



*executive committee of  
the directing council*

PAN AMERICAN  
HEALTH  
ORGANIZATION

*working party of  
the regional committee*

WORLD  
HEALTH  
ORGANIZATION



68th Meeting  
Washington, D. C.  
July 1972

Provisional Agenda Item 13

CE68/5 (Eng.)  
8 May 1972  
ORIGINAL: SPANISH

V INTER-AMERICAN MEETING OF FOOT-AND-MOUTH DISEASE AND ZONOSSES CONTROL

In implementation of Resolution XIX of the XVII Meeting of the Directing Council, the Director convened the V Inter-American Meeting, at the Ministerial Level, on the Control of Foot-and-Mouth Disease and Other Zoonoses, to meet in Mexico City from 10 to 13 April 1972.

Representatives of 29 Member Governments attended the meeting, at which seven international agencies were represented by observers.

The Director is pleased to submit the following documents to the Executive Committee for onward transmission to the XXI Meeting of the Directing Council, with such recommendations as it deems advisable:

- Agenda
- List of Participants
- 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

Background documents on the various agenda items are available for study and review by Members of the Committee, who may request them from the Secretariat.

The main subject dealt with at the V Inter-American Meeting, as may be seen from the Agenda, was "Pesticides. Their Effects on Human and Animal Health and on the Environment." Each representative gave an account of the present status of the problem in his own country, as well as of preventive programs and programs for the control of vesicular diseases in cattle. A panel discussion was held on the "Organization and Administration of Animal Health Services," which was illustrated by three examples: the Control Program for Venezuelan Equine Encephalitis in Mexico; the Foot-and-Mouth Disease Campaign in Chile; and Bovine Tuberculosis Eradication in Canada.

The Final Report contains the 24 resolutions which the Ministers of Agriculture approved and which deal with the use and control of pesticides, organization of animal health statistical and epidemiological surveillance services, strengthening of diagnostic laboratories, personnel training, guidelines and criteria for the preparation and evaluation of tuberculosis control programs, a course in animal health planning, and collaboration between international agencies.

Two resolutions with budgetary implications were discussed and approved, namely:

Resolution I, by which the Governments expressed their full support for the Foot-and-Mouth Disease Center and recommended to the XXI Meeting of the Directing Council of the Organization that it approve the Program and Budget Estimates of the Center for 1973 (Document RICA5/6); and

Resolution IV, by which the Governments reaffirmed their support for the Pan American Zoonoses Center, expressed their satisfaction with the regional project initiated this year with the financial assistance of the United Nations Development Program, and recommended to the XXI Meeting of the Directing Council of the Organization that it approve the Program and Budget Estimates for 1973 (Document RICA5/11).

Annexes



PAN AMERICAN HEALTH ORGANIZATION

CE68/5 (Eng.)  
ANNEX I



WORLD HEALTH ORGANIZATION

# V INTER-AMERICAN MEETING ON FOOT-AND-MOUTH DISEASE AND ZOONOSIS CONTROL

MEXICO CITY, MEXICO, 10-13 APRIL 1972

RICA5/1, Rev. 2 (Eng.)  
10 April 1972  
ORIGINAL: ENGLISH-SPANISH

## AGENDA

- |  | Document<br><u>No.</u>                                     |
|--|--|
| 1. Preliminary Session. Election of the President and Two Vice-Presidents  |  |
| 2. Inaugural Session. Presentations by the Secretary of Agriculture and Livestock Development and by the Director of the Pan American Sanitary Bureau          |  |
| 3. Approval of the Provisional Agenda and the Program of Sessions  | RICA5/1, Rev. 2  |
| 4. Pesticides. Their Effects on Human and Animal Health and on the Environment   | RICA5/7,<br>RICA5/9,<br>RICA5/16,<br>RICA5/17,<br>RICA5/20 |
| A. Pesticides and the Environment  |  |
| B. Benefits and Problems from the Use of Pesticides in the Protection of Human Health  |  |
| C. Benefits and Problems from the Use of Pesticides in the Protection of Animal Health   |  |
| D. Pesticides. Development and Research  |  |
| E. Problems of Pesticides in the International Commerce of Food of Animal Origin   |  |
| 5. Present Situation of Foot-and-Mouth Disease and other Vesicular Diseases in Cattle in the Americas. Preventive and Control Programs. <u>Country Reports</u> | RICA5/18   |
| 6. Research Program of the Pan American Foot-and-Mouth Disease Center  | RICA5/2  |

	<u>Document No.</u>
7. Program and Budget of the Pan American Foot-and-Mouth Disease Center	RICAZ5/4, RICAZ5/5, RICAZ5/6 and ADD.I, RICAZ5/15
8. Program and Budget of the Pan American Zoonoses Center	RICAZ5/11
9. Panel on the Organization and Administration of Animal Health Services	RICAZ5/8, RICAZ5/10, RICAZ5/14, RICAZ5/19, RICAZ5/21
A. Organization and Administration of Animal Health Services	
B. Organization of Laboratory Services for Animal Health	
C. Administrative Aspects of the Control Program for Venezuelan Equine Encephalitis in Mexico	
D. Administrative Aspects and Development of the Foot-and-Mouth Disease Campaign in Chile	
E. Administrative Aspects of the Bovine Tuberculosis Eradication Program in Canada	
10. Presentation of the Guidelines and Criteria for the Control and Eradication of Bovine Tuberculosis	RICAZ5/3
11. Epidemiological Surveillance of Rabies and Foot-and-Mouth Disease and other Vesicular Diseases	RICAZ5/12, RICAZ5/13
12. Limited Survey About Pesticide Problems and Control in the Americas	RICAZ5/22



ORGANIZACION PANAMERICANA DE LA SALUD

CE68/5 (Eng.)  
ANNEX II

# V REUNION INTERAMERICANA SOBRE EL CONTROL DE FIEBRE AFTOSA Y OTRAS ZOONOSIS

ORGANIZACION MUNDIAL DE LA SALUD

MEXICO, D F., MEXICO, 10-13 ABRIL 1972

RICAZ5/23, Rev. 2  
11 abril 1972  
ORIGINAL: ESPAÑOL-INGLES

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PAN AMERICAN HEALTH ORGANIZATION

