemisphere-wide basis and thus obtain a diagnosis of animal health in the Americas.

3. To request UNDP to give favorable consideration to the epidemiologic surveillance project submitted by PAHO.

4. To recommend to the countries that they inform UNDP of their support for the project.

(Approved at the sixth plenary session,
7 April 1976)

RESOLUTION XVIII

VOTE OF THANKS TO THE GOVERNMENT OF VENEZUELA

THE IX INTER-AMERICAN MEETING,

Bearing in mind the valuable cooperation of the Government of Venezuela in helping to make the holding and conduct of the present Meeting a success, and the effective support and active participation of the officials responsible for its organization; and

Recognizing the generous hospitality shown toward the participants in the Meeting,

RESOLVES:

To express its sincere thanks to the Government of Venezuela for the wholehearted cooperation given in connection with this IX Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control.

(Approved at the seventh plenary session,
8 April 1976)

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 Caracas, Venezuela, this eighth day of April, nineteen hundred and seventy six. 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. Carmelo Contreras Barboza
President of the Meeting
Representative of Venezuela

for Dr. Héctor R. Acuña
Director of the
Pan American Sanitary Bureau
Secretary ex officio of the Meeting

CE76/17 (Eng.)
ANNEX III

PAN AMERICAN HEALTH ORGANIZATION

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

WORLD HEALTH ORGANIZATION

CARACAS, VENEZUELA, 5-8 APRIL 1976

Provisional Agenda Item 8

RICAZ9/8 (Eng.)
25 February 1976
ORIGINAL: ENGLISH-SPANISH

PROGRAM AND BUDGET OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1976 AND PROPOSED ESTIMATES FOR 1977

PROGRAM AND BUDGET OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1976 AND PROPOSED ESTIMATES FOR 1977

I - INTRODUCTION

Among other animal diseases, foot-and-mouth disease is responsible for causing the heaviest damages to livestock and for intensifying the shortage of red protein and milk. This disease affects practically all of South America, and represents a constant threat for the rest of the Continent. Considerable economic losses are due to the frequency of epidemics that affect domestic animals producers of meat and milk, and for impairment to the international marketing of animals and animal by-products. Special mention must be made of some of the chief factors which are responsible for the importance of foot-and-mouth disease:

a) The exceptional plasticity of the virus, which is responsible for the existence of a considerable diversity of types which bear no immunological relationship to each other.

b) The highly contagious nature of the virus, and the rapidity of its diffusion among cattle, sheep and swine.

c) The increase in the cost of production that the stock-breeder must bear, and the concomitant repercussions upon the consumer.

d) The decrease in the availability of the animal protein which is required for good nutrition, chiefly for certain age groups of human population.

e) The decrease of income of foreign exchange, which is felt by the exporting countries in view of the reduction of exportable amounts of livestock products, and the devaluation thereof in the international market.

These factors have converted the fight against FMD into a continental undertaking in which all affected countries directly participate, and for which substantial financial

aid is being supplied by the Inter-American Development Bank. At the present time, approximately 75% of South America's bovine population is covered by the control programs against foot-and-mouth disease.

Similarly, the countries in the disease free area are redoubling their efforts to establish programs capable of preventing the entry of the disease.

II - THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

A. Origin and sources of financing

The Center was created in 1951 by the Organization of American States, at the request of several member countries. It started operations with the headquarters in Brazil as a technical cooperation program of the Organization of American States, managed by the Pan American Sanitary Bureau, and it continued in that character until June 1968. Since this latter date, it has become a regular program of the Pan American Health Organization, financed by contributions from the Organization's members in accordance with the respective resolutions adopted at 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 the Pan American Health Organization (Port-of-Spain, Trinidad and Tobago, October 1967). The Center also receives financial assistance from France, the United Kingdom and the Kingdom of the Netherlands.

In addition to participating with its own quota, as the other countries, Brazil makes a special contribution of the purchasing of materials and other items required for the upkeep of buildings, installations, lands and internal roadways, and for the payment of salaries to the workers who are assigned to perform such jobs.

Through an agreement which was concluded between the Pan American Health Organization and the Inter-American Development Bank, the Center receives a grant from the Bank for the purpose of training veterinarians in vaccine preparation and control at the industrial level. The agreement ends on July 21, 1976, and another similar agreement is being prepared for a 2-year period.

With financial support from the Brazilian Government and the Inter-American Development Bank, an agreement is being prepared to study over a 26-month period the physical losses caused by FMD. The agreement awaits the decision of the Bank.

The United Nations Development Program approved the financing of a 4-year project to establish a Regional Laboratory for the Diagnosis of Vesicular Diseases in Central America and Panama. The Center began to carry out the project on January 1 of this year. The Pan American Health Organization is preparing, in cooperation with the United Nations Development Program, two other projects to be carried out by the Center: one for epidemiological surveillance of FMD and other communicable animal diseases, and another for field testing of FMD oil vaccines.

Within the budget project for 1976, the increase requested applies only to salaries used for maintenance of the regular employees now working for the Organization. Approval of the requested increase will be necessary to avoid a reduction in the operations and services to the Governments. It is evident that the sum represents a small amount of money compared to the total amount of funds disbursed for the control of FMD on the continent.

Due to increasing world inflation, especially high for certain indispensable supplies such as animal feed, chemical products, paper and fuel, and the obligatory periodic increases in local personnel, the annual budget increases are not sufficient to maintain the present level of some of the Center's activities. Thus, for example, in order to complete the 1975 program, it was necessary to use extraordinary funds contributed by the countries. The Governments of Brazil and Venezuela donated US$ 66,000 and 23,000, respectively. We assume that the same problems will be faced in 1976.

B. Purposes and Objectives

The purpose of the Center is to prevent the introduction and establishment of foot-and-mouth disease in this area of the Americas free from the disease, and to achieve control and eradication from the affected area, through the promotion, coordination and advice of the countries, and by carrying out specific activities in research, evaluation and technical

training. In order to undertake these functions, the Center maintains three divisions, as follows: Research, Diagnosis, and Reference; Training and Information; and Field Advisory Services. The purposes of each of these divisions are as follows:

1. RESEARCH, DIAGNOSIS, AND REFERENCE

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

b) 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.

c) Preparation and maintenance of a strain 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.

d) Study and promotion of methods for ascertaining the effectiveness of foot-and-mouth disease vaccines.

e) Study of the epidemiology of the disease through laboratory experimentation and field studies to develop more efficient ways for interrupting the chain of spread of the virus.

f) 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.

g) Basic studies of the biological and physico-chemical characteristics of foot-and-mouth disease and vesicular stomatitis viruses.

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

2. TRAINING AND INFORMATION

a) Organization and conduct of international seminars.

b) Organization and conduct of national courses.

c) Attendance of its expert staff of the Research and Field Advisory Services Department at seminars, courses, and meetings organized by other national or international institutions.

d) Award of fellowship for individual training at the Center or in other institutions.

e) Provision of information available about the epizootiology of vesicular diseases.

f) Provision of library services and up-to-date bibliographies on works published on specific topics of those diseases.

3. FIELD ADVISORY SERVICES

a) Encouragement of an assistance in the planning of national foot-and-mouth disease programs.

b) Studies of technico-administrative methods for the control of foot-and-mouth disease through demonstration pilot areas.

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

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

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

f) Field studies of the most effective preventive and control methods, and evaluation of national campaigns.

g) 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.

Year	Research Diagnosis Reference	Training	Field Advisory Services
1976	50.1%	9.7%	23.2%
1977	50.4%	10.1%	23.0%

Distribution of the funds in accordance with the program of direct services to the Governments is shown on page 39.

C. Administrative and Technical Organization

The organizational structure of the Center comprises the Director's office, three departments (Research, Diagnosis and Reference; Training Activities and Information; and Field Advisory Services); and Administrative Services. Research, Diagnosis and Reference activities are organized in two laboratory groups: one directly related to matters of immunology, and the other concerned with virology. The attached chart contains a resumé of the organizational structure of the Center (Page 33).

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

The activities of the Department of Field Advisory Services are undertaken by the technical staff, from headquarters in Rio de Janeiro, and by means of advisers in various countries. Such activities provide advice on epidemiology administrative methods, statistics, planning, and evaluation of foot-and-mouth disease control campaigns.

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

In odd-numbered years the Scientific Advisory Committee, whose members are personalities of international repute, meets at the Center in order to discuss, analyze and comment on the different projects that are being executed or that are being planned together with the Director and members of the technical staff.

During the Eighth Inter-American Meeting at the Ministerial Level on the Control of Foot-and-Mouth Disease and Zoonoses Control (RICAZ/8), the following resolution, relating to the Center's program and budget for 1976, was approved.

RESOLUTION III

PROPOSED PROGRAM AND BUDGET ESTIMATES OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR 1976

THE VIII INTER-AMERICAN MEETING,

Taking into account Resolution I of the VII Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control on the proposed program and budget of the Center for 1975 and the provisional draft for 1976;

Having carefully examined the proposed program and budget for 1976 (Document RICAZ8/18 and Addendum);

Recognizing that the carrying out of the Center's program for 1974 has been possible due to the extraordinary contributions of the Governments of Brazil and Venezuela;

Realizing that the present increase in operating costs has made it necessary to reduce the programmed activities of the Center in 1975 and that the proposed program for 1976 has a deficit of US$ 376,412, as can be noted in the Document RICAZ8/18 and Addendum;

Aware that it is imperative to maintain at least the present level of activities of the Center, since at this moment the FMD control and prevention programs in the countries are in full development, with heavy national investment and international financial assistance; and

Recognizing the preoccupation and efforts of the Organization to solve the difficult budgetary situation of the Center.

BE IT RESOLVED:

1. To recognize that the program and budget for 1976 contain the basic activities required for the Center to give support to national FMD prevention, control and eradication programs.

2. To recommend to the XXIII Meeting of the PAHO Board of Directors that it consider favorably the approval of the program and budget of the Center for 1976, as it has been established in the Documents RICAZ8/18 and Addendum.

3. To recommend to the Ministers of Agriculture that they study the possibility of providing voluntary contributions to cover the deficit contained in the Center's 1976 budget, in order that the proposed program may be carried out without reductions.

4. To express acknowledgement to the countries and international organizations which cooperate with and support the Center's activities, especially to the Governments of Brazil and Venezuela.

III - RESEARCH ACTIVITIES

Research activities have concentrated on the serological and immunological characterization of field strains, improvement of vaccine production and control methods and the development of routine laboratory tests needed for the support of epidemiological studies.

The C strains which caused outbreaks in the south of Brazil and in Paraguay, Bolivia and the north of Argentina received special attention. These strains proved to belong to subtype C_3, and cross immunity tests in cattle showed that the reference C_3 virus (strain Resende) would provide adequate immunological coverage for the new strains.

The pilot plant has been put in to full operation, and several improvements of production methods have been investigated including optimum conditions for cell growth and virus replication. It was found that high yields of antigen could be obtained with cells adapted to suspension culture when grown in the roller bottle system as well as in medium sized tanks. High quality vaccines have been prepared with these antigens. Concentration and purification of antigens also received careful attention.

The immunogenicity of foot-and-mouth disease vaccines inactivated with binary ethylenimine (BEI) and adjuvanted with either aluminum hydroxide or incomplete Freund's adjuvant was compared to that of identical vaccines inactivated with N-acetylethylenimine (AEI). No differences were found in the levels of immunity induced by vaccines of the same adjuvant type.

Binary ethylenimine is easy to prepare and the preparation is considerably less toxic than AEI. These properties will facilitate its application in industrial vaccine production. BEI can be used for the inactivation of viruses in serum. Sera rendered safe this way, will facilitate international exchange of test reagents.

The Center tested its oil adjuvanted vaccine on a farm with approximately 3,000 head of cattle. The oil adjuvanted vaccine produced a higher and longer lasting protection than the aluminum-gel vaccines. The immune response at revaccination with the oil vaccine 6 months after the first vaccination produced a booster effect and

induced persistent high levels of protection. According to serological surveys six months after vaccination with oil vaccines, at least 70% of the young cattle were expected to be protected. A bi-monthly survey of the adult cattle population showed that yearly vaccination with oil adjuvanted vaccine may produce adequate protection of the population.

The micro neutralization test was put into operation. The standard error of the test and the influence of the dose of virus were determined. It was shown that the results of the test were reproducible under routine test conditions. Also, several changes in the plaque assay system were made. Gum overlay was being introduced instead of agar. Several locally available vegetable gums were tested. Karaia gum was selected for general use as being readily available at low cost. The system allows for large numbers of titrations and plaque reduction neutralization tests.

The relationship was determined between mouse protection test results (MPI) and the protection of cattle against foot lesions after IDL inoculation. The mean EPP of groups of cattle was shown to be a very satisfactory manner of expressing mouse protection test results.

A. Diagnosis and Reference

There are seven different serotypes of foot-and-mouth disease virus (FMD) which do not afford cross protection. Within these main types there are several subtypes which only afford partial cross protection. Even strains within a given subtype may be different enough antigenically so that vaccines prepared from one of these strains does not protect adequately against the others. Such antigenically different strains are emerging continuously and this great variability of the virus requires a constant typing and subtyping service to alert vaccine producers when such strains appear in the field.

Directives for subtyping and reference were established at the International Symposium on Foot-and-Mouth Disease, Variants and Immunity, held in Lyon, France,in 1967.

The classification of FMD viruses requires standardized methodology to achieve similar and reproducible results that are being interpreted similarly in each diagnostic center in South America. This goal requires maintaining an up-to-date

strain collection, standardization of the techniques used and frequent symposia of technical experts from all the countries.

A complicating factor in prevention or eradication of FMD is the existence of other disease with similar symptoms, such as vesicular stomatitis, vesicular exanthema and swine vesicular disease, making a rapid and accurate differential diagnosis imperative.

Therefore, the diagnostic and reference laboratory carries out the following activities:

1. Assay of specimens forwarded by the countries for the differential diagnosis of vesicular disease.

2. Determination of type and subtype of virus of all positive specimens in order to accurately determine which viruses exist in the field.

3. Serological and immunological classification of any strain which may be epidemiologically significant.

4. Maintenance of an up-to-date strain collection including all broadly immune strains within those classified as important subtypes, adapted to the different antigen production systems.

5. Research, coordination and instruction of diagnosis of vesicular disease throughout the Hemisphere.

6. Reference Center for Americas, working in close coordination with the World Reference Laboratory.

7. Diagnoses and reference work on behalf of the Center's various research projects.

Since its establishment the Center has examined approximately 17,000 vesicular disease specimens from 19 American countries. Nine thousand, nine hundred and fifty-six specimens of foot-and-mouth disease from South American countries were diagnosed between 1952 and 1975. Their annual distribution is shown in Table 1. During the period 1958-1975 the Center identified 20 subtypes of FMD virus and 2 of vesicular stomatitis virus.

Six hundred and sixty-five biological specimens from countries affected by the disease were typed and subtyped during 1975, 227 of these correspond to foot-and-mouth disease cases which occurred in the field (Table 2). Included also were 425 sera from various species, in which the presence of VIA antibodies was studied.

It is anticipated that diagnosis and reference activities will continue to increase in importance during the following years in view of the development of national control programs of the disease. Consolidation of those programs requires a thorough study of the serological and immunological properties of the virus field strains, so that those which differ can be incorporated in the vaccines.

The Center supplies reference sera and viruses to national diagnoses and control laboratories. During 1975 all countries in the affected area received various biological materials for diagnosis, on vaccine research production and control, including guinea pig hyper-immune serum, in sufficient quantities to carry out 500,000 complement-fixation tests. Taking into account the increase in diagnosis activities carried out in the countries, it is estimated that it will become necessary to expand considerably the above amount in forthcoming years.

Studies on 2,131 specimens corresponding to the Center's research work were carried out throughout 1975.

With reference to typing and subtyping of vesicular stomatitis virus, the Center examined, during the year 1975, 291 specimens from Central American countries and Panama, of which 163 were positive. Table 3 contains a resumé of this work.

The Center continues to give priority attention to the activities which are related with the diagnosis of vesicular diseases in countries that are free from foot-and-mouth disease. It can be anticipated that the number of specimens from that area will increase considerably in the near future. UNDP Project RLA/75/045, with the Center as executing agency, was structured to respond to this demand.

The Center also supplies direct advisory services to Member Countries through periodic visits to diagnostic laboratories which are made by the Center's technical staff assigned to that sector.

B. Inactivated vaccines

The control of FMD in South America is largely based on the systematic vaccination of the cattle population. The vaccines are produced from inactivated FMD virus and aluminium hydroxide as adjuvant. Often they are reinforced by the addition of saponin. However, these vaccines induce only a short-lasting immunity requiring repeated vaccinations at 4-month intervals. The objective of the program of the Center is to improve on each of the phases of the vaccine production, to ensure a final product with a higher efficacy and efficiency.

In the near future, the main method of antigen production will be in cell cultures. The program provides for continued research to determine optimal conditions and methods for the growth of cells in monolayer or suspension cultures and for virus production in those systems.

Virus suspensions employed for vaccine preparations contain unwanted cellular proteins, requiring purification of the virus suspension before its use in vaccine formulation. This purification process also allows for better physical determination of the antigenic mass and hopefully will lead to more standardized products. The results obtained with one strain of FMD virus warrant further expansion of work in this area.

Means to stabilize the antigens will be investigated further to prevent loss of immunogenicity during the vaccine formulation process and storage of the vaccine.

Research will continue on methods of inactivation that ensure a safe vaccine, while not damaging the antigen and that are amendable to act upon large volumes of virus suspension in a reasonable amount of time. Excellent progress has been made with the use of binary ethylenimine, and the next step will be the evaluation of its use on a semi-industrial scale.