CE68/5 (Eng.)  
ANNEX III

# V INTER-AMERICAN MEETING ON FOOT-AND-MOUTH DISEASE AND ZOO NOSES CONTROL

WORLD HEALTH ORGANIZATION

MEXICO CITY, MEXICO, 10-13 APRIL 1972

RICAZ5/25 (Eng.)  
13 April 1972  
ORIGINAL: ENGLISH-SPANISH

F I N A L   R E P O R T

## TABLE OF CONTENTS

	<u>Page</u>
PREAMBLE	I
RESOLUTIONS	
I. Proposed Program and Budget of the Pan American Foot-and-Mouth Disease Center for 1973 and Provisional Draft for 1974	1
II. Vote of Thanks to the Scientific Advisory Committee of the Pan American Foot-and-Mouth Disease Center	3
III. Contribution of the Inter-American Development Bank to Animal Health Programs	5
IV. Proposed Program and Budget of the Pan American Zoonoses Center for 1973 and Provisional Draft for 1974	7
V. Epidemiological Surveillance of Vesicular Diseases	10
VI. Epidemiological Surveillance of Rabies	12
VII. Epidemiological Surveillance of Venezuelan Equine Encephalitis	14
VIII. Foot-and-Mouth Disease Control Programs	16
IX. Organization of Animal Health Statistics Services	18
X. Community Education in Animal Health	20
XI. Development of National Laboratories for Diagnosis and Control for Animal Health Programs	22
XII. Guidelines and Criteria for the Preparation and Evaluation of Tuberculosis Control Programs	25
XIII. Course on Animal Health Planning	27
XIV. Personnel Training in Countries Declared Free of Foot-and-Mouth Disease	28
XV. Use and Control of Pesticides	29



## TABLE OF CONTENTS (cont.)

	<u>Page</u>
XVI. Training of Personnel for Animal Health Programs	32
XVII. Vote of Thanks to the Government of Mexico	34
XVIII. Place of the Next Meeting	35
XIX. Training of Personnel in the Control of the International Movement of Animals and Animal Products	37
XX. Election of Three Member Governments to the Technical Coordinating Committee for the Regional Project of the Pan American Zoonoses Center	40
XXI. Sanitary Control of Meat and Other Products of Animal Origin	41
XXII. Programs for the Control of Brucellosis and Bovine Tuberculosis in the Central American Isthmus	42
XXIII. Collaboration of FAO in Foot-and-Mouth Disease Control Programs	44
XXIV. Prevention of Foot-and-Mouth Disease in Areas of the Americas Now Free of the Disease	45

## FINAL REPORT

The V Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control was held in the Secretariat of Foreign Affairs, in Mexico City, from 10 to 13 April 1972, having been convened by the Director of the Pan American Sanitary Bureau pursuant to Resolution XIX approved by the Directing Council of the Pan American Health Organization at its XVII Meeting.

## OFFICERS

The heads of delegations met on 10 April to elect the officers of the meeting, with the following results:

President:	Mr. Manuel Bernardo Aguirre Secretary of Agriculture and Livestock Development, Mexico
Vice-Presidents:	Dr. Hernán Vallejo Mejía Vice-Minister of Agriculture and Livestock Development Ministry of Agriculture and Livestock Development, Colombia
	Dr. J. Phil Campbell Under Secretary of Agriculture Department of Agriculture United States of America

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

## PARTICIPANTS

The following Governments were represented at the meeting: Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, France, Guatemala, Guyana, Haiti, Honduras, Jamaica, the Kingdom of the Netherlands, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, the United Kingdom, the United States of America, Uruguay, and Venezuela. Observers from the following international organizations were also present: Food and Agriculture Organization of the United Nations (FAO), Inter-American Development Bank (IDB), Inter-American

Institute of Agricultural Sciences (IICA), International Bank for Reconstruction and Development (IBRD), International Office of Epizootics (OIE), International Regional Organization for Agriculture and Livestock (OIRSA), and the Organization of American States (OAS).

#### PLENARY SESSIONS

At the inaugural session, held on 10 April, addresses were given by Mr. Manuel Bernardo Aguirre, Secretary of Agriculture and Livestock Development of Mexico, and Dr. Abraham Horwitz, Director of the Pan American Sanitary Bureau.

Mr. Aguirre stressed the importance of the V Meeting, stating that Mexico fully appreciated the problem of foot-and-mouth disease, since on two occasions it had suffered from its devastating effects. He pointed out that the completion of the Pan American Highway in the Darién Gap and the Chocó region of Colombia, while constituting an achievement of great benefit to the Hemisphere, would also present the serious problem of spread of foot-and-mouth disease to countries now free of the disease. He then cited the outstanding progress that had been made in the American countries in appreciating the relationships that existed between agriculture and health, making special mention of the accomplishments of the Pan American Health Organization, through the Pan American Foot-and-Mouth Disease and Zoonoses Centers. He specially praised its action in the fields of education and training; in the development of laboratory, diagnostic, and biological control services; and in the surveillance of the principal animal diseases. In concluding, he welcomed all the participants in the name of the President of the Republic of Mexico.

Next, Dr. Horwitz thanked the Government of Mexico for its kind invitation to hold the meeting in that country. He then addressed himself to the question of pesticides, one of the topics of the meeting. Pointing out the significance of pesticides and their effects on human and animal health and on the environment, he affirmed the need to identify the elements that were contaminating the air, the water, and the soil; to measure their concentrations on a regular basis; and to analyze the resulting data and correlate them with permissible levels based on known experiments. While recognizing that insecticides were indispensable for controlling vector-borne diseases and increasing agricultural and livestock production, he made it clear that their indiscriminate, excessive, and uncontrolled use affected the health of man and animals. It was an accepted fact, he said, that despite all precautions, certain pesticides were being spread throughout the agricultural, marine, and domestic ecosystems, ending up penetrating other areas of the biosphere as well. In order to contend with that problem, he made an appeal for intensified research directed toward finding biological - not necessarily chemical - methods of interfering directly in the life cycle of insects, either limiting their breeding capacity or curtailing it entirely.