Problems related to the production of oil vaccines on an industrial scale are being investigated.

The use of commercially available saponin in FMD vaccines has sometimes led to local or generalized reactions. Purification of saponin to reduce the side effects of its use by employing the active fraction only has great practical value.

C. Modified live virus FMD vaccines

The development of modified live virus FMD vaccines has been one of the major efforts of the Center. Even though at the present time this type of vaccine is restricted partly because of limitations established by the beef importing countries, the Center is continuing research to explore its potential use under certain conditions. These studies will help to clarify the basic virus-host relationships in virus infections and to determine the changes which occur in the virus population during the attenuation process. Methods to shorten the relatively long time needed for attenuation and the use of selected clones as vaccine strain are being investigated in Venezuela.

D. Vaccine control

Vaccine control is undoubtedly one of the major problems which administrators of anti-FMD campaigns in South America are facing. In many instances potency testing of FMD vaccines in cattle has proven impractical. Emphasis is placed on a strong long-range research program to develop practical methods to monitor the vaccine production process at all stages, starting with the selection of virus strains and continuing until the finished product is injected into the animal. Research on reproducible test systems in small laboratory animals, such as guinea pigs, will continue, and attempts will made to relate the results of those tests to resistance against the disease under conditions comparable to those encountered with field exposure.

E. Epidemiological studies

The main objective of the studies of virus-animal interaction is to add to the scientific basis of control measures, vaccine development and vaccine potency testing. This project involves determination of portals of entry, establishment of growth curves at sites of virus replication, and studies of the clinical response (fever, development of lesions, viremia patterns, etc.), of the pathologic changes and of systemic and local antibody development, including the characterization of the antibody.

In an outbreak situation the stimulation of defense mechanisms at the portal of entry of the virus will probably

have more effect in limiting the spread of the virus than conventional vaccination alone and may be a valuable adjunct to other measures such as quarantine or slaughter of potentially exposed contact animals. This aspect is particular important at a time when "Protein Salvage" is becoming more and more of a world-wide necessity. The Center has initiated research attempting to stimulate the local defense mechanisms by application of live attenuated FMD virus in the upper respiratory tract.

The section "virus in the population" covers the biological aspects of the epidemiological surveillance programs which are being developed by the Center. The specific objectives are to provide better understanding of transmission, dissemination and reservoirs of the virus and to determine the effects of vaccination and control measures on the spread and persistence of FMD virus.

The role of wildlife in the epidemiology of FMD in South America is, as yet, poorly understood. It is of practical importance to determine if wildlife can be responsible for the spread of FMD or for maintaining the virus during interpidemic periods and whether there are other vectors of FMD virus than those normally incremented. The Center has initiated an investigation to determine if the Capibara (*Hydrochoerus hydrochoeris*) is susceptible to FMDV. The first results have been negative.

Pigs play an important part in the epidemiology of FMD. They are difficult to protect with the current inactivated vaccines. Once a reasonable level of FMD control in the cattle population is reached, FMD in pigs is likely to emerge as an important problem. Experimental oil adjuvanted AEI-inactivated FMD vaccines have been shown to induce excellent levels of neutralizing antibodies in pigs. However, field application of that product, as yet, cannot be recommended due to tissue reactions at the inoculation site and in the regional lymph nodes. The Center is being planned to develop a vaccine with acceptable low levels of undesired side effects.

In cattle, the field application of experimental inactivant oil adjuvanted vaccines has been mainly limited to one farm with approximately 3,000 animals. In the next experimental phase the vaccine must be used under more common field conditions in a larger cattle population at

risk, to study its effect on the epidemiological characteristics of the disease. For this purpose, a project is being prepared for the vaccination of approximately 25,000 cattle with oil adjuvanted vaccines.

F. Bioterio

Although the primary function of the bioterio continues to be to raise animals for laboratory use, it has also become important as a training area for courses on laboratory animal medicine and colony management. During the past two years, 14 veterinarians and 4 technicians have received training here.

The breeding systems used for the production of mice have been completely revised to make them as cost-effective as possible for our particular supply demands. This has allowed a reduction of 20,000 mice in the total colony size and has nearly doubled the number of litters of suckling mice available for laboratory use. Consolidation of the mouse colony has also freed two rooms to be used for guinea pigs instead of expensive construction and remodelling which had been anticipated.

Due to lack of funds for new caging and air conditioning, only minimal improvements have been made in the guinea pig colony. On an average over the past three years there has been a drop in production of about 2/3 during the months of extreme summer heat. This causes a tremendous fluctuation in the number of animals that can be supplied for laboratory use on a monthly basis. The only solution for this will be environmental control by the use of air conditioned rooms.

A small colony of rabbits is maintained at the Center to support various training programs. Improved facilities have been planned for this colony and work on these facilities should begin in the near future.

In order to attain the objectives of the research activities, it is necessary to include within the 1976 and 1977 budgets the international and local staff distributed as follows:

International Staff	1976	1977
Chief Immunology Laboratory	1	1
Chief Virology Laboratory	1	1
Serologists	2	2
Research Officers	3	3
Biochemist	1	1
Specialist in Laboratory Animals Breeding	1	1
Research Assistants	2	2
TOTAL	11	11
Local Staff	115	115

There will be no modifications in the international staff for 1977 in relation to 1976.

Supplies and Equipment

In 1977 there will be a slight decrease in this item, as compared with 1976.

Contractual Services

In 1977 there will be a slight increase in this item in order to maintain the present level of operations.

IV - TRAINING AND INFORMATION

As programs against foot-and-mouth disease in the various countries of South America expand their geographic and population coverage there is a corresponding increase of activities leading inevitably to the engagement of new personnel. This new personnel is nearly always composed of young veterinarians with limited professional experience, having had no chance of developing any specialized skill and who are now beginning to acquire such skill in the course of their service wherein they must often shoulder responsabilities for which they are not yet adequately prepared.

Veterinarians who have been at their service posts for some time must bring their knowledge up to date, acquire manual skills and master new techniques and unify criteria in order to keep abreast of scientific and technological progress, and in certain cases maintain coordination with their colleagues from other countries who discharge similar functions.

On the other hand, the majority of Schools of Veterinary Medicine in Latin American universities do not provide courses on some basic subjects - or if they do - these courses are insufficient and unrelated to foot-and-mouth disease prevention and control. This problem sometimes becomes quite serious in some particular fields, such as immunology, biostatistics, epidemiology, and communications.

Those are the main reasons for which the personnel working in the services concerned with fighting and preventing foot-and-mouth disease in the various countries must be adequately trained.

Undoubtedly, the Center is one of the few institutions that can offer both general and specialized training. The fact that the Center has specialists in various branches (virologists, epidemiologists, immunologists, statisticians, etc.) permits the student to come in contact with these specialists, exchange views, and clarify any doubts; and the student also attends monthly seminars of the professional staff during which the work that is being carried out by all sections is freely discussed, and he can also take part in lectures and technical meetings that are often held.

On the other hand, almost every member of the Center's professional staff is fully versed in the Spanish or Portuguese languages, or both, a circumstance singularly advantageous for specialists from Latin America, as against other institutions in the Hemisphere.

Lastly, emphasis must be placed upon the Center's environmental circumstances with respect to location, equipment, supplies, water, electric power facilities, etc. which are quite similar to those prevailing in the other South American countries. Thus, the training that a professional receives at the Center fits in perfectly with the work that he shall eventually carry out in his own country and environment.

A foot-and-mouth disease program compasses different aspects and different levels, and each require that the action to be developed should also be different. At the central level, planning, evaluation, decision-making and management have the major role, together with data processing and epidemiological surveillance. In recent years it has become imperative that modern scientific and dynamic planning be applied to foot-and-mouth disease campaigns, and the experience gained in the field of human health and other activities show that in addition to saving efforts and resources, planning also permits more adequate evaluation and adjustment of activities.

In regard to laboratory tasks, serologic diagnosis and typing of the viruses, both from outbreak specimens and from strains for the production of vaccines, are paramount. Training in vaccine production and control must be singled out since special attention has been given to this activity in view of the millions of doses which will be required for the campaigns during the coming years. By agreement with the government of Brazil and the Inter-American Development Bank, a laboratory has been built and equipped precisely for the purpose of training professional people in vaccine production and control at the industrial level, applying the most modern and sophisticated techniques. In the 3 courses given in 1973, 1974 and 1975, 20 professionals from 10 countries were trained.

At the field level, the tasks performed are practical or supervisory in character. The Center has a unit specifically in charge of this type of training, which was set up through an agreement with the Federal and State governments, with headquarters in Porto Alegre, Brazil.

In addition, there are other matters which constitute an important part of the foot-and-mouth disease programs, such as epidemiology and statistics, matters in which the Center also offers training opportunities. In regard to statistics, a number of fellows have been trained at the Center or at the statistical services installed, with advice from the Center, in the state of Rio Grande do Sul, Brazil.

The Center carried out its training activities in various ways: through individual training, courses, seminars, training units in specific sectors, field exercises, and information.

A brief explanation of the character of each system, on what was accomplished in 1975 in each field, and projections for 1976 and 1977, follows:

1. Individual training

Through this system, veterinarians and other professionals have an opportunity, besides improving their knowledge, of acquiring a mastery of techniques in the case of laboratory work, performing special duties in research work of interest to their own countries, observing, personally in the field, the organization and development of activities in other countries, etc.

In 1975, 15 professionals from 7 countries of South America profited by this training system, most of them through fellowships.

2. Courses

The object of the courses is to improve the qualifications and broaden or refresh the knowledge of groups of professionals in a given country or state. Sometimes they are organized by the Center itself, with its own personnel and elements; sometimes by agreement with universities or other institutions so as to take advantage of human and physical resources; and occasions also arise for professionals from the Center to be invited to lecture in courses sponsored by other agencies.

Achievements in this field, in 1975, are:

a) A course on production and control of FMD vaccines, 9 months long, with the participation of 7 veterinarians from the following countries: Bolivia (1), Brazil (2), Ecuador (1), Paraguay (1), Peru (1) and Uruguay (1).

b) A course on cell culture lasting for 4 months, in which veterinarians from Brazil (2), Ecuador (1), Paraguay (1) and Peru (1) participated.

c) A course on virus typing and subtyping, lasting for 3 months, with the participation of one fellow from Argentina and four from Brazil.

d) A course on breeding and management of laboratory animals (3 months), with the participation of 6 veterinarians from the following countries: Argentina (1), Brazil (3), Chile (1) and Ecuador (1).

e) Two courses: one on quality control of FMD vaccines and the other on production control of FMD vaccines, each lasting 2 months, and involving 6 Brazilian veterinarians in each course.

f) A course for supervisors of the Agricultural Census for the state of Rio de Janeiro (Brazil), 2 weeks long, in which 19 Brazilian professionals participated.

g) The Statistics Section organized and developed, July 7-25, a theoretical/practical course on data collection for diagnosing animal situations, in which 21 Brazilians and one Bolivian participated.

h) In Salvador (Bahia, Brazil), two training courses for field veterinarians were held, each of one-week duration, with a total of 62 Brazilian veterinarians.

3. Seminars

The seminars organized by the Center are international in character and designed to gather professional working in their countries at a given activity, to discuss their problems and difficulties, besides briefing them in the most recent advances in their particular field.

With the cooperation of the Panamanian Ministry of Agricultural Development, a Seminar on Epidemiological Surveillances of Animal Vesicular Diseases was held in the capital of Panama, March 31 - April 11, for veterinarians working in the prevention services of Mexico, the countries of Central America and Panama. Twenty-one professionals from the following countries took part: Mexico (2), Guatemala (2), Belize (1), El Salvador (2), Honduras (2), Nicaragua (2), Costa Rica (2) and Panama (8).

4. Units for training in specific sectors

a) Training unit for field activities

This unit was created in the middle of 1972 by agreement between the Federal government of Brazil, the state government of Rio Grande do Sul and the Pan American Health Organization. The purpose is to improve and standardize operative procedure on field activities; bring up to date the knowledge of the personnel assigned to those services; develop elements of health education; visit affected farms; follow up the development of programs in pilot areas, etc. The courses last six months, full time.

From the beginning of this course to 1975, more than 300 veterinarians have received training in the above-mentioned activities.

b) Pilot Plant for vaccine production

This plant is the outcome of a joint effort on the part of the Brazilian government, the Inter-American Development Bank and the Pan American Health Organization. Built on the grounds of the Center, it is equipped to produce, on a small scale but with the use of standard manufacturing processes, inactivated vaccines of any of the types now on the market.

In this facility, primarily used for training of personnel, 3 vaccine production courses of 9 months each have been given, in which a total of 20 veterinarians from 10 South American countries have participated; 2 courses on vaccine production control, and 2 on quality control of FMD vaccines with a total of 25 professionals.

5. Technical Assistance Agreement, Brazil/PAHO

After discussions between the Ministry of Agriculture and the Pan American Health Organization, in August 1975 a Technical Assistance Agreement of 2 years duration began operations at the PAFMDC.

In this agreement, the Center assumed the responsibility of providing training to personnel involved in the National FMD Control Program, through courses, seminars and individual training. The disciplines in which personnel will be trained are epidemiology, statistics, planning, communications, serology and diagnostics, cell culture, vaccine production and control, and breeding and management of laboratory animals. Also, several refresher courses for field veterinarians will be given.

6. Publications

The bi-weekly Epidemiological Report continued its regular publication. After overcoming difficulties which had caused suspension of publication of the Center's Boletín for nearly two years, one issue has been edited and published, which covers the year 1974, and carries the Volume Nos. 13-16.

Presently, Issues Nos. 17-18 and 19-20 are in preparation, corresponding to the first and second semesters of 1975, respectively. It is hoped that the Boletín will resume regular publication by mid-1976.

The Technical and Scientific Monograph Series added its fifth volume, entitled "Knowledge of the Epidemiology of Foot-and-Mouth Disease with Particular Reference to South America".

A new series began publication, entitled Teaching Manuals, prepared by professionals at the Center for exclusive use in the courses, and for the fellows who receive individual training. In 1975, 3 issues were published:

No. 1 - Epidemiological Notes (Spanish)
No. 2 - Diagnostics (Portuguese)
No. 3 - Immunology (Portuguese)

Training activities planned for 1976 and 1977 are:

1. Individual training

24 fellowships for professionals from 17 countries totaling 72 man/months each year.

2. Courses

At the Center headquarters the following courses will be given each year:

a) One 9-month course on Production and Control of FMD vaccines.

b) Two 4-month courses on Cell Culture.

c) One 3-month course on Virus Typing and Sub-typing.

d) Two 3-month courses on Laboratory Animal Breeding and Management.

e) One 5-1/2 month course on Epidemiology.

f) One 5-1/2 month course on Statistics.

g) One 6-month course on Communications.

In the FMD Training Unit at Porto Alegre (Brazil), 4 training cycles will be given each year, each one lasting one month.

3. Seminars

In 1976, two seminars will be held, one in Rio de Janeiro (Brazil) with 11 fellowships from 10 countries and the other in Panama with 12 fellowships from several other countries.

4. Information

The bi-weekly EPIDEMIOLOGICAL REPORT and the quarterly BOLETIN will continue as regular and periodic publications. The Technical and Scientific Monograph Series will be expanded, as well as the Procedure Manual Series, the Teaching Manual Series, and the bibliographies which are prepared monthly at the Center's library.

In order to attain these objectives, the following personnel will be needed:

International staff - No modifications in the budget approved for 1975.

Local staff - A draftsman will be added to the staff to prepare maps, graphs and audio-visual aids.

The following table provides details of the staff needed in the section:

International Staff	1976	1977
Chief	1	1
Publications technician	1	1
Translator	1	1
Local Staff		
Librarian	1	1
Secretaries	2	2
Draftsman	1	1
Reproductions equipment technician	1	1
Clerks	2	2
Reproductions clerks	2	2
TOTAL	12	12

V - FIELD ADVISORY SERVICES

A. Foot-and-mouth disease free area

Mexico, the Central American countries and Panama represent the highest risk sector in the prevention of foot-and-mouth disease, mainly because of territorial contiguity with the infected area and the complication created by the existence of endemic vesicular stomatitis in all these countries. Progress in the construction of the Pan American Highway, in the section linking Panama and Colombia, and the colonization of the lands crossed by the highway, substantially increase the risk involved.

The countries of the area have organized their defense against the problem, and set up OIRSA (International Regional Animal Health Organization), one of the main functions of which is foot-and-mouth disease prevention. The agency's action is concentrated in the development of national services for health control of agricultural and livestock imports.

Aiming at collective security, the United States of America has agreements on the prevention of foot-and-mouth disease with everyone of those countries except Guatemala. These agreements are being implemented through the establishment of epidemiological surveillance services, charged with identifying occurrences of vesicular diseases. For strategic reasons, the largest amount of resources is applied in Panama, chiefly in the Eastern section of the province of Darien neighboring with Colombia. This latter country, in turn, has an agreement with the United States on the control of disease in the Northwestern section of the bordering Department of Chocó.

The Pan American Health Organization (PAHO), through its specialized agency, which is the Pan American Foot-and-Mouth Disease Center (PAFMDC), executes a policy which takes into account all such elements and endeavors to shape foot-and-mouth disease prevention within a framework of common principles, objectives, strategy and activities.

In order to achieve this goal, it relies upon the specialized resources at the headquarters, in Rio de Janeiro, and upon advisors assigned to Zones I and II, with whom the advisors on Veterinary Public Health of said Zones and of

Zone III work in collaboration. Requests for activities relating to diagnosis, statistics, information systems, planning and training in general are increasing.

The only countries in the disease free zone which possess laboratories for identifying the causative agents of animal vesicular diseases are: Canada, the United States of America and Mexico, which, for safety reasons, only take care of their own needs. For all others, this service is supplied by the Diagnosis and Reference Laboratory of the PAFMDC. This activity has been significantly on the increase in recent years, as a consequence of the evolution of epidemiological surveillance programs in Central America and Panama as illustrated in Table 5. The vital interest of those countries in the need for consolidating those programs suggests that the trend will continue. In accord with Resolution XVII of RICAZ-8, the Pan American Health Organization carried out a study to establish in Panama a Regional Laboratory for the Diagnosis of Vesicular Diseases, to serve Panama and Central America. The United Nations Development Program approved the financing of this project, RLA/75/045, for 4 years, in which the Center will be the executing agency. Work was just begun in January and it is estimated that the diagnostic activity will begin in the middle of this year. Thus, a more efficient service will be provided to the countries of the region.

Surveillance of vesicular stomatitis is essential to the prevention of foot-and-mouth disease. It is based on an information system which continually records vesicular cases. In April 1975, the Center's Seminar was held in Panama; one of the results of this meeting was the development of a subproject studying vesicular stomatitis in Mexico, Central America and Panama, in order to characterize the disease for its control and to support the prevention of FMD. The study document provides the countries with a guide for the correct application of such measures.

All of the countries have adopted the Plan of Action to eradicate outbreaks of FMD developed by the Pan American Foot-and-Mouth Disease Center. A new edition was distributed in 1975, which details the prescribed activities to be followed in order to prevent the introduction of the disease and eradicate it in the case of its appearance. These activities need to be incorporated into preventive programs, according to modern planning methodology. The Center is promoting activities to that end so that, the countries free

of the disease will begin with their prevention programs, a planning process similar to that used for FMD control in affected areas.

Project RLA/75/045 of the United Nations Development Program provides the basis for the promotion and support of all these activities.

B. Countries in the affected area

The Center has obtained the participation in the continental fight against FMD of all the South American countries affected by the disease. All of them are carrying out national programs, except Bolivia, which is now in the process of soliciting the required financial aid from the Inter-American Development Bank. Coverage is complete in Argentina, Chile, Uruguay and Venezuela, and partial in the other countries. With these programs, approximately 150 million cattle are registered, of a total population estimated at 210 million.

In 1975 FMD remained within the currently affected area, showing a global tendency to diminish. The most favorable situation is found in Chile, where no disease has been registered since September 1974.

Paraguay and Uruguay showed a low incidence of the disease, although the latter showed on some occasions potentially dangerous increases, which were fortunately reduced in each case.

From among the other countries, a generally endemic panorama may be noted, with some localized epidemics of no major importance.

The results observed in Chile open a heartening perspective for the continent. But, it must be noted that the correction of numerous problems and intense, sustained and coordinated action is needed to extend Chile's example to other countries. In this sense, the Center has enormous responsability. Its main supervision in 1975, by country or groups of countries, was as follows:

ARGENTINA: Evaluation of the first year of the Henderson Pilot Plan with positive results; study for including oil-adjuvant vaccine in this plan; and exchange of information and experiences on the survival of FMD virus in milk and milk products.

BOLIVIA: Cooperation with Project BOL/73/012, of the United Nations Development Program, executed by the Food and Agricultural Organization of the United Nations. This project is oriented toward pilot areas of animal health in Cochabamba and Santa Cruz de la Sierra, preparatory to the National Plan on FMD, Rabies and Brucellosis, which is being developed with the Inter-American Development Bank. The respective situation diagnoses and an epidemiological study of FMD in sheep in the valley of Cochabamba were carried out.

BRAZIL: Inclusion of the states of Goiás, Mato Grosso, Rio de Janeiro and Sergipe into the National FMD Prevention Plan; supervision of planning, execution and analysis of the situation diagnosis for the National Animal Health Program (PRONASA), and implementation of the Technical Assistance Agreement between the Pan American Health Organization and the Brazilian Ministry of Agriculture for the training of personnel from the National FMD Prevention Program.

COLOMBIA: Feasibility study for extending the area of the ICA-USDA agreement for the prevention and control of FMD in the border with Panama; development of methodology for the quality control of FMD vaccine produced in the country; and discussion concerning a national FMD research program.

CHILE: Orientation of FMD control activities toward a policy of prevention, and reformulation of the Project for a Decade Plan of Animal Health, including FMD, brucellosis and a central virology laboratory.

ECUADOR: Serological and immunological study of a strain of FMD virus type A, which caused an epidemic in the northern region; review of the production and quality control methods of the FMD vaccine produced in the country, and development of an information system and a communications and education program.

PARAGUAY: Development of a document for the second 4-year stage of the National Plan for the Control of FMD and of an agreement to prepare a National Animal Health Project, to be carried out in the first semester of 1976.

PERU: Advisory services for the administrative-technical organization of the FMD Control Program, which became a Special Project of the Ministry of Food; also, training of human resources.

URUGUAY: Discussion of a common FMD research program, with special reference to oil adjuvant vaccines.

VENEZUELA: Cooperation to formulate a 10-year Animal Health Project, beginning with a situation diagnosis; extention of the vesicular disease information system, and development of a research program on modified live FMD virus.

The outstanding activities in terms of coordination of FMD control among neighboring countries were:

BRAZIL AND PARAGUAY: Evaluation and consolidation of the first year of the epidemiological surveillance project in the border region comprised of the Paraguayan departments of Alto Paraná, Canendiyú and Caaguazú and the neighboring towns of the Brazilian state of Paraná.

BRAZIL AND URUGUAY: Formulation of the bases for a frontier agreement on animal health, with priority given to the control of FMD.

BRAZIL, GUYANA AND VENEZUELA: Implementation of the epidemiological surveillance system in the border region of the three countries, and the execution of a livestock census and a survey for the diagnosis of animal health in the Brazilian territory of Roraima.

COLOMBIA, ECUADOR, PAHO: Study to extend the border agreement for FMD control to the general field of animal health. Study to extend to the general field of animal health the border agreement for FMD control existing among these three entities in 1964, and the reformulation of the epidemiological information system dating from the same agreement.

ECUADOR AND PERU: Planning of a border program to coordinate the control of FMD and preparation of a draft to establish an agreement between these two countries to support the carrying out of such a program.

The agreements from 1968 by Argentina with Paraguay and Chile remain inactive.

All this process of planning, implementation and evaluation imposes an increasingly heavy task upon the training and marshalling of human resources and epidemiological research work, as well as technical and administrative tasks, in order to improve program efficiency.

Methodology of planning is a subject which is being taught at the Animal Health Planning Course sponsored by PAHO and given in Buenos Aires, and the principles of which are being tested in the different countries in the activities which have been described.

With respect to implementation, statistical services continue to be one of the main subject-matters. The methodology and organization which have been provided by the PAFMDC have achieved their highest and most efficient expressiveness in Brazil and Paraguay.

To achieve the technical assistance targets, the following staff will be necessary:

International Staff	1976	1977
Chief	1	1
Epidemiologist	1	1
Area Consultants	8	8
Headquarters Consultants		
in Biostatistics	2	2
in Administrative Methods	1	1
in Campaign evaluation	1	1
in Vaccine Production and Control	1	1
TOTAL	15	15
Local Staff		
Administrative Clerk	1	1
Secretaries	1	1
Programmer	1	1
Clerks	3	3
TOTAL	6	6

The following percentages of the Field Advisory Services budget will be assigned to the headquarters and area consultants:

	1976	1977
Headquarters Services	62.5%	58.1%
Area Consultants	37.5%	41.9%

VI - ADMINISTRATIVE SERVICES

There will be no changes in the local staff of the Administrative Services during 1976 and 1977.

VII - COMMON SERVICES

Provision is made for increases for supplies and equipment for 1976 and 1977 to cover price increases in products and equipment and additional maintenance service that will be needed for the laboratories and animal quarters, as well as for the replacement of four vehicles in 1976 and 1977.

VIII - ORGANIZATION OF MEETINGS

There will be no substantial changes in the cost of the meeting of the Technical Council in 1976 and 1977. Funds for the Scientific Advisory Committee have been considered for 1977.

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

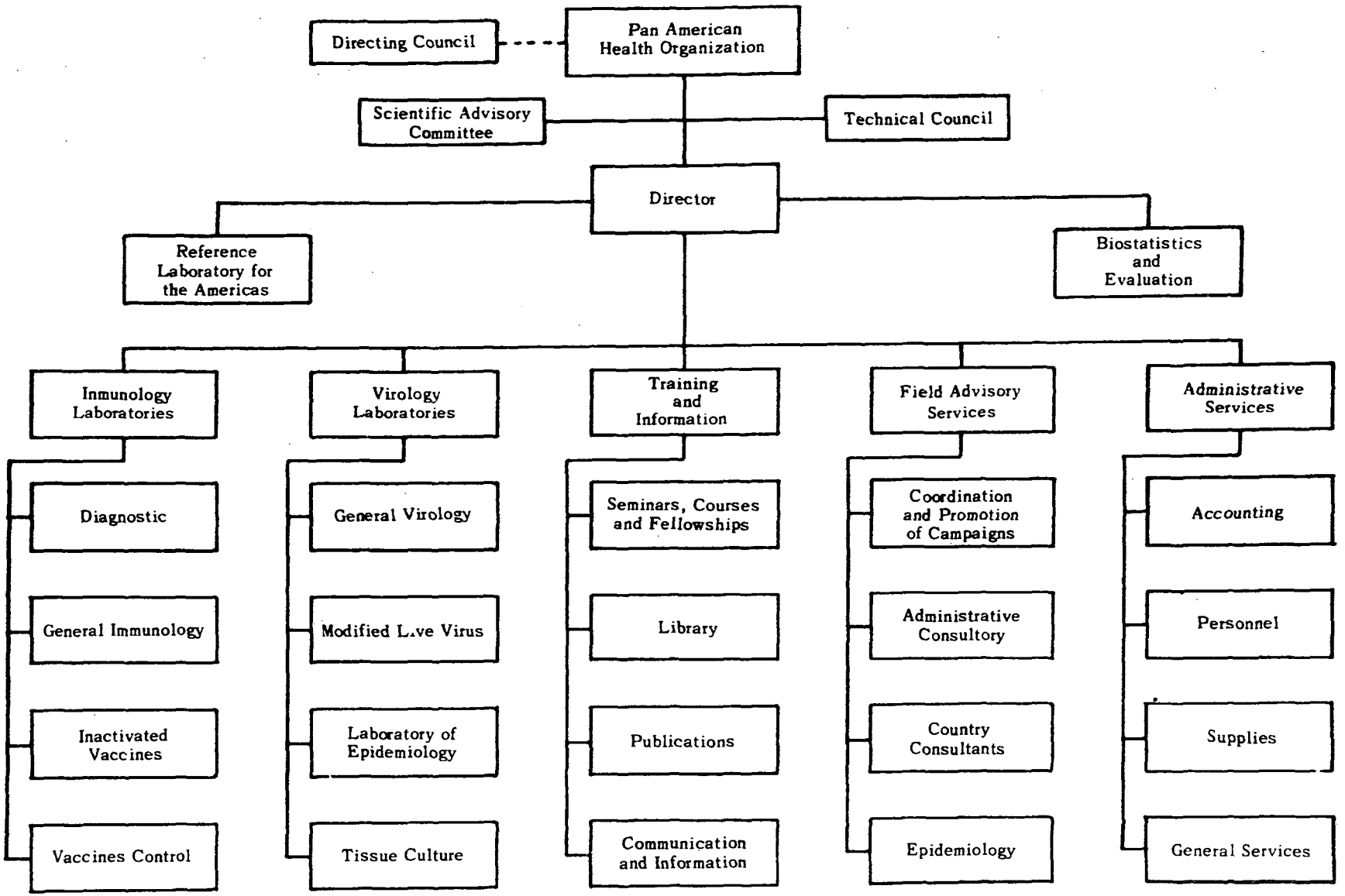


TABLE 1

SAMPLES DIAGNOSED BY THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER, BY COUNTRY AND YEAR

SOUTH AMERICA. 1952 - 1975

Country	1952/55	1956/60	1961/65	1966/70	1971	1972	1973	1974	1975	Total
Argentina	-	46	988	446	81	44	48	-	46	1699
Bolivia	5	5	23	49	1	17	-	3	14	117
Brazil	556	2073	1482	1066	279	441	77	78	73	6125
Chile	-	2	3	31	50	5	3	2	-	96
Colombia	2	68	128	59	11	5	3	-	6	282
Ecuador	21	52	330	70	14	4	-	2	21	514
Guyana	-	-	16	20	-	-	7	-	-	43
Paraguay	52	11	2	387	10	-	2	6	52	522
Peru	5	5	36	68	31	10	-	-	15	170
Uruguay	2	31	98	94	5	7	-	-	-	237
Venezuela	17	26	26	38	36	2	-	6	-	151
Total	660	2319	3132	2328	518	535	140	97	227	9956

TABLE 2

FIELD SAMPLES EXAMINED AT THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER, FROM AMERICAN COUNTRIES AFFECTED BY FOOT-AND-MOUTH DISEASE. 1975.

Country	O_1	A Vallée	A_{24}	A_{27}	C Wald.	C_3	Neg.	Total
Argentina	12	11	5	-	1[b/]	17	-	46
Bolivia	-	-	7	-	7[d/]	-	-	14
Brazil	18	6[a/]	19	-	1	1	28	73
Colombia	1	3[b/]	-	-	-	-	2	6
Ecuador	2	15[b/]	1	-	-	-	3	21
Paraguay	36	1[c/]	4	-	5[b/]	4	2	52
Peru	-	11[b/]	-	4	-	-	-	15
Total	69	47	36	4	14	22	35	227

a/ Three samples pending classification and three with inadequate material

b/ Pending classification

c/ Inadequate material

d/ Six pending classification and one inadequate material

TABLE 3

FIELD SAMPLES EXAMINED AT THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER, FROM AMERICAN COUNTRIES FREE OF FOOT-AND-MOUTH DISEASE. 1975

Country	Vesicular Stomatitis		Neg.	Total
	New Jersey	Indiana[1]		
Belize	2	-	2	4
Costa Rica	12	-	8	20
Curaçao	-	-	1	1
El Salvador	24	-	8	32
Guatemala	8	2	8	18
Honduras	15	4	12	31
Jamaica	-	-	1	1
Nicaragua	79	5	69	153
Panama	10	2	19	31
Total	150	13	128	291

TABLE 4

BIOLOGICAL MATERIALS SUPPLIED BY THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER TO THE COUNTRIES IN 1975

Country	Hyper-immune sera	Hemolysin	VIA	Anti-VIA sera	Virus				Cell Culture (bot.)	Vaccines (doses)	
					Frenkel (ml	BHK (ml)	Rabbit (g)	Epithe. (g)		Mono-valent	Tri-valent
Argentina	9	-	-	-	-	-	-	-	15	-	-
Bolivia	-	-	-	-	200	-	-	-	-	-	-
Brazil	330	3	3	3	1700	3248	72	20	3	-	10200
Chile	-	-	-	-	-	-	-	-	3	-	-
Colombia	27	-	-	-	-	-	-	-	-	9024	-
Ecuador	39	-	-	-	1200	-	-	2	-	-	-
Italia[a/]	15	-	-	-	-	1500	-	-	-	-	-
Paraguay	75	-	-	-	800	120	-	-	-	-	-
Peru	24	-	-	-	-	-	-	-	-	-	-
Uruguay	30	-	3	-	-	3	-	-	3	-	-
Venezuela	15	-	-	-	-	-	-	-	-	-	-
T o t a l	564	3	6	3	3900	4871	72	22	24	9024	10200

a/ Vesicular Stomatitis: the antigen was inactivated with binary ethylenimine (BEI)

TABLE 5

VESICULAR SAMPLES FROM CENTRAL AMERICA AND PANAMA EXAMINED AT THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER. 1966 - 1975

Country	Y E A R S									
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Belize	-	-	2	-	-	-	2	5	2	4
Costa Rica	8	3	7	4	4	29	39	18	11	20
El Salvador	12	1	13	9	8	6	10	24	34	32
Guatemala	2	3	1	1	2	19	33	18	3	18
Honduras	2	3	60	11	8	22	19	14	33	31
Nicaragua	5	3	8	6	4	88	15	24	138	153
Panama	36	76	9	8	7	4	3	1	24	31
T o t a l	65	89	100	39	33	169	121	104	245	289

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

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

1976 - 1977

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	%
1976	540,169	24.0	623,445	27.7	371,366	16.5	636,949	28.3	78,775	3.5	2,250,704	100.0
1977	594,186	24.0	685,790	27.7	408,503	16.6	700,644	28.3	86,652	3.5	2,475,775	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, fellowship, national and international courses, short-term consultants, supplies and equipment, and publications) and the costs of personnel, supplies and other administrative costs for other departments involved in training.

(d) Includes the costs 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.