Dr. Horwitz also referred to the question of organization and administration of animal health services, another topic of the meeting, declaring that those services were the instruments for carrying out programs and projects whose results would be all the more effective to the extent that they were better planned. He closed by saying, "We are backed by a strong and valid tradition, and we are looking forward to accomplishments of profound humanitarian content - all of which gives us reason to dedicate ourselves to this effort in joint and harmonious action; the task falls upon us to help to create more and better well-being among our peoples."

The first plenary session was opened by Mr. Aguirre, President of the V Meeting, who subsequently had to excuse himself in order to return to official commitments. The chair was then assumed by Dr. Hernán Vallejo Mejía, Deputy Minister of Agriculture and Livestock of Colombia. After an explanation by the Secretary of the manner in which the topics had been selected for the meeting and of the general plan for carrying out the sessions, the draft agenda was presented and approved unanimously.

Consideration of the first topic, "Pesticides: Their Effects on Human and Animal Health and on the Environment," was presented. The first paper under this heading, "Pesticides and the Environment," was presented by Dr. John E. Davies, Associate Professor in the Department of Medicine, University of Miami, who analyzed the clinical aspects of human toxicity resulting from organophosphate exposure. He reviewed, in particular, the question of training and surveillance of the exposed worker and summarized the epidemiology of DDT residues in man.

Dr. Guzmán García Martín, Chief of the PAHO/WHO Malaria Eradication Department, then presented a working paper entitled "Benefits and Problems in the Use of Pesticides for the Protection of Human Health" (Document RICA5/20). Referring especially to malaria eradication, he gave historical details on the evolution of this effort and called attention to the problems of insecticide resistance that have developed among some of the vectors. He stressed the need to establish an effective mechanism for securing cooperation between ministries of health and agriculture in the definition of specific indications, dosages, methods of application, etc., for each insecticide, suggesting the possibility that DDT and some of the carbamates be reserved exclusively for purposes of safeguarding health. Such interdepartmental coordination, he said, should be supported by legislation giving both ministries sufficient authority to prescribe the rational use of insecticides and suitable protective measures against any risks they may produce.

The next paper, "Pesticides and Livestock Health" (Document RICA5/9), was presented by Dr. Robert Sharman, PAHO/WHO Consultant. In it, he reviewed some of the benefits and problems related to pesticide use in livestock production in the Western Hemisphere. He stressed also that the ministries of

agriculture should develop educational programs to acquaint persons working in the livestock sector with the safest and most effective techniques for dealing with pest problems.

Dr. John F. Yost, Director of Agricultural Research and Development, Cyanamid International, then presented the report "Pesticides Research and Development" (Document RICAZ5/7), in which the problem was approached from the industrial point of view. Describing a typical profile of agricultural pesticide research and development, he explained the key technical inputs: efficacy testing, process development, cost estimates, and manufacturing facility; formulation, stability, and packaging of the pesticides; studies on metabolism, tissue, soil, and water residues and on flavor; studies on toxicology and animal safety; patent status; and commercial appraisal.

The session concluded with a paper by Dr. Jorge Borsella, "Problems of Pesticides in International Commerce of Food of Animal Origin" (Document RICAZ5/16). Dr. Borsella, President of the National Bureau of Animal Health of the Argentine Ministry of Agriculture and Livestock Development, cited the progress that has been achieved through international meetings, especially those of the Committee on Pesticide Residues of the FAO/WHO Codex Alimentarius Commission, the FAO Working Party of Experts and the WHO Expert Group on Pesticide Residues, the Inter-American Committee on Agricultural Protection, and the Regional Technical Commission on Animal Health of the Countries of the Southern Cone. In closing, he referred also to the creation of the Pesticide Residue Laboratory of the National Bureau of Animal Health, an agency of the Ministry of Agriculture and Livestock Development of Argentina.

The second plenary session opened with a presentation by the representative of the Inter-American Development Bank, Mr. Carlos A. Prato Blume, who reiterated the Bank's interest in continuing to provide financial assistance to the countries for their programs for the control of foot-and-mouth disease and other diseases affecting cattle. The Representative of Chile, Dr. Samuel Goldzweig, then referred to the importance of the Bank's financial assistance for animal health programs and presented a draft resolution in which a vote of thanks was extended to the Bank.

The second part of the session was devoted to country reports on the progress of activities to combat foot-and-mouth disease and other vesicular diseases. In the order in which they were registered, the following representatives presented their reports: Dr. Ezelino Alonso de Araujo Arteche and Mr. Ubiratan Mendes Serrão (Brazil), Dr. Jaime Estupiñán (Colombia), Dr. Juan Pablo Romero (Paraguay), Dr. D. Roberto Lorenzo Campion (Argentina), Dr. José R. Villar García (Cuba), Dr. Rodrigo González Quintero (Nicaragua), Mr. Francisco Lino Osegueda Jiménez (El Salvador), Dr. Nelson Magallanes Pastorino (Uruguay), Dr. Abelardo Ferrer Domingo and Dr. Miguel Villegas Delgado (Venezuela), Dr. Luis Vincenti (Bolivia), and Mr. José Guillermo González Mencos (Guatemala).

At the third plenary session, Dr. Jerry J. Callis presented the report of the Scientific Advisory Committee of the Pan American Foot-and-Mouth Disease Center. He emphasized the importance of the Center's research program, as well as the training and assistance activities it renders to the countries. The Representative of Venezuela presented a draft resolution thanking the Committee for its work. Dr. Mário V. Fernandes (Director, Pan American Foot-and-Mouth Disease Center) presented the proposed program and budget for the Center for 1973 and the provisional draft for 1974. During the subsequent discussion, the delegates expressed their satisfaction with the Center's technical and economic support of multinational activities to combat foot-and-mouth disease. The Representative of Peru then presented a draft resolution on the matter, which was approved by acclamation, with France abstaining.