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1976

REGULAR BUDGET	Office of Director	Research Activities	Training Activities	Field Advisory Services	Administrat. Services	Common Services	Organizat. Meetings	Total	% of Tota
Personal Services and Allowances	115,295	993,090	112,790	459,970	107,358	-	-	1,788,503	79.
Duty Travel	10,480	24,998	5,307	60,965	-	-	22,000	123,750	5.
Fellowship	-	-	64,716	-	-	-	-	64,716	2.
Short-Term Consultant	-	-	6,000	-	-	-	3,000	9,000	0.
Supplies and Equipment	-	101,365	13,130	1,900	4,530	50,000	-	170,925	7.(
Contractual Services	-	8,110	11,140	-	1,900	59,230	9,000	89,380	3.
Publications	-	-	4,430	-	-	-	-	4,430	0.
Total	125,775	1,127,563	217,513	522,835	113,788	109,230	34,000	2,250,704	
% of Total	5.6	50.1	9.7	23.2	5.1	4.8	1.5		100.(

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1976

Office of the Director		**125,775**
Salaries and allowances		115,295
Professional staff (2)		
Director, P.6		
Administrative Officer, P.4		
Local Staff (3)		
Duty travel		10,480
Research activities		**1,127,563**
Salaries and allowances		993,090
Professional staff (11)		
Chief of Immunology Laboratory, P.5		
Chief of Virology Laboratory, P.5		
Serologist, P.4		
Research Officer, P.4		
Biochemist, P.4		
Small Animal Breeding Specialist, P.4		
Serologist, P.4		
Research Officer, P.4		
Research Officer, P.4		
Technical Officer, P.1		
Technical Officer, P.1		
Local Staff (115)		
Duty travel		24,998
Supplies and equipment		101,365
Supplies	89,865	
Equipment	11,500	
Contractual services		8,110

1976 BUDGET (continued)

Training activities				217,513
Salaries and allowances				112,790
Professional staff (3)				
Chief of training activities, P.4 Technical translator, P.2 Technical publications officer, P.2				
Local staff (9)				
Duty travel				5,307
Short-term consultants				6,000
Fellowships				64,716
		Period	Stipends	Travel
Residents		72 months	21,600	12,000
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(1), Peru (2), Uruguay (1), Venezuela (2), United States of America(1)				
Seminars				
In Rio de Janeiro		21 days	6,930	3,600
11 fellows from: Argentina Bolivia, Brazil (2), Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela				

1976 BUDGET (continued)

	Period	Stipends	Travel	
Seminar in Rio de Janeiro, Brazil	21 days	6,930	3,600	
11 fellows from: Argentina (2), Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela				
Seminar in Panama	21 days	7,056	3,000	
11 fellows from: Costa Rica Cuba, Dominican Republic, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Surinam				
Publications				4,430
Supplies and Equipment				13,130
Supplies		11,130		
Equipment		2,000		
Contractual services				11,140
Advisory Services				**522,835**
Salaries and allowances				459,970
Professional staff (15)				
Chief of field services, P.5 Veterinarian, P.4 8 country consultants, P.4 Biostatistician, P.4 Vaccine consultant, P.4 Statistician, P.4 Administrative consultant, P.4 Campaign Evaluation consultant, P.4				
Local staff (6)				

1976 BUDGET (continued)

Duty travel		60,965
Supplies and equipment		1,900
Supplies	1,900	
Administrative services		113,788
Salaries and allowances		107,358
Local staff (10)		
Supplies and equipment		4,530
Supplies	2,530	
Equipment	2,000	
Contractual services		1,900
Common services		109,230
Supplies and equipment		50,000
Supplies	30,000	
Equipment	20,000	
Contractual services		59,230
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		2,250,704

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1976 - BUDGET

RESEARCH ACTIVITIES

	Diagnosis and Reference	Inactivated Vaccine	Modified live virus vaccine	Epidem. Studies	General Investigat.	Total	% of Total
Personal Services and Allowances							
International Staff	50,534	50,555	58,318	23,875	25,968	209,250	18.6
Local Staff	137,172	234,290	167,663	125,571	119,144	783,840	69.5
Duty Travel	3,850	5,757	8,624	3,742	3,025	24,998	2.2
Supplies and Equipment	11,930	55,264	16,026	6,893	11,252	101,365	9.0
Contractual Services	1,622	1,622	1,622	1,622	1,622	8,110	0.7
Total	205,108	347,488	252,253	161,703	161,011	1,127,563	
% of Total	18.2	30.8	22.4	14.4	14.2		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1976 - BUDGET

FIELD ADVISORY SERVICES

	Regional Advisers	Advisers at Headquarters	Total	% of Total
Personal Services and Allowances				
International Staff	174,380	222,630	397,010	75.9
Local Staff	-	62,960	62,960	12.0
Duty Travel	21,504	39,461	60,965	11,7
Supplies and Equipment	-	1,900	1,900	0.4
Total	195,884	326,951	522,835	
% of Total	37.5	62.5		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1977

REGULAR BUDGET	Office of Director	Research Activities	Training Activities	Field Advisory Services	Administrat. Services	Common Services	Organizat. Meetings	Total	% of Total
Personal Services and Allowances	121,690	1,118,235	159,640	507,035	117,440	-	-	2,024,040	81.8
Duty Travel	10,480	25,029	5,307	60,965	-	-	37,500	139,281	5.6
Fellowship	-	-	51,682	-	-	-	-	51,682	2.1
Short-Term Consultant	-	-	7,000	-	-	-	3,500	10,500	0.4
Supplies and Equipment	-	95,547	9,680	1,650	2,200	46,000	-	155,077	6.2
Contractual Services	-	8,880	12,260	500	2,090	57,915	9,000	90,645	3.7
Publications	-	-	4,550	-	-	-	-	4,550	0.2
Total	132,170	1,247,691	250,119	570,150	121,730	103,915	50,000	2,475,775	
% of Total	5.3	50.4	10.1	23.0	5.0	4.2	2.0		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1977

Office of the Director		132,170
Salaries and allowances		121,690
Professional Staff (2)		
Director, P.6		
Administrative Officer, P.4		
Local Staff (3)		
Duty travel		10,480
Research activities		1,247,691
Salaries and allowances		1,118,235
Professional Staff (11)		
Chief of Immunology Laboratory, P.5		
Chief of Virology Laboratory, P.5		
Serologist, P.4		
Research Officer, P.4		
Biochemist, P.4		
Small Animal Breeding Specialist, P.4		
Research Officer, P.4		
Research Officer, P.4		
Serologist, P.4		
Technical Officer, P.1		
Technical Officer, P.1		
Local Staff (115)		
Duty travel		25,029
Supplies and equipment		95,547
Supplies	85,547	
Equipment	10,000	
Contractual services		8,880

1977 BUDGET (continued)

Training activities				**250,119**
Salaries and allowances				159,640
Professional Staff (3)				
Chief of training activities, P.4 Technical translator, P.2 Technical publications officer, P.2				
Local Staff (9)				
Duty travel				5,307
Short-term consultants				7,000
Fellowships				64,716
		Period	**Stipends**	**Travel**
Residents		72 months	20,422	12,000
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				
In Rio de Janeiro, Brazil		21 days	6,930	3,600
11 fellows from: Argentina (1), Brazil (2), Paraguay (1), Bolivia (1), Ecuador (1), Colombia (1), Venezuela (1), Peru (1), Chile (1), Uruguay (1)				

1977 BUDGET (continued)

	Period	Stipends	Travel	
Seminar in Guatemala	21 days	6,048	2,682	
12 fellows from: Nicaragua Guatemala, Panama, El Salvador, Honduras, Costa Rica, Cuba, Haiti, Dominican Republic, Jamaica, Guyana, Surinam				
Publications				4,550
Supplies and equipment				9,680
Supplies		9,680		
Contractual services				12,260
Advisory services				570,150
Salaries and allowances				507,035
Professional Staff (15)				
Chief of field services, P.5 Veterinarian, P.4 8 Country consultants, P.4 Administrative consultant, P.4 Biostatistician, P.4 Vaccine consultant, P.4 Statistician, P.4 Campaing Evaluation consultant, P.4				
Local Staff (6)				
Duty travel				60,965
Supplies and equipment				1,650
Supplies		1,650		
Contractual services				500

1977 BUDGET (continued)

Administrative Services		121,730
Salaries and allowances		117,440
Local Staff (10)		
Supplies and equipment		2,200
Supplies	2,200	
Contractual services		2,090
Common Services		103,915
Supplies and equipment		46,000
Supplies	26,000	
Equipment	20,000	
Contractual services		57,915
Meetings		50,000
Technical Council Meeting		34,000
Duty travel	11,500	
Per diem	10,000	
Short-term consultants	3,500	
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		2,475,775

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1977 - BUDGET

RESEARCH ACTIVITIES

	Diagnosis and Reference	Inactivated Vaccines	Modified live virus vaccine	Epidem. Studies	General Investigat.	Total	% of Total
Personal Services and Allowances							
International Staff	61,243	61,269	70,677	28,935	31,471	253,595	20.3
Local Staff	151,312	258,441	184,947	138,515	131,425	864,640	60.3
Duty travel	3,854	5,764	8,635	3,747	3,029	25,029	2.0
Supplies and equipment	11,246	52,092	15,106	6,497	10,606	95,547	7.7
Contractual services	1,776	1,776	1,776	1,776	1,776	8,880	0.7
Total	229,431	379,342	281,141	179,470	178,307	1,247,691	
% of Total	18.4	30.4	22.5	14.4	14.3		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1977 - BUDGET

FIELD ADVISORY SERVICES

	Regional Advisers	Advisers at Headquarters	Total	% of Total
Personal Services and Allowances				
International Staff	217,635	230,045	447,680	78.5
Local Staff	-	59,355	59,355	10.4
Duty travel	21,504	39,461	60,965	10.7
Supplies and equipment	-	1,650	1,650	0.3
Contractual services	-	500	500	0.1
Total	239,139	331,011	570,150	
% of Total	41.9	58.1		100.0

PROPORTION OF CONTRIBUTIONS OF MEMBER GOVERNMENTS OF PAHO FOR THE FINANCING OF THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

Country	%	Provisional 1977 $
Argentina	7.40	170,219
Barbados	0.08	1,840
Bolivia	0.19	4,371
Brazil	7.40	170,219
Chile	1.35	31,053
Colombia	1.54	35,423
Costa Rica	0.19	4,371
Cuba	1.06	24,382
Dominican Republic	0.19	4,371
Ecuador	0.19	4,371
El Salvador	0.19	4,371
Guatemala	0.29	6,671
Haiti	0.19	4,371
Honduras	0.19	4,371
Jamaica	0.19	4,371
Mexico	8.27	190,231
Nicaragua	0.19	4,371
Panama	0.19	4,371
Paraguay	0.19	4,371
Peru	0.67	15,412
Trinidad and Tobago	0.19	4,371
United States of America	66.00	1,518,174
Uruguay	0.58	13,342
Venezuela	3.08	70,847
	100.00	2,300,265
Other Member and Participating Governments		
Bahamas	0.06	1,379
Canada	6.81	156,647
France	0.19	4,371
Guyana	0.19	4,371
Kingdom of the Netherlands	0.19	4,371
United Kingdom	0.19	4,371
		175,510
TOTAL		2,475,775

PAN AMERICAN HEALTH ORGANIZATION

WORLD HEALTH ORGANIZATION

CE76/17 (Eng.)
ANNEX IV

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

CARACAS, VENEZUELA, 5-8 APRIL 1976

Provisional Agenda Item 6

RICAZ9/7 (Eng.)
27 February 1976
ORIGINAL: ENGLISH-SPANISH

PROGRAM AND BUDGET OF THE PAN AMERICAN ZOONOSES CENTER FOR 1976 AND PROPOSED ESTIMATES FOR 1977

INTRODUCTION

The reasons which prompted the establishment of the Pan American Zoonoses Center, in August 1956, after an initial phase started in 1953, are still valid, and represent now a close correlation with the technical advances and development of animal and public health services in Latin American countries.

During its 20 years of activity, the Center has developed through many distinct stages, each of them showing a close relationship between the work of the Pan American Health Organization and the programs of the countries to improve their technical agencies. Thus, the original number of laboratories was increased in an effort to assess the health conditions of livestock in our countries more effectively. At the time the Center was initiated, there was little constraint to the exposure of livestock to various diseases, many of them of an infectious nature.

It was imperative to mobilize resources of all kinds in order to launch an effective health defense of the livestock industry. The basic need of raising the technical levels and the functions assigned by PAHO to the Pan American Zoonoses Center were harmoniously integrated. This is why it seems fitting to reiterate here the relevant text listing the essential functions assigned to this institution at that first stage of its operation.

"The Center is established to provide the countries of the Americas with technical assistance on problems associated with zoonotic diseases. This assistance will include:

a) Training of technical and paratechnical personnel;
b) Technical advice on zoonoses;
c) Standardization of diagnostic methods and reagents and advice on the techniques for the production of biologicals and/or the control of such products;
d) Evaluation of methods, procedures, and research, applied in the field of zoonoses;
e) Laboratory diagnostic services;
f) Practical demonstrations of appropriate measures for zoonoses control;
g) Preparation and distribution of technical information on zoonotic diseases and their control; and
h) Other related activities."

It seems most appropriate to review these functions to assess the progress with respect to each, in the Region as a whole and in each country. Looking back on the last two decades, it seems undeniable that our nations can claim great achievements, and some aspects merit special consideration in order to analyze how those improvements of livestock conditions were established in Latin America.

An important role in this process was played by improved education in the field of veterinary medicine in our Continent, which was given increased support from a substratum of the basic knowledge absolutely essential for technical advancement. Several disciplines attained remarkable development, which insured the consolidation of significant areas of applied science, the most outstanding being microbiology and the technology of livestock development.

As most laboratories acquired increasing specialization, diagnosis gradually improved and, in turn, these developments eventually led to the improvement of animal health services. For many years, however, diagnosis was concerned exclusively with certain diseases; now we can better appreciate its relevance to livestock research and its future development.

Effective diagnosis is usually associated with the use of standardized high quality biological reagents. While great improvements have been achieved in our countries in this respect, it is however imperative to continue to work toward attaining maximum unification of the techniques applicable in all the nations with due regard to the standards established for the control of biologicals.

Considerable progress has been made in recent years in the field of animal health campaigns. These should be firmly based on efficient diagnosis and on the production and control of adequate quantities of good quality biologicals. These three basic elements - diagnosis, availability of biologicals and animal health campaigns - should be duly integrated so as to insure the attainment of the ambitious sanitary conditions set by the Latin American countries.

As a result of this evident progress, animal health is no longer regarded as something apart from agricultural and livestock development. The economic development plans from every country testify to their concern over the losses arising from disease in domestic animals. From the beginning, the Pan American Zoonoses Center, in contributing to the livestock development in our countries, has acted in accordance with one of the uppermost concerns of PAHO, namely: to alleviate malnutrition in latin America, Indeed malnutrition represents one of the most pressing problems in the public health and welfare of these countries.

The targets set in the field of food and nutrition can only be attained through the application of the technical developments in animal disease control, as previously mentioned.

As we are now halfway through the Ten-Year Health Plan for the Americas approved at the III Special Meeting of Ministers of Health of the Americas, held in Santiago de Chile from 2-9 October 1972, it seems fitting to recall that this document stated that in order to insure the success of foot-and-mouth disease and zoonoses control programs, a wide infrastructure of human resources in animal health

would be necessary. It was further pointed out that most latin American countries lacked adequate resources to attain the specified objectives, particularly in the field of program planning and administration, diagnosis, production and control of biologicals, and reporting.

In order to attain these ambitious continental objectives, every country must contribute towards an increasing interest and participation on a collective international basis.

We are pleased to submit for consideration by this IX Meeting at the Ministerial Level a detailed account of the work carried out by the Pan American Zoonoses Center during 1975. This work has been programmed with particular concern for the attainment of effective and practical achievements within the fundamental framework of the objectives set when the Center was first established.

We have pleasure in submitting the Program and Budget of the Pan American Zoonoses Center for 1976 and the proposed estimates for 1977.

TECHNICAL ASSISTANCE

TECHNICAL ASSISTANCE

During the year, the Center participated actively in animal health projects. In this way, it has provided collaboration with various countries in a wide field of subjects related to the development and progress of general services in animal health.

The Center provided technical assistance to Bolivia in projects concerning brucellosis and bovine rabies; assistance was also provided in the design of the diagnostic laboratory and in biological production.

In Chile, the Center assisted in projects of brucellosis and tuberculosis control and provided training in diagnostic aspects of hydatidosis. A project in hydatidosis control is already underway.

With Paraguay, the Center has continued in the development of a study on brucellosis, tuberculosis and rabies. During this year, these studies were completed and they are now ready to be submitted as supporting documents for external credit to permit a national program against the diseases mentioned earlier. The total sum of these efforts is related to the possibility of strengthening the organization of diagnostic laboratories and the training of staff who will be required to carry out the many tasks associated with these projects. At the same time, the Center has provided specific collaboration in the field of higher learning in veterinary schools through public health seminars.

Brazil is providing substantial support to animal health programs and intends to carry out a program of canine rabies control throughout the country. The Pan American Zoonoses Center continues providing technical assistance for the brucellosis and bovine rabies programs in this country. It continues its participation in the demonstration animal health programs in the State of Rio Grande do Sul. The Center continues the development of an information collecting system in collaboration with animal health services of this same State. This system is designed to include all levels from basic field activities upwards. The Center is examining the results of a serological survey on brucellosis in this state and at the national level.

With regard to Colombia and Guatemala, the Center reviewed various aspects of the program presently underway.

Technical assistance and advice was provided in the preparation of the project for a Regional Biological Production Center for Central America, Mexico and Panama to be presented to United Nations Development Program (UNDP). The executing agency for this activity will be PAHO. The Center assigns great importance to this project which will strengthen control of infectious diseases in animals in the countries of the Region. The Pan American Zoonoses Center will act as a reference and support unit and will collaborate in the development of activities, with emphasis on training and reference aspects.

Technical advisory services were provided to Belize, Colombia and Ecuador in specific aspects of veterinary laboratories, with special reference to diagnostic services and biologics production.

In Peru, an evaluation of caprine brucellosis was made. The Center cooperated in the development of a hydatidosis control program in the Sierra Central. Specific advisory services were provided to Peru regarding diagnostic and preventive aspects of Venezuelan equine encephalitis.