The second part of the session began with the presentation by Dr. Ramón Rodríguez Toro (Director, Pan American Zoonoses Center) on the proposed program and budget of the Center for 1973 and the provisional draft for 1974. Following a brief discussion, the Representative of Brazil, after emphasizing the importance of the Center's new regional program for the planning and implementation of zoonoses control in the Hemisphere, presented a draft resolution, which was also approved by acclamation, with France abstaining.

Dr. Roberto Goic Martinic (Pan American Foot-and-Mouth Disease Center) presented a document on epidemiological surveillance of foot-and-mouth disease and other vesicular diseases. The Representative of Costa Rica presented a draft resolution, which was unanimously approved.

Dr. Rubén Lombardo (Pan American Zoonoses Center) presented a report on rabies epidemiological surveillance and the first bulletin published under the Center's new epidemiological surveillance program for Venezuelan equine encephalitis. The Representatives of Cuba and the United States of America presented two draft resolutions on the matter, which were unanimously approved.

At the fourth plenary session, the following representatives presented reports on the status of foot-and-mouth disease and other vesicular diseases: Dr. Kenneth F. Wells (Canada), Dr. Emilio Matto Cárdenas (Perú), Dr. Sergio Andrade Berne (Chile), Dr. Héctor O. Chacón (Honduras), Dr. José L. Solano Astúa (Costa Rica), Dr. Tarsicio Granizo (Ecuador), Dr. Héctor Campos López (México), Dr. Leonard V. Butcher and the Hon. Lionel Robinson (Trinidad and Tobago), Hon. Da Costa Edwards (Barbados), Dr. Linton T. McDonnough (Jamaica), Dr. Peter Fernandes (Guyana), and Mr. R. F. MacWilliam (Kingdom of the Netherlands).

Under the chairmanship of Dr. Vallejo Mejía, the fifth plenary session was devoted to the Panel on the Organization and Administration of Animal Health Services.

Dr. Raimundo Cardoso Nogueira, Director General of the National Department of Animal Production, Ministry of Agriculture of Brazil, opened the discussion with his statement "Organization and Administration of Animal Health Services" (Document RICAZ5/10). He pointed out that this subject is closely tied in with the organization and administration of health campaigns, of which animal health services is considered a specialized division. Stating the premise that all livestock development programs should have sanitary support, he went on to emphasize that "livestock production returns depend basically on the organic health condition of the animals."

Dr. Jaime Estupiñán, Director of the Livestock Production Division of the Colombian Agricultural Institute, then spoke on "Organization of Animal Health Laboratory Services" (Document RICAZ5/14). He began by pointing out that the evolution of medical science, with its improvement in the technical level of both human and animal health services, has brought with it the establishment of applied research laboratories to support and complement field activities. In order for such laboratory services to fulfill their basic purpose, he said it is necessary to have a central reference laboratory, staffed with specialists from various areas of research and also, at the regional level, a network of small diagnostic laboratories capable of undertaking applied research based on the special characteristics and needs of the area in question.

Next, Dr. Gustavo Reta Pettersson, Under Secretary for Livestock Development of Mexico, presented the review "Administrative Aspects of the Control Program for Venezuelan Equine Encephalitis in Mexico" (Document RICAZ5/19), in which he detailed the steps taken in programming and organizing the vaccination campaign against Venezuelan equine encephalitis in Mexico. He gave account of the sources of financing, the training of human resources, and the mobilization of other material elements needed to carry out its activities. He stressed that the determining factor in waging this campaign had been the steadfast cooperation of the various organized elements throughout the country, working closely with the federal agencies involved, and especially the outstanding efforts of the field veterinarians and assistants who took part in the program. A film made during the VEE control campaign in Mexico in 1971 was shown.

Following this, Dr. Samuel Goldzweig, Director of the Office of Agricultural Planning, Ministry of Agriculture of Chile, gave his account, "Administrative Aspects and Conduct of the Foot-and-Mouth Disease Campaign in Chile" (Document RICAZ5/8). He stated that this campaign, initiated three years ago, had made it possible to establish a sound infrastructure in animal health in his country. He then analyzed both the successful accomplishments and the mistakes that had been made, hoping that they might serve as a guide for other countries, and he concluded by touching on various aspects of the campaign such as the institutional framework, division of the project into geographical regions, and human and financial resources.

Dr. Vallejo Mejía, for reasons beyond his control, retired from the chair at this point. In the absence of the other Vice President of the Meeting, Dr. Ezelino Alonso de Araujo Arteche, Secretary General for Agriculture of Brazil, took charge of the deliberations.

The Representative of Brazil presented a proposed resolution on foot-and-mouth disease control programs, which was approved unanimously.

Finally, Dr. Kenneth F. Wells, Veterinary Director General, Health of Animals Branch of the Canadian Department of Agriculture, contributed his report, "The Administration of Tuberculosis Eradication in Canada" (Document RICAZ5/21). He declared that Canada's program to eliminate tuberculosis from livestock has been a most successful campaign. At the beginning infection rates in some areas of the country were as high as 25%, whereas today cases are only observed on rare occasions. He gave an historical review of the development of the campaign and described the methods used to combat the disease.

The Delegation of Mexico then presented a proposed resolution on the organization of animal health statistics services, which was approved.

Next, the Delegate of Chile presented a proposed resolution on community education in animal health. The Delegation of Venezuela suggested changes in the first operative paragraph, which were accepted by the Chilean Delegation. The Secretariat pointed out that the IV Meeting had requested the Pan American Health Organization to give priority to health information and education programs on behalf of anti-FMD campaigns. The change proposed by Venezuela was seconded by El Salvador. A reworded text, suggested by the Secretariat, was then approved.

The Delegation of Trinidad and Tobago presented a proposed resolution on the development of national laboratories for the diagnosis and control of biological products used in animal health programs, which was approved.

In the sixth plenary session, presided over by the Representative of Brazil, Dr. de Araujo Arteche, Dr. Ernest E. Saulmon, of the United States Department of Agriculture, gave the final report of the Advisory Study Group on Bovine Tuberculosis (Document RICAZ5/3). He explained how the Study Group had gone about analyzing the problems presented by bovine tuberculosis for human and animal health and briefly reviewed the principles and technical criteria that had been considered for the conduct and evaluation of campaigns against this disease.