A Technical Assistance Agreement for the Development of an Animal Health Program in Venezuela has been drawn up. The main objective of this agreement is concerned with the coordination of all measures in the field of technical assistance required by the program, including planning, definition of targets for field, laboratory and administrative activities.

It is expected that important studies on the control of vaccines and antigens and laboratory diagnosis will emerge from this program. The Pan American Zoonoses Center will play an important role in the training of professional and technical staff required for the development of program activities.

Technical advisory services were provided to Costa Rica, Ecuador, El Salvador, Honduras, Nicaragua, Panama and Belize in the development of brucellosis control program.

A permanent advisor was assigned by the Center to Maracay, Venezuela, for study and control of equine encephalitis. It is expected that the activity being carried out there will develop into a Regional Arbovirus Center.

A specialist in public health education has been incorporated into the Hydatidosis Control Program in Uruguay. In this same country, the Center has collaborated in the study of losses attributable to ovine hydatidosis. The Immunology Unit of the Center has continued training with Uruguayan staff in the diagnosis of hydatidosis.

With regard to Argentina, technical assistance was provided to Neuquén Pilot Hydatidosis control program. New drugs for the treatment of the disease in dogs were tried. During the year, the control area was extended to Chubut and Tierra del Fuego provinces. The Center cooperated in diagnostic aspects of human hydatidosis, examining sera in 28 hospitals.

Rabies diagnostic services were provided to the municipalities of Moreno and Morón (Buenos Aires). Similarly, brucellosis diagnostic services were provided to various hospitals. Serological sampling procedures were designed for brucellosis in the Province of San Luis. Brucellosis control programs in the Provinces of Santa Fe and Cordoba

were reviewed by the Center. With the cooperation of the National Institute of Agriculture and Livestock Technology, various aspects of tuberculin testing using PPD, were reviewed, and mathematical models applicable to livestock development were designed.

Final work was carried out on the control of brucellosis and tuberculosis in the wet pampas region of Argentina. Studies are now underway on modification of information gathering systems.

Technical advisory services were provided to the National Microbiological Institute "Carlos G. Malbrán"; this related to the reformulation of production and control techniques for vaccines and sera for human use; all of this implies important budgetary investment in the next 3 or 4 years.

The Food Microbiology Unit cooperated with the Argentine authorities in the study of water quality in Buenos Aires and in hospital infections. In collaboration with the National Institute of Industrial Technology, the Unit re-examined various problems associated with the control of meat products and cheese.

The Center was visited by a scientific delegation from Iran. Assistance was provided to the group regarding the establishment of a Zoonoses Center for Middle East. Rev 1 vaccine was provided to Israel to assist in the brucellosis control program.

LABORATORY SERVICES AND PROVISION OF BIOLOGICALS

As indicated above, technical assistance was provided for the establishment and maintenance of laboratories in Argentina, Belize, Bolivia, Ecuador, Mexico and Venezuela. In these activities, the biologics production advisor played an active role. In addition, taking advantage of visits to countries for a variety of other reasons, examinations were made of diagnostic and production laboratories.

Antirabies vaccines from nine countries were submitted for potency testing at the Center.

Reagents, vaccines and sera for a variety of diseases were examined, together with a large number of strains of brucella, leptospiras, mycobacteria, salmonella and other microorganisms.

A total of 4,000 sera were processed during special studies and research carried out in collaboration with countries.

Work continues on improvement of hydatidosis diagnostic techniques especially in hospitals in Argentina. Reagents for immunodiagnostic tests were provided to 24 laboratories in 13 countries: Argentina, Brazil, Colombia, Chile, Spain, U.S.A., United Kingdom, Italy, Kenya, Panama, Peru, Switzerland and Uruguay.

Two antirabies centers of Buenos Aires, Argentina, sent more than 400 brain specimens for rabies confirmation.

As can be seen in the appropriate Table, biological products and reference strains were sent to 18 countries. Details of the services provided can be seen in Tables 1, 2 and 3.

TRAINING SERVICES

Even though, a program of professional training in zoonoses has been underway from the very beginning of the establishment of the Center, it can well be understood that it is essential that new groups of professionals be provided with up-to-date training in the methodology of diagnosis, control of biologicals and disease control program techniques.

During the year 1975, a total of 51 professionals from 14 countries were trained. The majority of these carry out functions in technical laboratories or at field level of the different animal health services in the continent. The subjects studied by these fellows included the major areas of zoonoses. Through this direct type of teaching, improved quality and quantity of trained staff is made available at the diagnostic laboratories in most Latin American countries. Table 3 shows the various training fields studied by the fellows at the Center during this last year. In addition, Table 4 gives details of individual training by countries from 1968 to 1975.

The Pan American Zoonoses Center has not limited its participation to Courses and Seminars, carried out by its staff in various aspects of zoonoses and animal health, but has also been active in the general health field and in veterinary teaching at university level. The Center, in addition has collaborated in other important meetings and congresses and when so requested, has contributed with its staff. Table 5 provides the pertinent details.

COURSE ON PLANNING IN ANIMAL HEALTH

The Pan American Zoonoses Center, in collaboration with the Pan American Foot-and-Mouth Disease Center, has completed this stage of training achievement regarding preparation of professionals in animal health. The fifth such course has recently been completed. The objectives of this type of course are as follows:

Training of veterinarians in planning and administrative techniques applicable to animal health programs.

Training of veterinarians to permit them to contribute to improvement in these planning methods as applicable to health problems in countries in Latin America.

Providing training in concepts of economic and social development and on planning techniques.

Contributing to the improvement of planning techniques and providing administrative elements required in the animal health field.

Providing for better exchange of experiences and information on animal health problems within the context of economic development between countries of Latin America.

Through the development of this course, teams of veterinary officers with special training in planning have emerged. The basic information provided by courses at the Center has favoured the creation of planning units in several countries. It can be appreciated that over 10 countries now have the structure necessary to encourage the formation of planning units within the Animal Health Department. Normally, this is of significant help in the establishment of effective programs of disease control. Diseases in animals, dealt with by a planning methodology should not be circumscribed from the static viewpoint of clinical disease, but should acquire real importance as an important factor in livestock production. We believe that lines of activity guided by this new and dynamic path represent effective perspectives for animal disease control as a function of the strict needs of effective economic development.

TECHNICAL INFORMATION

Technical information represents, perhaps one of the most urgent and indispensable needs for the development of research and technological development in latin America. This acquires vital importance in the animal health field and more especially in all aspects of livestock development. The use and improvement of techniques are based on the receipt and understanding of technical advances derived from basic research. The Center has special concern in providing increased technical information to Latin American countries, and for this purpose, continues to publish an important number of monographs, technical notes, guides and manuals, as well as a broad variety of literature regarding diagnosis, information program, planning and control of livestock diseases. This variety of publications is directed to the animal health services of the Ministries of Agriculture of the various governments, as well as to public health officers. In the same way, these publications reach all universities so that they can be used in the teaching of veterinary medicine.

The Pan American Zoonoses Center continues the publication of the three-monthly Zoonoses Bulletin, the monthly Rabies and Encephalitis Surveillance Bulletins and the annual informative bulletins on Brucellosis, Hydatidosis, Leptospirosis, Food Microbiology and Tuberculosis.

LIBRARY

The Library of the Pan American Zoonoses Center has undergone progressive development and it can now be considered to be a unit with a very high degree of specialization in the field of zoonoses, in the basic biological sciences, of microbiology and in animal disease. There are over 5,500 books, and the Unit received over 500 periodic publications.

The work of this Unit has not remained limited to the specific demands of the staff of the Center. We can provide the assurance that the large majority of fellows who are undertaking continuous training and who come from Latin American countries have at their disposal the vast mass of bibliographic material at the Center. The Unit sends the most complete scientific and technical information to all countries in the Hemisphere, particularly to those sectors concerned with diagnoses and control diseases.

In addition, countries through the respective Ministries of Agriculture and Health required continuing library information services. Similarly, a great number of faculties of medicine, veterinary medicine and basic biological sciences required these services. Photocopies and reprints of published work are sent to research centers, faculties, national institutes, both in Argentina and abroad.

The Library includes a large amount of audiovisual material which is available for institutions who request it particularly for teaching purposes.

We make special emphasis of the services offered by the Center and we urge all agencies to make use of the valuable bibliographical material available at the Center.

BRUCELLOSIS

During this period, activities of the Center in the field of brucellosis continued in technical assistance in accordance with the importance and priorities of the problem and programs which are being developed in the countries of the Region. This technical assistance was aimed in providing support to the various programs of control of animal brucellosis, many of which are at various levels of preparation and development. We wish to make special emphasis on the fact that several countries such as Bolivia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Belize, have prepared loan requests to finance, using external, international credit funds, its programs of human and animal health, many of which include brucellosis control. During the course of this year, the Center has collaborated actively with Ecuador, Honduras, Belize and Paraguay. On the other hand, the Center provided assistance to countries which have programs in operation. Some of these programs have been in operation for some

years and the Center has collaborated with them in specific aspects of biologic production and diagnoses, as is the case of Colombia. In the case of Venezuela this collaboration is expressed in terms of support for diagnosis and research planning in the Veterinary Research Institute of Maracay. In the case of Peru, the Center has assisted in the analysis of the evaluation carried out on the caprine brucellosis program in that country, while in Mexico, the Center has reviewed standards applicable to national brucellosis control program.

Together with the National Services of Animal Health (SENASA), of the Republic of Argentina, the Center assisted in the preparation of a document on a diagnosis of the status of bovine brucellosis.

Work continues on a bovine brucellosis eradication demonstration project in a milk shed area of Argentina. The objectives of this project are to look into the possibility of eradicating bovine brucellosis utilizing livestock management and facilities compatible with this kind of establishment in Argentina, as well as training fellows from the different countries in diagnostic techniques and control or eradication procedures. A further objective is the evaluation of the most appropriate procedures for eradicating the disease at a reduced cost.

Sampling surveys for studying bovine brucellosis prevalence in specific areas of several countries were designed. In this regard, special mention should be made of the collaboration with the Ministry of Health's Division of Livestock Protection in Rio Grande do Sul. In this instance, the survey covered the whole state. The Center also provided assistance in the study of porcine brucellosis in the same state. Similar assistance was provided in carrying out prevalence studies in the eastern region of Paraguay, under the direction of the Ministry of Agriculture.

The preparation and execution of these prevalence surveys have permitted obtaining information which is trustworthy and up-to-date. In many cases, the results obtained contrast markedly with historical data, which, generally speaking, were not representative of the situation.

In addition, the Center during past years has contributed to a better understanding of the prevalence of brucellosis in different regions of south America, through the field studies carried out by fellows attending the various courses in Planning in Animal Health.

Antigens, reagents, strains and reference sera continued to be provided to countries which requested them. Similarly, in support of prevalence studies, the Center provided reagents requested in Argentina, Brazil, Bolivia, Paraguay and Jamaica.

These activities are of great value in standardizing and providing increased confidence to the results of serological examinations, and, in addition, assist in resolving problems of supply and availability of antigens which satisfy standard requirements.

The quantity of 240,000 doses of lyophilized Rev 1 vaccine for the annual caprine vaccination program was supplied by the Center to Peru. In exceptional circumstances the Center provided Rev 1 Brucella melitensis vaccine to Israel which required this biological to permit attainment of the established targets in that country. The Center continued to provide reference services for antigens and vaccines sent by countries.

Training activities are being carried out with considerable emphasis. A total of eight fellows were trained as follows: Argentina (3); Belize (1); Brazil (1); Mexico (1); Nicaragua (1); Peru (1). These were provided with training in production and control of antigens and vaccines, and in diagnosis and control of brucellosis.

The Center participated in the Seminar on Brucellosis and Tuberculosis organized by the Ministry of Agriculture of Rio Grande do Sul held at Porto Alegre, 1-6 December 1975. It also participated at the Seminar on Production of Biologicals held at PRONABIVE in Mexico, August 1975, and at the Seminar on Veterinary Public Health, held in Asunción, Paraguay, 20-23 October 1975.

Volume II of the Informative Bulletin on Brucellosis which contains information available to the Center on activities in the hemisphere during 1974 was published.

IMMUNOLOGY

Reference antigen and antisera for immunodiagnostic techniques for hydatidosis were provided to the laboratories which carry out diagnosis in this disease, and which are located at institutions and universities of the countries. These were as follows: 7 laboratories in Argentina (Azul, Córdoba, Tandil, Mendoza, Neuquén and Buenos Aires), 2 in Brazil (Belo Horizonte, Pelotas), 3 in Chile (Concepción and Santiago), 1 in Panama, 1 in Peru (Lima), 1 in the United States of America (Atlanta), and 1 in Uruguay (Montevideo). In addition, reference reagents were supplied to institutions in Switzerland, Kenya, Italy and Spain.

Assistance was provided to the Government of Peru in immunodiagnostic aspects of the pilot control program begun in the Sierra Central, within the structure of the Agrarian Reform Program. The Center provided sensitized latex particles for use in the latex agglutination test, to the Institute of Tropical Medicine, and to the National University of San Marcos, for the processing of sera collected during a survey carried out to detect carriers of hydatid cysts in the human population residing in the control area.

Lyophilized standard hydatid antigen was provided to the United States National Communicable Disease Center for use in immunodiagnostic tests in man.

Quality control services for immunodiagnosis of hydatidosis were provided by the Center to the Honorary Commission against Hydatidosis, in Montevideo, Uruguay.

During the period of this report, 198 sera from the endemic hydatidosis area of Neuquén, were examined. The examination of these sera, and the assistance provided to the Neuquén group in the carrying out of these techniques formed part of the collaboration of the Center with national and provincial authorities in the program of study and control of hydatidosis in the Neuquén Province.

The Center continued to provide immunodiagnostic services for hydatidosis to hospitals and clinics of Argentina and other countries at their request. These services were provided to 28 Argentinian hospitals. Using immunodiagnostic techniques for hydatidosis, previously standardized during the course of the research program on immunology and immunodiagnostic of the Center, a total of 394 sera from patients from the above hospitals were examined. Immunodiagnostic services were provided to the International Tropical Agriculture Center (CIAT) in Cali, Colombia, and to the Imperial College of Science and Technology, England.

The technical-scientific Monograph No. 7 was distributed. This deals with techniques for immunodiagnosis of human hydatidosis and the material was distributed to laboratories of this Region as well as to Australia, Africa, and Europe on their request.

FOOD MICROBIOLOGY

Food hygiene has as its principal objective the guaranteeing of safety of foodstuffs destined for human consumption. To satisfy this objective, it is necessary to increase measures of food control in all its phases of preparation, transport, and sale. Various international organizations (United Nations Conference on the Human Environment, 1972 World Health Assembly, etc.) have dedicated preferential attention to this problem and have emphasized the need to increase this control, with special reference to the effectiveness and participation of the food microbiological laboratories. Similar recommendations are formulated in the 10 year Health Plan for the Americas.

For the countries of the Region, food hygiene has an additional value since most are food exporting countries, and are thus obliged to certify the purity of food and satisfy the demand for its bacteriological quality by importing countries.

The Pan American Zoonoses Center includes in its activities, collaboration with governments for improvement of food control techniques, particularly with regard to food for internal consumption as well

as export. With this aim, the Center provided assistance in the organization or improvement of food microbiological laboratories and in the development or improvement of programs of food hygiene in the countries. The Center has encouraged and taken part in coordinating surveys at the national level, designed to learn the degree of contamination of foodstuffs in various countries. The results obtained in this activity are very satisfactory.

Concurrent with these activities, the Center has developed an intensive training program in microbiological analysis of foods. Staff trained are professionals responsible for official control in their own countries. In addition, reference material for use in courses and seminars, is prepared at the Center.

RABIES

The Center has continued to provide technical assistance to various countries of the Region, with the main purpose of collaborating in control of rabies in urban areas (canine rabies) and in rural areas (bovine rabies).

During 1975, technical advisory services were provided in the formulation of national animal health programs, which included rabies control. On the other hand, the Center agreed to the extension of the program of the State of Rio Grande do Sul, Brazil, for a further four years, and established with the Ministry of Agriculture of Brazil, the terms by which the Center would assist in the development of a National Reference Laboratory for diagnosis and control of biological reagents.

With regard to programs of canine rabies control, technical assistance was provided to Brazil, Colombia, Honduras, Nicaragua and Peru, where these programs have been most effective. In addition, the Center provided technical advisory services in production and control of vaccines for human as well as animal use, to Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Paraguay, Uruguay and Venezuela. A total of 40 lots of vaccine were submitted to potency tests during this period.

With regard to the program of eradication of rabies in dogs which is being carried out in Chile, visits were made to the rabies diagnostic laboratories of the Bacteriological Institute, where an evaluation was made of the diagnostic and safety procedures used. On the other hand, diagnostic tests were carried out on over 400 samples received from the municipalities of Moron and Moreno in Argentina, cooperating with the control program being carried out in the Province of Buenos Aires.

Coded samples were sent to the diagnostic laboratories of Bolivia, Colombia, Ecuador and Peru. This permitted the identification of laboratories with errors in their techniques, and was instrumental in

the development of a course on diagnostic methods, organized by the Peruvian Association of Centers of Higher Educational in Veterinary Science. This course was directed by staff of this Center. A total of 11 professionals from the Ministries of Health and of Agriculture participated.

With the purpose of standardizing techniques used in rabies diagnosis and in vaccine control, at the request of the Ministry of Agriculture of Brazil, the Center collaborated in the holding of a diagnosis course, and another on production and control of vaccines, at Curitiba. A total of 10 participants from the Ministry and State Agricultural Departments of various states, participated at each of these courses.

Professionals from the Ministries of Agriculture and of Health of Argentina, Brazil, Panama and Uruguay received individual training at the Center in diagnostic methods, production and control of vaccines. This constituted support by the Center to countries in their efforts to control the disease. On the other hand, the provision of biological reagents remained as one of the most important functions of the Center. The reagents distributed included strains, sera and standard vaccines, cell lines and rabies conjugate. In this last instance, the Center distributed sufficient conjugate to carry out the diagnosis of all suspected rabid animals of the Region. This Service was provided to 14 countries of the Region.

TUBERCULOSIS

The objectives of the Tuberculosis Unit in the Pan American Zoonoses Center consists in providing technical assistance to member countries where the need exists to begin or improve programs of tuberculosis control in domestic animals. A further objective is to assist in forming close coordination between tuberculosis control programs in the human and animal fields.

The Tuberculosis Unit continues to fulfill these obligations in various ways:

1. Training of staff. The Center offers training courses in tuberculosis laboratory activities. These include production, standardization and control of tuberculins, diagnosis and typing of mycobacteria. Training is provided in tuberculosis epidemiology and modern techniques of control and eradication design and application of information systems, and planning of tuberculosis eradication programs.

2. Assistance in laboratory reference services. These services include: quality control of tuberculins, vaccines and BCG, diagnosis of tuberculosis in animal tissue samples, typing of mycobacterial cultures. The laboratory also provides reference strains, information on production methods and small amounts of PPD for experimental use.

The Unit developed projects in which training fellows participated, preferentially on subjects of practical application in control programs. One of these refers to the search for an appropriate antiseptic for the conservation of tissue samples, during their transport from the post mortem site to the bacteriological laboratory. As a result of this study, the Center recommends adding a saturated solution of sodium borate to specimens of bovine origin sent to the tuberculosis laboratory. A bacteriological study of nasal exudates taken from cattle in infected herds, was carried out. From 10% of these samples, M. bovis was isolated. This method is thus considered to be a useful method for discovering open cases of tuberculosis which do not respond to the tuberculin test. While it is a relatively long procedure, it is easy to apply in the case of herds in which tuberculosis eradication has been proved difficult through the use of traditional tuberculin testing.

3. Cooperative field projects. The Center continues cooperating with various countries in the carrying out of field experiences, design of field studies, investigation of special problems and supervision in tuberculosis.

Tuberculosis does not manifest itself at first sight as an evident problem, but it does expose human as well as animals to serious health risks, and diminishes livestock production in latin America. The earlier the application of measures to limit the spread of all forms of this disease, the easier will be the eventual task of control and eradication. The Center is ready to assist in control measures, wherever these may be required.

The Center has encouraged the Experimental Station of the Government of Argentina in the development of a trial to study various aspects of the tuberculin test in cattle with natural infection. This study was carried out using avian, human and bovine PPD of the Pan American Zoonoses Center, and avian and human PPD produced by private laboratories. Using these same cattle, caudal tests were carried out utilizing in these tests human PPD produced by the Center and by commercial sectors.

The preliminary analysis of data reaffirms that the area of the neck is more sensible than the caudal area in cattle. Bovine PPD is more sensitive than human PPD for determining infection by bovine tuberculosis. The percentage of false negatives in animals varies greatly in accordance with the type of tuberculin used, the potency of the PPD, the area of the body where the test was made, and the interpretation used. Finally, the data obtained reaffirm the need to carry out potency control tests on commercial tuberculins before they are used in bovine tuberculosis programs.

The results of this study also suggest that the dose of 10,000 units of human PPD is not satisfactory in the caudal fold, when working in infected herds. None of the systems of tuberculin tests used produced positive responses in all the infected animal. This finding reaffirms the need to employ serial tuberculin tests, in infected herds. It is hoped to publish the complete study during 1976.

RESEARCH ACTIVITIES

RESEARCH ACTIVITIES

BRUCELLOSIS

The Brucellosis Unit has pursued its research on the epidemiology, diagnosis, prevention, and control of this disease.

1. Epidemiology

The second comparative study on the susceptibility of goats and rams to Brucella ovis was completed during this period. It was demonstrated that goats become experimentally infected with B. ovis, even though under the conditions these assays were conducted, the infection disappeared shortly in many of the animals.

2. Diagnosis

The Brucellosis Unit pursued its studies on the evaluation of the buffered antigen test (card test) with non-disposable materials. A very simple and low-cost technique is used which produces results similar to those obtained with the commercial card test. This test, characterized by an excellent sensitivity and specificity could be widely applied, particularly as a screening method, in countries which undertake control and/or eradication programs. The development of such projects has made it possible to elaborate the reference antigen currently being distributed to concerned countries, and to train professionals from several nations in the production of antigen.

In collaboration with the Facultad de Medicina de Buenos Aires, the Center has continued its work on a project aimed at evaluating the serological test used in the diagnosis of human brucellosis. The clinical and serological study of over 400 patients from the Muñiz Hospital of Buenos Aires has been carried out to date. Likewise, a seroepidemiological study is being conducted on animals and workers from a meat-packing house in the Buenos Aires area.

The Brucellosis Unit has also pursued its study of the sensitivity and specificity of the different serological tests used for the diagnosis of animal brucellosis. A study on swine was completed which confirmed that agglutination tests (plate and tube) are not sensitive enough to identify a recent infection in swine. An additional finding was that many of these animals show a tendency to decrease their levels of agglutinins in spite of remaining infected. In addition to being highly specific, the complement fixation test proved to be more sensitive, although it did not identify all of the infected sows. These investigations confirm the need to use the criterion of herd diagnosis as well as the limitations of individuals diagnosis as far as this animal species is concerned.

3. Prevention

The research on different aspects of Brucella abortus strain 19 with Brucella melitensis Rev 1 is still being pursued.

A study was completed dealing with the protection afforded by the strain 19 vaccine as compared with that conferred by Brucella abortus strains biotypes 1, 2 and 4, isolated in latin America. When it was found that different biotypes of B. abortus were active in latin America, the question was raised as to whether the 19 strain would afford protection against heterologous biotypes, that is to say, biotypes other than biotype 1. In those assays the protection against the challenge was found to be equivalent in all the vaccinated guinea pigs and highly significant compared with that observed in controls regardless of the challenge strain. Results showed that there is no statistically valid difference in the immunity conferred by the vaccine against the three serotypes.

The Center has carried on its investigations on the factors (vehicles, temperature, humidity, vacuum) that might affect the viability and effectiveness of lyophilized strain 19 and Rev 1 vaccines while in storage. This project will provide information on the conditions which are most favourable for the storage and use of these vaccines, as well as on those factors that are detrimental to their correct storage.

It was demonstrated that the B. melitensis Rev 1 vaccine, prepared and lyophilized under the same conditions as those observed during these trials, may be satisfactorily stored for over two years, provided the vacuum is satisfactory and the temperature is kept constant at 4°C. The viability of the vaccine promptly deteriorates if the vacuum is unsatisfactory and the temperatures are high (22° and 37°C).

The Center pursued work on a project of a potency test model for the strain 19 vaccine in guinea pigs to be used in a survey designed to evaluate the immunogenicity of the vaccines of different origins utilized in the Region.

A comparative survey was completed on one serological response of 3-6 month old calves vaccinated with Brucella melitensis H38 vaccine (inactivated plus oily adjuvant) and the B. abortus strain 19 vaccine. The serological response in agglutinating antibodies was similar in both vaccines but in the complement fixation, mercaptoethanol and card tests, the persistence of reacting titres was significantly higher in the groups vaccinated with the B. melitensis H38 vaccine administered in a single dose. It was further found that the H38 vaccine makes it more difficulty to distinguish post-vaccinal reactions from those due to natural infection.

During this period two additional projects were completed, both dealing with the study of vaccines proposed for the protection of swine against Brucella suis. The Center collaborated with the Instituto Nacional de Tecnología Agropecuaria (INTA) of Argentina in the evaluation of a B. abortus vaccine, attenuated live strain, developed by that Institute several years ago. In these potency tests conducted on guinea pigs and swine, other vaccines were included; among them, an inactivated oily Brucella suis vaccine prepared by the Center. None of the tested vaccines conferred adequate protection on sows against the challenge of a virulent Brucella suis strain.

IMMUNOLOGY

Work carried out at the Center has shown that the immunoelectrophoresis (IEP) test based on the arc 5 positivity criterion may be considered the test of choice for the immunodiagnosis of hydatidosis because of its specificity, since no false positive results have been observed to date. The widespread application of this test, however, is limited by the requirement of a lyophilized hydatid cyst fluid antigen and the use of concentrated sera. The IEP test, as originally described, involved lyophilization and reconstitution of serum samples to one-third of their initial volume, necessitating the availability of lyophilizing equipment in each laboratory performing the test. Such equipment, however, is not within the reach of all hospital laboratories, particularly those with limited resources or in rural areas where hydatidosis is endemic.

This problem could be practically obviated, however, by the production of lyophilized antigen in an appropriately equipped central laboratory near or within the endemic area, which would then distribute the processed antigen to hospital laboratories in the Region. Although such measures could be taken to provide small laboratories with antigen, the difficulty still remains in the requirement for concentrating the serum samples.

In an attempt to overcome these difficulties, the diagnostic efficacy of the IEP test for hydatidosis was examined at the Center using unconcentrated serum, but filling the serum through on three different occasions. The results were compared to those obtained when the test was performed with concentrated serum as originally described. It was found that all those sera which revealed the characteristic arc 5 with the concentrated serum also formed the diagnostic arc when the trough had been filled 3 times with neat serum. The results showed that the IEP test based on the arc 5 criterion of positivity may now be employed using unconcentrated serum for the immunodiagnosis of hydatid disease in laboratories previously unable to perform it for lack of the facilities necessary for the concentration of sera.

The performance of the immunoelectrophoresis (IEP) test normally takes 5 days before the final test result becomes available. Since in some cases, particularly those with acute clinical signs, physicians

are interested in the short-term immunological confirmation of a presumptive diagnosis of hydatidosis, the possibilities of providing them with an earlier IEP test result was contemplated.

Thus, IEP test results obtained in the pre-staining reading of the slide were compared with the readings recorded for the same serum after staining the slides as described in the original technique. It was reasoned that if the sensitivity of the test were not affected by considering the pre-staining reaction as definitive, the IEP test results could then be reported to the physician in 48 hours. The Echinococcus granulosus diagnostic arc 5 was detected by the immunoelectrophoresis test in 84 per cent of sera from patients with a presumptive clinical diagnosis of hydatid disease when stained slides were examined. In 51 per cent of these, however, the arc 5 was readily recognized in the reading following citrate treatment of the slide. In an attempt to provide the clinician with an earlier immunological confirmation of hydatidosis by the IEP test the routine reading of slides after 24 and 48 hours of incubation is recommended.

The definitive reading of the stained slide has the added advantage of detecting a large number of uncharacterized precipitation bands which may be of value in hydatid sera lacking the arc in the post-operatory serological monitoring of hydatid cases.

The crossed-over electrophoresis (COE) test has received in recent years increasing attention for the immunodiagnosis of human hydatidosis, but its relative merits and limitations were inadequately known. Information on the rate of non-specific reactions with sera from persons with other parasitic infections, however, had not been reported.

In view of this, the COE test for hydatidosis was evaluated at the Center with sera from pre-operative, surgically confirmed hydatidosis cases, post-operative hydatidosis patients, healthy donors and persons with other parasitic and non-parasitic diseases. Although the sensitivity of the COE test was higher than that obtained by the immunoelectrophoresis (IEP) test, it was not possible to differentiate hydatid from non-hydatid sera by the former technique. The IEP test based on the detection of the Echinococcus granulosus arc 5 as criterion of positivity was found to be the test of choice for this purpose. No false positive results were obtained in non-hydatid sera. In view of these findings on the non-specificity of the COE test, the latex agglutination test, and possibly the indirect hemagglutination tests, remain the screening techniques of choice for the detection of arc 5 positive sera in field studies on the bases of their good sensitivity, high specificity and excellent correlation with IEP test results.

On the basis of studies carried out at the Center on the standardization of hydatid serology, sera collected in endemic areas of the Province of Neuquén, Argentina, were studied to evaluate the serologic approaches for the detection of hydatidosis cases in field situations.

This study was also part of the Center's collaboration with national and provincial authorities in Argentina's Program of Hydatidosis Study and Control in the Province of Neuquén.

For this purpose 675 sera were examined by the indirect hemagglutination (IHA), latex agglutination (LA) and immunoelectrophoresis (IEP) tests for hydatidosis. The final results showed an excellent correlation between the LA and IEP tests, a finding in agreement with previous observations on clinically-confirmed cases. The results demonstrated that the LA test is the screening technique of choice for use in examining large numbers of sera for the detection of arc 5 positive sera. The use of the arc 5 IEP test positivity criterion as the reference test in such studies is supported by its specificity for hydatidosis since no false positive results have been found to date using this IEP test.

The possibility was then contemplated that an IHA test screening for arc 5 positive sera could perhaps be conducted by selecting only those sera with IHA titers equal or higher to the titer where a minimum non-specificity is obtained in the preliminary trial to determine titers having diagnostic significance for hydatidosis. These observations suggest that the choice IHA test positivity criterion for the screening of arc 5 positive sera is the one based on the highest serum titer where a minimum of non-specificity is obtained. The superiority of the LA test for these purposes, however, was evident in this group of sera.

Studies carried out at the Center have shown that it is possible to maintain hydatid cysts *in vitro* in synthetic culture media. Subsequent implantation of these cysts into laboratory animals allows the determination of their viability. This *in vitro-in vivo* model is presently being employed in the screening of drugs with possible anti-cyst activity. None of the chemotherapeutic agents screened to date however, has shown an effective action adverse to cyst survival. Since no chemotherapeutic agents against the larval stage of *Echinococcus granulosus* in man and domestic animals are presently known, this drug screening program is being continued in an attempt to find an effective compound.

The VII Inter-American Meeting, at the Ministerial Level, on the Control of Foot-and-Mouth Diseases and Other Zoonoses, in its Resolution IX and in point 4 recommends that the Organization intensify its research efforts in other parasitic diseases.

Thus, the Center has begun a program to evaluate, standardize and develop immunological diagnostic techniques for cysticercosis caused by *Taenia solium* (*Cysticercus cellulosae*). In this regard, the Center has begun to form a serum reference bank representative of confirmed cases of this zoonoses. At the same time, the Center has begun analyzing antigens for the different tests which will have to be the subject of later evaluation for immunodiagnostic tests in this disease.

LEPTOSPIROSIS

The Center continued its studies aimed at establishing the prevalence and distribution of serotypes in domestic and wild animals, and at the development of new reliable diagnostic procedures. The most salient features of these projects are described below.

A survey on the prevalence of agglutinins in a random sample of equines in Argentina pointed to a reagent rate of 74,6% for diverse and multiple serotypes. Predominant reactions were for the following serotypes: pomona, Hebdomadis group (hardjo, wolfii, sejroe, hebdomadis), pyrogenes, tarassovi and canicola. Attempts were made at isolating leptospires from kidney tissue, which resulted in the obtention of three strains of Leptospira interrogans, belonging to the hardjo serotype. This is the first isolation of this serotype that we know of, from horses. Owing to the close ecological relationship shared by horses, cattle and man, the latter can play an important role in the epidemiology of infections by this serotype. Twelve saprophytic strains of Leptospira biflexa were isolated from kidneys of horses. One of the strains which reacted with 99,1% of the equine sera examined, when used in an absorption test with equine serum, was found capable of absorbing the antibodies for pathogenic serotypes. These findings suggest that the L. biflexa strain may be responsible for the varied and manifold cross-reaction in agglutination tests with pathogenic serotypes, which are frequently found in equine sera, and may elucidate the pathogenesis of ocular reactions usually associated with equine leptospirosis infections.

Studies conducted on the armadillo Chaetophractus villosus as natural host of leptospire are being continued in an effort to identify for the first time this animal as a likely wild host for infections caused by hardjo serotypes in cattle. During this year, 89 armadillos were captured in cattle ranches. Each of them was serologically tested for agglutinins. Kidney tissues were cultured by means of improved methods.

A serological study was conducted to determine the action exercised on the sensitivity and specificity of leptospiral antigens grown in different culture media. As a result, it was demonstrated that the antigenic sensitivity may diminish in certain cultures and be reestablished in others.

These findings highlight the significance to be ascribed to the culture media used for the production of antigens employed in diagnostic tests of microscopic agglutination, in view of the fact that leptospires are antigenically stable organisms and that anomalous serologic reactions are possibly due to the medium used. Lest the culture medium be taken into account, the serologic titers of our clinics will be debatable.

One Leptospira isolated from a rat (Rattus rattus) from Barbados, and identified as the fort-bragg serotype of the Autumnalis group, had been previously associated with the probable cause of infection in cattle. During this year human sera were received from that country, a high proportion of which were positive to serotype fort-bragg with high titers. Various laboratory tests indicate that this same serotype is very likely to be the primary cause of human leptospirosis in Barbados.

In order to learn the exact distribution and prevalence of the differnet leptospiral serotypes, an agreement has been concluded with the Centro Internacional de Agricultura Tropical (CIAT) in Colombia, and a large number of sera received from this country are being studied at the Center.

FOOD MICROBIOLOGY

In this regard, the Center is chiefly concerned with the standardization of analytic techniques for the microbiological control of food by official laboratories in the countries of the area. Basic to this end is the obtainment of adequate information, which is necessary to prepare on real bases the microbiological criteria to be enforced by control agencies.