Upon congratulating Dr. Saulmon and the Study Group for this report, a proposed resolution, "Guidelines and Criteria for the Preparation and Evaluation of Tuberculosis Control Programs," was presented by the Representative of Canada and approved.



The Representative of Paraguay then offered the proposed resolution, "Training of Personnel in the Control of the International Movement of Animals and Animal Products," and the Representative of Guatemala presented one on "Personnel Training in Countries Declared Free of Foot-and-Mouth Disease," both of which were approved.

Next, Dr. Alan R. Wagner introduced the document, "Limited Survey about Pesticide Problems and Control in the Americas" (Document RICAZ5/22), in which he pointed out that human and animal intoxications and mortalities are on the increase and constitute a serious hazard to the population and to livestock. He proposed that legislation on this subject be reviewed and brought up to date, that educational programs be improved, and that laboratories equipped to perform pesticide residue analysis be established. Finally, he called for the setting of international residue tolerance standards.

The Representatives of El Salvador, Jamaica, and Trinidad and Tobago congratulated the speaker on his presentation, and, after seconding their concern over this problem, described the various aspects of the use and abuse of pesticides in their respective countries. The Representative of El Salvador offered the services of his country's modern laboratory and, together with the Representative of Venezuela, presented the proposed resolution, "Use and Control of Pesticides." The Representative of the United States of America told of certain unfortunate incidents in his country resulting from the misuse of pesticides; he added, however, that it was not advisable to react violently against them. He said he did not feel that biological control was a solution in the immediate offing and recommended instead the intelligent use of pesticides. The Representatives of Venezuela and the United States of America thereupon requested changes in the wording of the resolution, and it was approved with the amendments proposed.

The Representative of Jamaica presented the proposed resolution, "Training of Personnel for Animal Health Programs," which was approved by acclamation. The Representative of Bolivia then offered the proposed resolution, "Sanitary Control of Meat and Other Products of Animal Origin," which gave rise to an extended debate. Since it was not possible to reach an agreement, the President appointed a working group, made up of the Representatives of Bolivia, Chile, Ecuador, the United States of America, and Venezuela, requesting them to bring together the opinions expressed in the course of the discussion and submit a revised text for approval by the plenary.

Next, the following representatives gave reports on the situation of vesicular diseases in their respective countries: Dr. Francis J. Mulhern (United States of America), Mr. Joseph-Raoul Santamaria (France), Mr. Remillot Leveille (Haïti), Mr. Jorge Ramírez Méndez (Panama), and Dr. Heberto Antonio Quirico Bodden (Dominican Republic).

Following this, the Representative of Honduras presented a proposed resolution thanking the Government of Mexico for its outstanding collaboration in the organization and conduct of the meeting, which was approved by acclamation.

Dr. R. Vittoz, Director of the International Office of Epizooties, reported to the participants on the activities carried out by his agency during 1971, mentioning in particular the study of problems of special interest to various countries (e.g. diseases, transportation of animals, etc.). He stated also that the Office is interested in the problem of rabies in wild animals, and, in closing, he referred to the agenda of its forthcoming meeting, at which the problems of salmonella and exotic diseases will be reviewed.

The chair then turned to the election of three governments to serve on the Technical Coordinating Committee for the Regional Project of the Pan American Zoonoses Center, whereupon Brazil, Guatemala, and Mexico were chosen.

The Representative of Colombia extended an invitation for the governments to hold the VI Inter-American Meeting in Bogota, and the Representative of Venezuela requested that this offer be accepted. The proposed resolution on this subject, presented by the Representative of Peru, was approved with slight modifications.

The Representative of Brazil then presented the proposed resolution, "Training of Personnel in the Control of the International Movement of Animal and Animal Products," which was approved, with certain changes proposed from the floor.

The seventh plenary session, which was held on 13 April, considered and approved the following proposed resolutions: "Prevention of Foot-and-Mouth Disease in Areas of the Americas Now Free of the Disease," "Collaboration of FAO in Foot-and-Mouth Disease Control Programs," "Programs for the Control of Brucellosis and Bovine Tuberculosis in the Central American Isthmus," and "Sanitary Control of Meat and Other Products of Animal Origin." The text of the last resolution had been prepared by the working group, made up of the Representatives of Bolivia, Chile, Ecuador, the United States of America, and Venezuela, appointed for that purpose at the sixth plenary session.

The closing session on 13 April 1972 was presided over by Dr. Vallejo Mejía and attended by Dr. Gustavo Reta Pettersson, on behalf of Mr. Manuel Bernardo Aguirre, Secretary of Agriculture of Mexico. The Final Report was presented by the Secretary ex officio, for consideration by the delegates, and was unanimously approved. The Final Report was then signed by Dr. Reta Pettersson, on behalf of Mr. Aguirre, Secretary of Agriculture of Mexico, and President of the V Inter-American Meeting, and Dr. Pedro N. Acha, on behalf of the Director of the Pan American Sanitary Bureau.

The Delegate from Honduras, Mr. Edgardo Sevilla, Minister of Agriculture, in the name of the delegates, expressed their appreciation and thanks to Mexico for making available the facilities for the conduct of the meeting and for the attention given to the delegates.

In the name of Dr. Horwitz, Dr. Acha expressed the appreciation of the Organization to the delegates for their participation in the meeting and the work they accomplished.

The Under Secretary for Livestock Development of Mexico, Dr. Reta Pettersson, extended the salutations of Mr. Aguirre to the delegates for their assistance and great achievements. He expressed his appreciation to Dr. Vallejo Mejía for his endeavors as President, and to the Pan American Health Organization and its personnel for the conduct of the meeting.

In the closing statement, Dr. Vallejo Mejía, in the name of the Assembly, expressed appreciation to Dr. Horwitz, to Dr. Acha, and to the translation and secretarial staff. He expressed his wish that in Bogota next year, similar accomplishments would be made.