On this score, the Center has succeeded in securing very valuable information on soft and semi-hard cheeses. The microbiological criteria or standards that might be recommended in the light of this experimental data are at variance with those that are presently employed in the countries. These studies are still underway, and once hard cheeses have been studied, other dairy products shall be analyzed.

The Center is likewise concerned with the development of sample, quick and economic sampling and analytic techniques that may be easily adopted by the laboratories of the Region. In this connection, a new sampling technique has been described and successfully employed to investigate the presence of Salmonellae in carcasses and working areas, which obviates many of the disadvantages associated with those currently employed.

Another line of the research within the food microbiology Unit has aimed at learning the frequency and distribution of the different serotypes of Salmonellae present in foodstuffs, animals intended for consumption and wild animals. Interesting correlations have been traced which contribute to a better understanding of the cycles of these bacteria.

PATHOLOGY

In addition to the direct technical relationships it maintains routinely with all the other laboratories of the Center, the Pathology Unit has collaborated closely with the Tuberculosis, Brucellosis and

Leptospirosis Units in the histopathological aspects associated with their research projects.

The lines of research pursued by this Unit go beyond the bounds of a particular discipline since it has been concerned with basic studies on laboratory animals, on the one hand, and, on the other, with an in-depth study of normal armadillos (Dasypus hybridus).

We have been able to study a focal hepatic necrosis in guinea pigs. The comparative study of those lesions affords significant new information on the occurrence of this disease in humans. The results of this research will permit the publication of a Manual on the Pathology of Laboratory Animals, which is due to appear in 1976.

Another line of research within this Unit deals with the histology and hematology of apparently normal laboratory animals. The diverse investigations for which laboratory animals are used require this basic knowledge in order to characterize pathological processes, taking place in the course of experiments.

The armadillo (Dasypus hybridus), a valuable experimental model for biomedical research, has recently been used for the study of leprosy. The Pathology Unit, for its part, has completed a comprehensive study on the histology of the normal armadillo and is currently engaged in the preparation of an histological atlas.

The Unit has continued its studies on the pathogenesis of epididymitis caused by Brucella ovis. Apart from its significance for the prevention of this disease in rams, this project will provide valuable information on the immunological aspects of similar diseases in humans and animals, caused by other etiological agents.

RABIES

A study was completed by the Center on the duration of the immunity conferred on cattle by the suckling mouse vaccine supplemented with either aluminium hydroxide or oily adjuvant. It demonstrated that although there was a slightly better response in the animals inoculated with vaccine reinforced with oily adjuvant, both vaccines insured an adequate protection against the challenge two years after immunization. The effectiveness of these vaccines in the field is still to be determined, but this study corroborates, however, the findings of earlier investigations conducted at the Center to the effect that the suckling mouse vaccine supplemented with any of these adjuvants constitutes an excellent antigen for the protection of cattle against rabies.

A cooperative study is also underway under the joint sponsorship of this Center and the Pan American Foot-and-Mouth Disease Center designed to investigate the effect of simultaneous vaccination of cattle against rabies and foot-and-mouth disease. Groups of animals

vaccinated with the rabies ERA vaccine, the foot-and-mouth disease BHK, or simultaneously with both, were serologically controlled against the two antigens, and no difference was observed between the groups vaccinated with the same antigens. As far as rabies is concerned, no conclusive evidence can be assumed until the animals are challenged with infectious virus, but from the serological findings obtained so far, it would appear that there is no interference between the rabies and the foot-and-mouth disease antigen. Therefore, cattle could be vaccinated simultaneously against both these diseases, a cost and time-saving procedure.

The project concerned with the development of an inactivated rabies vaccine for animal use, prepared with BHK cell lines has continued, and most satisfactory results have been obtained. This vaccine has been found to possess an excellent immunogenic value and a high degree of stability. It afforded protection to 100% of the dogs challenged with infectious virus 60 days after vaccination. The serological profile of dogs inoculated with this vaccine for a 3-year study on the duration of immunity is excellent until 9 months after the vaccination. On the other hand, the vaccine mixed with aluminium hydroxide or oily adjuvant has passed most satisfactorily the potency control tests. The production of a rabies vaccine in continuous cell lines would enable the Center to offer to the countries of the Region a simple, inexpensive and quick methodology for vaccine production. This technique would permit substantial production of vaccine and would help to consolidate rabies control in animals.

Another line of research has been aimed at establishing the viricidal action of chemical agents on rabies virus in vaccine in the host country of the Center. It was demonstrated that soap of various qualities, anionic detergents (derived from dodecyl-benzene-sulphonic acid) and cationic detergents (derived from quarternary amonium compounds), lemon juice, vinegar, etc., inactivate at least $10^4 DL_{50}$ of virus/0,03 ml in one minute. As this is precisely the amount of virus found in the saliva of rabid dogs, the information obtained will be most valuable for those who require to treat people bitten by suspected rabid dogs, as well as for those responsible for decontaminating surfaces infected with rabies virus.

An electrosineresis technique has been developed for use in rabies whose sensibility and specificity proved to match those of the standard seroneutralization test when used to determine antibodies in 200 sera from different species. Electrosineresis is an inexpensive and rapid technique which could be used as a screening test when large numbers of sera require to be examined.

TUBERCULOSIS

The Tuberculosis Unit has continued its work in the laboratory and field service area. Batches of mammalian and avian PPD were prepared

and standardized, chemically and biologically, for use as reference materials in the veterinary field by the member nations.

Because human strains are the best producers of PPD, it has become customary to use PPD obtained from M. tuberculosis in prevalence surveys of tuberculosis infection in cattle instead of the homologous PPD of M. bovis. It appears, nevertheless, more reasonable to assume that the homologous tuberculin is preferable to the heterologous PPD for the diagnosis of bovine tuberculosis. So, a first batch of PPD prepared employing a bovine strain was used in experimental and field trials at the Pan American Zoonoses Center, and it is now ready for use by the member nations for similar studies.

Quality control of liquid and freeze-dried BCG vaccines prepared in laboratories of the member nations was continued. The following tests for BCG quality are now carried out at the Center: identity, sterility, absence of virulent mycobacteria, skin reactivity in guinea pigs, number of culturable particles, opacity, germination, and oxygen consumption.

Tuberculins and PPD's produced by the member nations were submitted to a reference control at the Center.

Quality control of tuberculins for human and veterinary use, is available at the Center. The biological potency, the protein and phenol content, and the sterility are evaluated.

TABLE 1

LABORATORY ASSISTANCE TO THE COUNTRIES

Countries	Quality control of biologicals				Strains received for typing					Sera Received			
	Rabies vaccine	BCG vaccine	Bruc. vacc.	Bruc. antigen	Bruc.	Lept.	Mycob.	Salmonella & others	Cysti-cercosis	Bruc.	Lept.	Rab.	Hydat.
Argentina	x	x					x			x		x	x
Barbados											x		
Bolivia	x			x									
Brazil	x					x	x				x	x	x
Colombia			x	x	x	x			x		x		x
Curacao										x	x		
Chile	x	x											x
Ecuador	x		x	x							x		x
El Salvador													x
Jamaica							x						x
Mexico					x								
Nicaragua													x
Panama													x
Paraguay	x												
Peru									x				x
Dominican Republic			x	x									
Venezuela	x		x	x	x						x		
Uruguay	x	x											x

TABLE 2

REFERENCE BIOLOGICALS SENT TO THE COUNTRIES

Countries	BRUCELLOSIS			LEPTOSPIROSIS		RABIES		TUBERCULOSIS	Enterobact. Mycobact. Anthrax and	HYDATIDOSIS
	Antigen	Strains	Sera	Strains	Sera	Conjug.	Vaccines, strains & sera	Ref. tuberculin	other strains	Antigen
Argentina	x			x		x	x	x	x	x
Barbados	x		x	x					x	
Belize										
Bolivia	x					x	x	x		
Brazil	x	x	x	x		x	x	x	x	x
Chile	x	x		x		x	x			x
Colombia	x	x		x			x	x	x	
Cuba		x	x							
Ecuador	x	x	x	x	x	x	x	x	x	
El Salvador	x									x
United States										
Guatemala	x					x				
Guyana	x									
Haiti	x									
Honduras						x	x			
Jamaica	x			x	x					
Mexico	x									
Nicaragua						x				
Panama	x									x
Paraguay	x									
Peru	x	x	x			x	x		x	x
Dom. Republic	x	x	x			x	x	x	x	
Surinam				x	x	x				
Trinidad/Tobago								x	x	
Uruguay	x	x		x	x	x	x	x		x
Venezuela	x	x	x	x		x	x		x	
Europe and others			x						x	

TABLE 3

SUBJECTS STUDIED, FELLOWS CEPANZO
1975 *

SUBJECT / COUNTRIES	Tb.	Hydatidosis Immunology	Bruc.	Lepto.	Rabies, diag. of rabies	Food Microb.	Pathol.	clean. preparat. lab. mat.	Planning in Animal Health	Total
Argentina	1	2	3	1	3	2	1	-	1	14
Belize	-	-	1	1	-	-	-	-	-	2
Bolivia	-	-	-	-	1	-	-	-	-	1
Brazil	-	-	1	-	1	2	-	-	7	11
Chile	-	1	-	1	-	-	-	-	1	3
Colombia	-	-	-	1	-	1	-	-	-	2
Dom. Republic	-	-	-	-	-	-	-	-	1	1
Ecuador	-	-	-	-	-	-	-	-	1	1
Guatemala	-	-	-	-	-	1	-	-	-	1
Mexico	2	-	2	1	1	-	-	-	1	7
Nicaragua	-	-	1	-	-	-	-	-	1	2
Panama	-	-	-	-	1	-	-	-	-	1
Uruguay	-	2	-	-	-	-	-	-	1	3
Venezuela	1	-	-	1	-	-	-	1	1	4
TOTAL	4	5	9	6	7	6	1	1	15	54*

* Subjects studied by 51 fellows.

TABLE 4

INDIVIDUAL TRAINING OF FELLOWS, BY COUNTRY, 1968-1975

COUNTRY	Y E A R S								TOTAL
	1968	1969	1970	1971	1972	1973	1974	1975	
South America									
Argentina	2	6	19	18	10	9	12	14	90
Bolivia	-	1	2	1	-	1	1	1	7
Brazil	2	4	4	4	8	1	3	4	30
Chile	-	1	-	2	1	-	3	2	9
Colombia	1	1	4	4	4	2	1	2	19
Ecuador	-	2	-	2	-	2	2	-	8
Peru	-	-	-	1	3	2	1	1	8
Paraguay	-	1	1	-	1	1	-	-	4
Uruguay	-	-	-	1	7	-	2	2	13
Venezuela	-	1	4	2	4	-	-	2	13
Panama, Central America, Mexico									
Panama	-	1	-	-	1	-	-	1	3
Costa Rica	-	-	2	-	-	-	-	-	2
El Salvador	-	1	-	-	-	-	-	-	1
Guatemala	-	1	-	1	-	-	1	1	4
Honduras	1	-	-	-	-	1	-	-	2
Nicaragua	-	-	-	1	-	-	-	1	2
Mexico	1	1	1	2	-	4	2	4	15
Caribbean Area									
Barbados	-	-	-	-	1	1	-	-	2
Belize	-	-	-	-	-	-	-	1	1
Cuba	-	-	1	1	-	3	1	-	6
Curaçao	-	-	-	-	-	-	1	-	1
Dominican Republic	-	-	-	1	1	-	2	-	4
Grenada	-	-	-	-	-	-	1	-	1
Haiti	-	-	-	-	-	1	2	-	3
Jamaica	-	-	-	-	-	1	-	-	1
Surinam	-	-	-	-	1	-	-	-	1
Trinidad & Tobago	-	-	-	-	-	2	2	-	4
Others									
Philippines	-	-	-	-	-	1	-	-	1
[illegible]	-	-	-	-	-	1	-	-	1
TOTAL	7	21	38	41	42	34	37	36	256

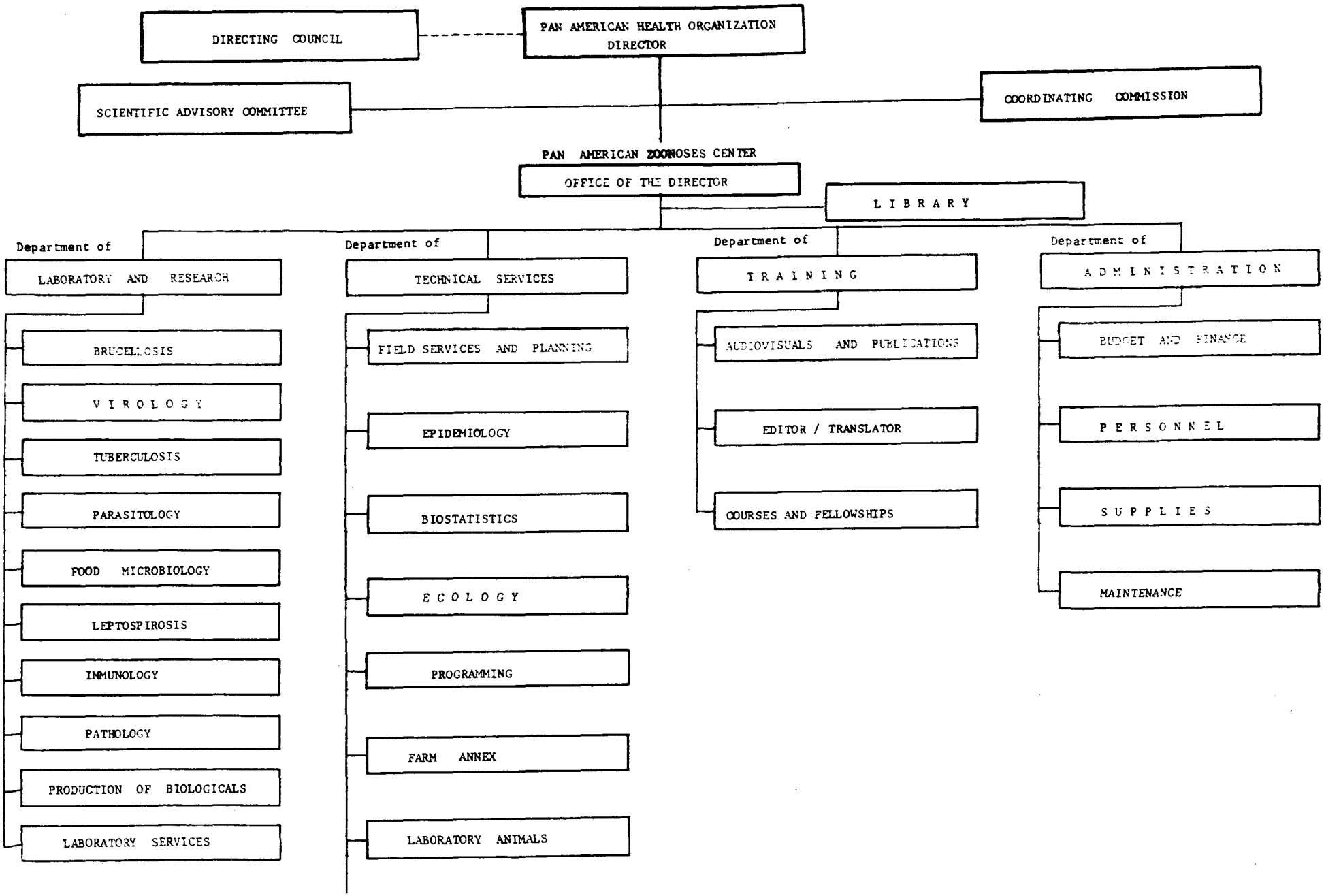
TABLE 5

COURSES, SEMINARS AND CONGRESSES

1975

Subject	Country	Dates
I Meeting on Hydatidosis Prophylaxis	Rawson, Argentina	25-26 March
Course on Rabies	Buenos Aires, Argentina	15-22 & 29 Sept.
VI Argentine Congress on Nutrition	Buenos Aires, Argentina	3-7 October
III Meeting on Medical-Sanitary Matters	Buenos Aires, Argentina	24-25 October
XII Argentine Congress of Gastroenterology	Buenos Aires, Argentina	2-7 November
Seminar on Hydatidosis Control, CEPANZO	Buenos Aires, Argentina	17-21 November
IV Seminar of the Armed Forces on Veterinary Medicine	Buenos Aires, Argentina	17-21 November
XV Argentine Congress on Phtisiology	Buenos Aires, Argentina	23-28 November
Course on Rabies Diagnosis	Curitiba, Brazil	27 Oct. - 7 Nov.
Course on the Production and Control of Rabies Vaccines	Parana, Brazil	11-28 November
X Latin American Congress of Pathology	Recife, Brazil	17-21 November
Seminar on Brucellosis and Tuberculosis	Porto Alegre, Brazil	1-6 December
Seminar on Ecology and Control of Ectoparasites	Cali, Colombia	25-29 August
XXI Regional Dairy Training Course	Santiago, Chile	25-27 May

Subject	Country	Dates
Seminar on the Production of Veterinary Biologicals for Central America, Mexico and Panama	Mexico City, Mexico	20-23 August
Scientific Committee on Tuberculosis in Animals	Mexico City, Mexico	18-19 September
XXIII International Conference of the International Union against Tuberculosis	México City, Mexico	22-26 September
FAO Experts Consultation on Agricultural Research in Latin America	Panama, Panama	9-14 June
Seminar on Control of Diarrheas in Children	Asunción, Paraguay	27-29 August
Seminar on Veterinary Public Health	Asunción, Paraguay	20-24 October
Conference on Upkeep and Usages of Non-human Primates of the American Continent for Biological and Medical Investigations	Lima, Peru	2-4 June
Course on Epidemiology	Chincha, Peru	6-18 October
Course on Rabies Diagnosis	Lima, Peru	19 Nov. - 2 Dec.
Informal Consultation on International Post-graduate Training in Food Microbiology	Berlin, Federal Rep. of Germany	11-13 November


DIRECTING COUNCIL
PAN AMERICAN HEALTH ORGANIZATION
DIRECTOR
SCIENTIFIC ADVISORY COMMITTEE
COORDINATING COMMISSION
PAN AMERICAN ZOONOSES CENTER
OFFICE OF THE DIRECTOR
LIBRARY
Department of
LABORATORY AND RESEARCH
BRUCELLOSIS
VIROLOGY
TUBERCULOSIS
PARASITOLOGY
FOOD MICROBIOLOGY
LEPTOSPIROSIS
IMMUNOLOGY
PATHOLOGY
PRODUCTION OF BIOLOGICALS
LABORATORY SERVICES
Department of
TECHNICAL SERVICES
FIELD SERVICES AND PLANNING
EPIDEMIOLOGY
BIOSTATISTICS
ECOLOGY
PROGRAMMING
FARM ANNEX
LABORATORY ANIMALS
Department of
TRAINING
AUDIOVISUALS AND PUBLICATIONS
EDITOR / TRANSLATOR
COURSES AND FELLOWSHIPS
Department of
ADMINISTRATION
BUDGET AND FINANCE
PERSONNEL
SUPPLIES
MAINTENANCE

BUDGET
OF THE PAN AMERICAN ZOONOSES CENTER
FOR 1976

ESTIMATES
FOR 1977

BUDGET OF THE PAN AMERICAN ZOONOSES CENTER FOR 1976 AND ESTIMATES FOR 1977

The year of 1976 corresponds to the fifth 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 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 program.