RESOLUTION I

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

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

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

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

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

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

RESOLVES:

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

2. To recognize the need for the Center to continue its activities of promotion, development, and coordination in programs for the prevention and control of foot-and-mouth disease, as well as research and the training of officials in the countries of the Americas, as called for in the proposed program and budget for 1973 and in the provisional draft for 1974.
3. To recognize that the proposed program and budget of the Center contains well-balanced activities that are necessary in order to be able to provide the governments with scientific support and technical advisory services for the planning, execution, and coordination of national and regional programs for the prevention and control of foot-and-mouth disease.
4. To express its appreciation to the Government of Brazil for its unfailing goodwill and continuing support of the activities of the Center.
5. To recommend to the XXI Meeting of the Directing Council of the Pan American Health Organization that it approve the proposed program and budget of the Center for 1973, as set forth in Document RICAZ5/6.
6. To note that the provisional draft for 1974 contains soundly conceived and much-needed activities, which will be the subject of further study in 1973 by the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control and by the Executive Committee and the Directing Council of the Pan American Health Organization.

(Approved at the third plenary session,  
11 April 1972)

RESOLUTION II

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

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

Having appreciated, in all its worth, the report of the Scientific  
Advisory Committee of the Pan American Foot-and-Mouth Disease Center in  
regard to the work carried out by the Center in 1971;

Considering the importance of the Center's research activities for  
the better knowledge and control of this disease; and

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

RESOLVES:

1. To express its appreciation of the Scientific Advisory Committee's  
broad and thorough analysis of the activities and accomplishments of the  
Center.
2. To emphasize the recommendations of the Committee in regard to a  
better orientation in scientific research and to the technical assistance  
action that the Center should take in the problems related to this disease.

3. To express its thanks to the Scientific Advisory Committee for the work it has done, and to support its recommendations.

(Approved at the third plenary session,  
11 April 1972)

RESOLUTION III

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

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

Recognizing the importance of the control and prevention of animal diseases for the economies of the countries of the Americas;

Bearing in mind the valuable financial assistance that the Inter-American Development Bank has been giving to the countries for the planning and implementation of foot-and-mouth disease and zoonoses control programs;

Having noted that the Inter-American Development Bank, in response to Resolution V of the III Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control, has awarded technical assistance funds to the Pan American Health Organization for the establishment of a training program in the production and quality control of foot-and-mouth disease vaccines, a project which has also received substantial financial assistance from the Government of Brazil; and

Considering that, for economic and technical reasons, the control of animal diseases should be envisaged from the multinational standpoint, and that programs for animal health in general, and specifically the control of foot-and-mouth disease, should be Hemisphere-wide in scope,



RESOLVES:

1. To approve a vote of thanks to the Inter-American Development Bank for the financial support it has been giving to the countries in their campaigns against foot-and-mouth disease and the zoonoses.
2. To express its appreciation to the Inter-American Development Bank and to the Government of Brazil for their financial contributions to PAHO that have enabled the Pan American Foot-and-Mouth Disease Center to establish a training unit and program in the industrial production of various types of foot-and-mouth disease vaccines and the development of quality control methods; such a program will undoubtedly make a valuable contribution to the success of the campaigns against foot-and-mouth disease currently being carried out by the South American countries with the aid of the Inter-American Development Bank.
3. To reiterate Resolutions XII, VI, and II of the II, III and IV Inter-American Meetings, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control, respectively, to the effect that those countries that are still in the planning stage of their foot-and-mouth disease and zoonoses campaigns should consider the possibility of supplementing the financing of these programs by making use of the credit facilities afforded by the Inter-American Development Bank.

(Approved at the third plenary session,  
11 April 1972)

RESOLUTION IV

PROPOSED PROGRAM AND BUDGET OF THE  
PAN AMERICAN ZOO NOSES CENTER FOR 1973  
AND PROVISIONAL DRAFT FOR 1974

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

Recognizing the serious hazard to health presented by the principal zoonoses existing in the countries of the Americas, as well as the harmful effect of these diseases on the development of the livestock industry and on economic progress;

Recognizing the essential role that the Pan American Zoonoses Center performs by providing the governments of the Americas with educational, research, and advisory services for the control and prevention of the zoonoses;

Having noted that in January 1972 the Administrative Board of the United Nations Development Program approved the request formulated by the countries of the Hemisphere for financial assistance for the Pan American Zoonoses Center as a Regional Project;

Bearing in mind Resolution VI of the IV Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control on the proposed program and budget of the Center for 1972 and the provisional draft for 1973; and

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

RESOLVES:

1. To express its satisfaction with the activities that the Pan American Zoonoses Center has been carrying out on behalf of the countries of the Hemisphere, activities that will be expanded in the next years through the work of the new Regional Project.
2. To reaffirm the need for the Center to continue and expand its activities in order to provide the governments with the personnel training and technical advisory services that are indispensable for planning, organizing, and implementing national and regional programs for zoonoses control, as indicated in the program and budget for 1973 and the provisional draft for 1974.
3. To express its appreciation to the United Nations Development Program for the financial assistance granted for the development of the Center as a Regional Project.
4. To express its appreciation to the Government of Argentina once again for its continued and substantial support in the financing and operation of the Center.
5. To recommend to the XXI Meeting of the Directing Council of the Pan American Health Organization that it approve the proposed program and budget of the Center for 1973 as presented in Document RICAZ5/11.

6. To state that in the provisional draft program and budget for 1974 an appropriate balance is maintained among the technical assistance, educational, and research services to be provided to the countries, and that this provisional draft will be submitted to the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control, and to the Executive Committee and the Directing Council of the Pan American Health Organization in 1972 for consideration.

(Approved at the third plenary session,  
11 April 1972)

RESOLUTION V

EPIDEMIOLOGICAL SURVEILLANCE OF VESICULAR DISEASES

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

Having considered Document RICAZ5/12, which reviews the progress achieved under the foot-and-mouth disease epidemiological surveillance program in the Americas;

Bearing in mind the problems described in this document, especially the lack of timely information for identifying outbreaks of foot-and-mouth disease having epidemic characteristics; and

Recognizing the importance of consolidating all activities in support of programs for the prevention, control, and eradication of foot-and-mouth disease,

RESOLVES:

1. To urge that the countries intensify their epidemiological surveillance of vesicular animal diseases, in accordance with the technical standards developed by the Pan American Foot-and-Mouth Disease Center, and that they endeavor to standardize the tabulation and distribution of the corresponding data.

2. To urge the countries to report epidemic outbreaks promptly to the Pan American Foot-and-Mouth Disease Center, providing the essential information, especially when there is potential danger to areas or countries free of the disease or in an advanced stage of its control.

3. To recommend that the Pan American Health Organization intensify its activities related to Hemisphere-wide epidemiological surveillance of vesicular animal diseases, providing the greatest possible support to national programs for the prevention and control of foot-and-mouth disease.

(Approved at the third plenary session,  
11 April 1972)

RESOLUTION VI

EPIDEMIOLOGICAL SURVEILLANCE OF RABIES

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

Having studied the report presented by the Pan American Zoonoses Center on the rabies epidemiological surveillance service for the Americas;

Recognizing, as is made clear in this report, that bovine rabies is a prevalent problem in the Americas, that under-reporting continues to be a problem, and that it is necessary to improve reporting systems in the agriculture and health sectors as well as systems for the collection and shipment of laboratory samples;

Considering that for 26 per cent of the cases of bovine rabies reported by Latin American countries the laboratory diagnostic information is inadequate; and

Bearing in mind that it is necessary to improve diagnostic and reporting systems and to coordinate human and animal health services,

RESOLVES:

1. To request the Pan American Zoonoses Center to continue its efforts to improve the quality of the rabies epidemiological service for the Americas and to promote and encourage reporting systems in the field of animal health.

2. To recommend that the governments study the possibility of establishing intercountry diagnostic services in order to confirm the highest possible proportion of cases of animal rabies.

3. To recommend that the governments intensify their coordination with the Pan American Zoonoses Center, for the improvement of rabies reporting systems, recognizing that this step is indispensable for the control of the disease.

(Approved at the third plenary session,  
11 April 1972)



RESOLUTION VII

EPIDEMIOLOGICAL SURVEILLANCE OF  
VENEZUELAN EQUINE ENCEPHALITIS

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

Having considered the report presented by the Pan American Zoonoses Center on the steps that have been taken to establish a Venezuelan equine encephalitis epidemiological surveillance service, pursuant to Resolution XVI of the IV Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control; and

Recognizing that there is need to carry out broader epidemiological studies on Venezuelan equine encephalitis, and that a continuing and expeditious exchange of information on cases found, as well as the development of a surveillance service for the Americas, is indispensable both for this purpose and for the timely adoption of control measures,

RESOLVES:

1. To express its satisfaction at the establishment of a Venezuelan equine encephalitis epidemiological surveillance service by the Pan American Zoonoses Center.
2. To recommend to all the countries participating in this important reporting system that they submit data on Venezuelan equine encephalitis to the Pan American Zoonoses Center on a regular basis.

3. To request that every necessary endeavor be made to coordinate efforts among the national agriculture and health agencies to expand and improve their reporting systems.

4. To stress once again that coordination is equally necessary among the various workers in the countries who are carrying out or who plan to carry out research on the disease.

RESOLUTION VIII

FOOT-AND-MOUTH DISEASE CONTROL PROGRAMS

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

Having considered the final report of the XXIX Seminar of the Pan American Foot-and-Mouth Disease Center (Document RICAZ5/5), especially its considerations on vaccine research, production, and control and on the proposal to organize a South American Foot-and-Mouth Disease Committee;

Recognizing the desirability of intensifying and expanding research activities directed toward improved support of campaigns against this disease; and

Bearing in mind that most of the South American countries, despite their sizable production levels of foot-and-mouth disease vaccines, still do not have sufficient numbers of lots of controlled efficacy,

RESOLVES:

1. To request the Pan American Health Organization to take steps toward creating, promoting, and coordinating the South American Foot-and-Mouth Disease Committee recommended by the XXIX Seminar of the Pan American Foot-and-Mouth Disease Center, which Committee, to be composed of a representative from each country affected by the disease and headquartered at

the Pan American Foot-and-Mouth Disease Center in Rio de Janeiro, Brazil, would have the specific function of reviewing annually and coordinating activities carried out at the hemispheric level against foot-and-mouth disease.

2. To recommend that the South American Foot-and-Mouth Disease Committee set priorities and direct, coordinate, and evaluate research at the hemispheric level in support of campaigns against the disease.

3. To recommend that the Member Countries of the Committee coordinate their activities with those of the Technical Committee on Animal Health (COTERSA), pointing out the desirability of strengthening and broadening its objectives in order to achieve improved standardization in the diagnostic and control methods that are recommended for programs of regional interest.

4. To urge those countries that have not already done so to work progressively toward official control of foot-and-mouth disease vaccine efficacy until such time as they have achieved full control of all lots produced, in accordance with the standards and methods indicated by the Pan American Foot-and-Mouth Disease Center.

5. To suggest that the Member Countries of the Committee adopt, as a frame of reference for their activities, the report "Situation of the National Programs for Combat and Prevention of Foot-and-Mouth Disease and Vesicular Stomatitis in the Americas: Five-Year Period 1967-1971" (Document RICAZ5/18).