SOURCE OF FUNDS

Under the Regional Project, the funds allocated for financing the activities of the Pan American Zoonoses Center during the period 1972-1977 will come out from the 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 1976 through 1977.

TABLE 1

PAN AMERICAN ZOONOSES CENTER
BUDGETARY PROJECTIONS FOR THE YEARS 1976 THROUGH 1977
(In US dollars)

	1976 $	1977 $
Contributions from the United Nations Development Program (UNDP)	276,050	161,440
Contributions from the Government of Argentina *	460,214	530,395
Funds from Regular Budget of the Pan American Health Organization **	683,870	830,392
Funds from the Regular Budget of the World Health Organization	169,970	187,391
	1,590,104	1,709,618

* The US dollar figure is subject to change since the funds are received in local currency and converted to US dollars, using the exchange rate at the time of receipt.

** In the funds of the PAHO Regular Budget, there are included the corresponding contributions of the ministries of agriculture, in the amounts of $ 483,153 (1976) and $ 531,468 (1977). These amounts, included in the PAHO regular budget and approved by the Directing 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 Governments 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	%	$ 1977
Argentina	7.40	36,542
Barbados	0.08	396
Bolivia	0.19	938
Brazil	7.40	36,542
Chile	1.35	6,666
Colombia	1.54	7,605
Costa Rica	0.19	938
Cuba	1.06	5,234
Dominican Republic	0.19	938
Ecuador	0.19	938
El Salvador	0.19	938
Guatemala	0.29	1,432
Haiti	0.19	938
Honduras	0.19	938
Jamaica	0.19	938
Mexico	8.27	40,837
Nicaragua	0.19	938
Panama	0.19	938
Paraguay	0.19	938
Peru	0.67	3,309
Trinidad & Tobago	0.19	938
United States of America	66.00	325,908
Uruguay	0.58	2,864
Venezuela	3.08	15,209
	100.00	493,800
Other Members and Participating Governments		
Bahamas	0.06	296
Canadá	6.81	33,620
France	0.19	938
Guyana	0.19	938
Kingdom of the Netherlands	0.19	938
United Kingdom	0.19	938
		37,668
TOTAL		531,468

PAN AMERICAN ZOONOSES CENTER

BREAKDOWN OF THE BUDGET FOR 1976

	Office of Director	Training and Technical Information	Technical Assistance: Field Services for Zoonoses Control	Technical Assistance: Laboratory Services	Research	Administration	Meetings	Local Costs	Total	% of Total
Salaries & Allowances	79,167	99,617	283,168	270,119	450,534	72,015	-	-	1,254,620	78.9
Short-term Consultants	-	11,800	11,800	5,900	5,900	-	-	-	35,400	2.2
Duty Travel	2,770	3,770	15,234	10,464	6,232	-	-	-	38,470	2.4
Fellowships	-	38,950	-	-	-	-	-	-	38,950	2.5
Supplies & Equipment	-	13,355	3,492	40,503	27,933	2,007	-	-	87,290	5.5
Common Services	-	7,214	7,518	20,856	25,040	-	-	-	60,628	3.8
Contractual Services	-	3,891	-	3,517	5,068	-	-	-	12,476	0.8
Meetings	-	-	-	-	-	-	26,340	-	26,340	1.7
Local Costs	-	-	-	-	-	-	-	31,000	31,000	1.9
Publications	-	4,930	-	-	-	-	-	-	4,930	0.3
TOTAL	81,937	183,527	321,212	351,359	520,707	74,022	26,340	31,000	1,590,104	
			672,571							
Percentage of Total	5.2	11.5	20.2	22.1	32.8	4.7	1.6	1.9		100
			42.3							

PAN AMERICAN ZOONOSES CENTER

BUDGET

1 JANUARY THROUGH 31 DECEMBER 1976

I. OFFICE OF THE DIRECTOR	81,937
a) Personnel: Salary & Allowances	79,167
Professional Staff (2) Director P.5 Administrative Officer P.3	
Local Staff (3)	
b) Duty travel	2,770
II. TRAINING AND TECHNICAL INFORMATION ACTIVITIES	183,527
a) Personnel: Salary & Allowances	99,617
Professional Staff (3)	
Chief of Training P.4 Editor/Translator P.2 Audiovisual Specialist P.1	
Local Staff (5)	
b) Short term consultants	11,800
c) Duty travel	3,770
d) Fellowships	38,950
e) Supplies and Equipment	13,355
f) Common Services	7,214
g) Contractual Services	3,891
h) Publications	4,930
III. FIELD SERVICES FOR ZOONOSES CONTROL	321,212

BUDGET 1976 (cont.)

a) Salaries and allowances	283,168
Professional staff (8)	
Chief of Technical Services, P.5 Control Programs Adviser, P.4 Biostatistician, P.4 3 Bacteriologists, P.4 Zoonoses Specialist, P.4 (50%) Serologist, P.4 (50%)	
Local personnel (11)	
b) Short term consultants	11,800
c) Duty travel	15,234
d) Supplies & Equipment	3,492
e) Common Services	7,518
IV. LABORATORY SERVICES	351,359
a) Personnel: Salary & Allowances	270,119
Professional Staff (2.5)	
Chief of Laboratory (50%), P.5 Parasitologist, P.4 Biologicals Expert. P.4	
Local Staff (25)	
b) Short term consultants	5,900
c) Duty travel	10,464
d) Supplies and equipment	40,503
e) Common services	20,856
f) Contractual services	3,517
V. RESEARCH SERVICES	520,707

BUDGET 1976 (cont.)

a) Personnel: Salary and Allowances		450,534
Professional Staff (9.5)		
Chief of Laboratories (50%), P.5		
Food Microbiologist, P.4		
Immunologist, P.4		
Pathologist, P.4		
Zoonoses Specialist (50%), P.4		
Virologist, P.4		
Serologist, P.4 (50%)		
Scientist Assistant, P.2 (Tub.)		
Scientist Assistant, P.2 (Lepto.)		
Scientist Assistant, P.1 (Immun.)		
Scientist Assistant, P.1 (Vir.)		
Local Staff (32)		
b) Short term consultants		5,900
c) Duty travel		6,232
d) Supplies and Equipment		27,933
e) Common Services		25,040
f) Contractual Services		5,068
VI. ADMINISTRATIVE SERVICES		74,022
a) Personnel: Salaries & Allowances		72,015
Local Staff (11)		
b) Supplies & Equipment		2,007
VII. MEETINGS		26,340
Scientific Advisory Committee		
Travel	21.140	
Per diem	5.200	
VIII. LOCAL COSTS		31,000
Local operating costs		31,000
TOTAL		1,590,104

PAN AMERICAN ZOONOSES CENTER

BUDGET FOR 1976

TECHNICAL ADVISORY SERVICES

	Field Services	%	Laboratory Services	%	Total
Salaries & Allowances					
International Staff	221,226	68.9	149,602	42.6	370,828
Local staff	73,742	23.0	126,417	36.0	200,159
Duty travel	15,234	4.7	10,464	3.0	25,698
Supplies and Equipment	3,492	1.1	40,503	11.5	43,995
Common Services	7,518	2.3	20,856	5.9	28,374
Contractual Services	-	-	3,517	1.0	3,517
TOTAL	321,212	100.0	351,359	100.0	672,571
Percentage of Total	47.8		52.2		100.0

PAN AMERICAN ZOONOSES CENTER

1976 BUDGET

TRAINING AND TECHNICAL INFORMATION

	National Courses*	International Courses & Seminars	Individual Training	Publications	Total	Percentage of Total
Salaries & Allowances						
International Staff	27,438	25,262	13,298	3,081	69,079	37.6
Local Staff	15,284	13,887	7,240	5,927	42,338	23.1
Duty Travel	1,301	1,700	769	-	3,770	2.0
Fellowships	14,840	14,567	9,543	-	38,950	21.2
Supplies & Equipment	3,126	2,723	387	7,119	13,355	7.3
Common Services	1,580	1,270	324	4,040	7,214	3.9
Contractual Services	1,570	1,368	526	427	3,891	2.2
Publications	2,054	2,054	822	-	4,930	2.7
Total	67,193	62,831	32,909	20,594	183,527	
Percentage of Total	36.6	34.2	18.0	11.2		100

* To be held in the countries with the assistance of the Center.

PAN AMERICAN ZOONOSES CENTER

1976 BUDGET

RESEARCH PROJECTS

	Epidemiological Research	Improvement of Diagnosis	Improvement of Vaccines	Basic Research	Total	Percentage of Total
Salaries & Allowances						
International Staff	77,959	77,192	64,412	36,040	255,603	49.1
Local Staff	59,245	58,643	50,609	32,334	200,831	38.6
Duty Travel	2,176	2,056	1,371	629	6,232	1.2
Supplies & Equipment	8,517	8,411	7,039	3,966	27,933	5.4
Common Services	6,863	7,860	7,162	3,155	25,040	4.8
Contractual Services	1,571	1,558	1,357	582	5,068	0.9
Total	156,331	155,720	131,950	76,706	520,707	
Percentage of Total	30.0	30.0	25.3	14.7		100

PAN AMERICAN ZOONOSES CENTER
BREAKDOWN OF THE BUDGET FOR 1977

	Technical Assistance									
	Office of Director	Training & Technical Information	Field Services for Zoonoses Control	Laboratory Services	Research	Administration	Meetings	Local Costs	Total	% of Total
Salaries & Allowances	82,623	103,966	295,531	281,913	470,205	75,160	-	-	1.309,398	76.6
Short-term Consultants	-	9,500	9,500	4,750	4,750	-	-	-	28,500	1.7
Duty Travel	3,423	4,659	18,827	12,931	7,702	-	-	-	47,542	2.8
Fellowships	-	36,040	-	-	-	-	-	-	36,040	2.1
Supplies & Equipment	-	14,240	3,723	43,186	29,783	2,141	-	-	93,073	5.4
Common Services	-	10,470	10,909	30,265	36,335	-	-	-	87,979	5.2
Contractual Services	-	3,891	-	3,517	5,068	-	-	-	12,476	0.7
Meetings	-	-	-	-	-	-	52,680	-	52,680	3.1
Local Costs	-	-	-	-	-	-	-	37,000	37,000	2.2
Publications	-	4,930	-	-	-	-	-	-	4,930	0.2
TOTAL	86,046	187,696	338,490	376,562	553,843	77,301	52,680	37,000	1.709,618	
			715,052							
Percentage of Total	5.0	11.0	19.8	22.0	32.4	4.5	3.1	2.2		100
			41.8							

PAN AMERICAN ZOONOSES CENTER

BUDGET

1 JANUARY THROUGH 31 DECEMBER 1977

I. OFFICE OF THE DIRECTOR	86,046
a) Personnel: Salaries & Allowances	82,623
Professional Staff (2) Director, P.5 Administrative Official, P.3	
Local Staff (3)	
b) Duty travel	3,423
II. TRAINING AND TECHNICAL INFORMATION	187,696
a) Personnel: Salaries & Allowances	103,966
Professional Staff (3) Chief of Training P.4 Editor/Translator, P.2 Audiovisuals Specialist, P.1	
Local Staff (5)	
b) Short term consultants	9,500
c) Duty travel	4,659
d) Fellowships	36,040
e) Supplies and Equipment	14,240
f) Common Services	10,470
g) Contractual Services	3,891
h) Publications	4,930
III. FIELD SERVICES FOR ZOONOSES CONTROL	338,490
a) Personnel: Salaries & Allowances Professional Staff (8)	295,531

BUDGET 1977 (cont.)

Chief of Technical Services, P.5 Control Programs Advisor, P.4 Biostatistician, P.4 Epidemiologist, Md., P.4 3 Bacteriologists, P.4 Zoonoses Specialist, P.4 (50%) Serologist, P.4 (50%)	
Local Staff (11)	
b) Short term consultants	9,500
c) Duty travel	18,827
d) Supplies & equipment	3,723
e) Common Services	10,909
IV. LABORATORY SERVICES	376,562
a) Personnel: Salaries & Allowances	281,913
Professional Staff (2.5) Chief of Laboratory (50%), P.5 Parasitologist, P.4 Biologicals Expert, P.4	
Local Staff (25)	
b) Short term consultants	4,750
c) Duty travel	12,931
d) Supplies & Equipment	43,186
e) Common Services	30,265
f) Contractual Services	3,517
V. RESEARCH SERVICES	553,843
a) Personnel: Salaries & Allowances	470,205
Professional Staff (9.5) Chief of Laboratories (50%), P.5 Food Microbiologist, P.4 Immunologist, P.4	

BUDGET 1977 (cont.)

Pathologist, P.4 Zoonoses Specialist (50%), P.4 Virologist, P.4 Serologist (50%), P.4 Assistant Scientist, P.2 (Tub.) Assistant Scientist, P.2 (Lept.) Assistant Scientist, P.1 (Vir.)		
Local Staff (32)		
b) Short-term consultants		4,750
c) Duty travel		7,702
d) Supplies and Equipment		29,783
e) Common Services		36,335
f) Contractual Services		5,068
VI. ADMINISTRATIVE SERVICES		77,301
a) Personnel: Salaries & Allowances		75,160
Local Staff (11)		
b) Supplies & Equipment		2,141
VII. MEETINGS		52,680
Technical Coordinating Committee Scientific Advisory Committee		
Travel	42,280	
Per diem	10,400	
VIII LOCAL COSTS		37,000
Local operating costs		37,000
TOTAL		1.709,618

PAN AMERICAN ZOONOSES CENTER

BUDGET FOR 1977

TECHNICAL ADVISORY SERVICES

	Field Services	%	Laboratory Services	%	Total
Salaries & Allowances					
International Staff	201,320	59.4	118,678	31.5	319,998
Local Staff	103,711	30.6	167,985	44.6	271,696
Duty Travel	18,827	5.6	12,931	3.4	31,758
Supplies & Equipment	3,723	1.1	43,186	11.5	46,909
Common Services	10,909	3.3	30,265	8.0	41,174
Contractual Services	-		3,517	1.0	3,517
TOTAL	338,490	100.0	376.562	100.0	715,052
Percentage of total	47.3		52.7		100,0

PAN AMERICAN ZOONOSES CENTER
1977 BUDGET
TRAINING AND TECHNICAL INFORMATION

	National Courses *	International Courses & Seminars	Individual Training	Publications	Total	Percentage of Total
Salaries & Allowances						
International Staff	27,943	25,727	13,542	3,137	70,349	37.5
Local Staff	15,565	14,142	7,373	6,037	43,117	23.0
Duty Travel	1,608	2,101	950	-	4,659	2.5
Fellowships	13,731	13,479	8,830	-	36,040	19.2
Supplies & Equipment	3,334	2,904	412	7,590	14,240	7.6
Common Services	2,293	1,843	471	5,863	10,470	5.6
Contractual Services	1,570	1,368	526	427	3,891	2.0
Publications	2,054	2,054	822	-	4,930	2.6
TOTAL	68,098	63,618	32,926	23,054	187,696	
Percentage of Total	36.3	33.9	17.5	12.3		100

* To be held in the countries with the assistance of the Center.

PAN AMERICAN ZOONOSES CENTER
1977 BUDGET
RESEARCH PROJECTS

	Epidemiological Research	Improvement of Diagnosis	Improvement of Vaccines	Basic Research	Total	Percentage of Total
Salaries & Allowances						
International Staff	81,122	80,325	67,026	37,502	265,975	48.0
Local Staff	61,649	61,022	52,663	33,646	208,980	37.7
Duty Travel	2,689	2,541	1,694	778	7,702	1.4
Supplies & Equipment	9,081	8,968	7,505	4,229	29,783	5.4
Common Services	9,959	11,406	10,392	4,578	36,335	6.6
Contractual Services	1,571	1,558	1,357	582	5,068	0.9
TOTAL	166,071	165,820	140,637	81,315	553,843	
Percentage of Total	30.0	30.0	25.4	14.6		100