RESOLUTION IX

ORGANIZATION OF ANIMAL HEALTH STATISTICS SERVICES

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

Having resolved in previous meetings to recommend that the countries establish statistical services on animal health (III Meeting, Resolution XIV, and IV Meeting, Resolution IX) and that the governments participate in reporting systems in order to establish and improve rabies epidemiological surveillance services (II Meeting, Resolution VII; III Meeting, Resolution XVI; and IV Meeting, Resolution VIII) and foot-and-mouth disease epidemiological surveillance services (I Meeting, Resolution I; III Meeting, Resolution XIV; and IV Meeting, Resolution VII);

Considering that some countries do not yet have regular statistics systems for covering the various problems of animal health, owing to which they have had to implement rudimentary methods for the reporting of those diseases, and considering the difficulties that some of the countries are currently experiencing in providing data to the Venezuelan equine encephalitis epidemiological surveillance service (IV Meeting, Resolution XVI);  
and

Recognizing that statistics services are the essential basis for epidemiological studies and for the administration and evaluation of control

and/or eradication programs, bearing in mind, particularly, the favorable results achieved from the application of statistical methods in the animal health program of the Ministry of Agriculture and Livestock of Mexico and in the animal health program of the State of Rio Grande do Sul, of the Ministry of Agriculture of Brazil, and the Pan American Health Organization,

RESOLVES:

1. To express its recognition of the efforts that have been carried out to date by the Pan American Health Organization, through the Pan American Foot-and-Mouth Disease and Zoonoses Centers and its veterinary services in general.
2. To urge the governments once again to put standards into effect for the establishment of health statistics units and the improvement of those already in existence in the countries.
3. To request the Pan American Health Organization to organize courses on the application of statistical methods in animal health, utilizing as a demonstration area the statistical services in animal health of the Ministry of Agriculture and Livestock of Mexico and of the State of Rio Grande do Sul, Brazil, in order to supplement the technical assistance that it is providing to the countries in this field.

(Approved at the fifth plenary session,  
12 April 1972)

RESOLUTION X

COMMUNITY EDUCATION IN ANIMAL HEALTH

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

Recognizing the importance of obtaining the necessary support of the the community, especially in rural areas, for the proper development of animal health programs;

Considering the need to mobilize community assistance in order to prevent, control, and eradicate foot-and-mouth disease in the Americas; and

Bearing in mind that a seminar on techniques for educating the community to participate in foot-and-mouth disease prevention and control programs is under study, to be held in Bogota, Colombia, during the latter part of 1972 under the auspices of the Pan American Health Organization, with the possible collaboration of the Inter-American Institute of Agricultural Sciences, the Inter-American Development Bank, and the Colombian Institute for Agriculture and Livestock,

RESOLVES:

1. To urge the countries that have not already done so to establish health education units as part of their campaigns against animal diseases.

2. To stress once again the importance of the proposed seminar for national foot-and-mouth disease programs, and to recommend that the countries endeavor to send technical personnel responsible for animal health education activities to this meeting.

3. To commend the Inter-American Institute of Agricultural Sciences, the Inter-American Development Bank, and the Colombian Institute for Agriculture and Livestock for their possible collaboration with PAHO in the holding of the seminar.

(Approved at the fifth plenary session,  
12 April 1972)



RESOLUTION XI

DEVELOPMENT OF NATIONAL LABORATORIES FOR DIAGNOSIS  
AND CONTROL FOR ANIMAL HEALTH PROGRAMS

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

Taking into account the information provided this meeting, which calls attention to the need for the countries to devote intensive efforts to the development of national laboratories for diagnosis and for the control of biological products, considered to be essential requisites for the effective implementation of campaigns against the zoonoses and other animal diseases;

Considering that an accurate diagnosis of these diseases is of key importance in the protection of the countries' large investments in livestock development programs and in the safeguarding of human health against the zoonoses; and

Considering that a national laboratory for diagnosis and for the control of biological products should be staffed with personnel fully trained in the most modern and appropriate techniques and supported with the necessary resources to assure the continuity of effective action,

RESOLVES:

1. To recommend that the governments establish, or strengthen, national laboratories for diagnosis and for the control of biological products, in accordance with the needs of the countries.
2. To request the countries whose laboratory services may so require, to make use of regional laboratories in order to secure a rapid, accurate diagnosis.
3. To recommend that those countries that consider it desirable request financial assistance from the international lending agencies to design, construct and equip their national laboratories for diagnosis and for the control of biological products, or make provision for this requirement in their loan applications for national zoonoses control programs.
4. To express its appreciation to the Pan American Health Organization for the training in diagnosis and the control of biological products that it has been providing through the Pan American Zoonoses Center, and to request that it continue and expand this assistance, which is so important for effectively combating the principal diseases that endanger the health and the economies of the countries.
5. To request the Pan American Health Organization to collaborate with the countries of the Caribbean area in a study of existing diagnostic laboratories in that area, with a view to attaining internationally acceptable

criteria and establishing a diagnostic and reference laboratory for the control of biological products, whose activities will be coordinated with the Pan American Foot-and-Mouth Disease and Zoonoses Centers.

(Approved at the fifth plenary session,  
12 April 1972)

RESOLUTION XII

GUIDELINES AND CRITERIA FOR THE PREPARATION AND EVALUATION  
OF TUBERCULOSIS CONTROL PROGRAMS

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

Having studied in detail the document "Guidelines for the Preparation  
of Plans for Programs of Bovine Tuberculosis Eradication" and "Principles  
and Technical Criteria for the Conduct and Evaluation of Bovine Tuberculosis  
Eradication Programs" (Document RICAZ5/3), prepared by the Study Group on  
Bovine Tuberculosis convened by the Pan American Health Organization pur-  
suant to Resolution XIX of the IV Inter-American Meeting on Foot-and-Mouth  
Disease and Zoonoses Control;

Recognizing that these documents set forth the standards and criteria  
considered, by current knowledge, to be the most appropriate for planning  
and implementing national bovine tuberculosis eradication programs, seeking  
to establish uniform techniques and procedures that would be most practi-  
cable from the multinational point of view; and

Considering that these Guidelines and Criteria are highly useful  
for the orientation of campaigns against bovine tuberculosis, which consti-  
tutes a serious hazard to health, causes considerable economic damage to  
the livestock industry, and hampers the commercial trade of animals among  
the countries,

RESOLVES:

1. To express its appreciation to the members of the Study Group on Bovine Tuberculosis for its praiseworthy efforts in the preparation of the Guidelines and Criteria, which will greatly benefit the action of the countries in the field of tuberculosis.
2. To approve the Guidelines and Criteria for bovine tuberculosis control and eradication programs appearing in Document RICAZ5/3, and to recommend that the governments take steps toward applying these standards and principles in the planning and execution of their respective programs, as well as measures to facilitate the preparation of requests for financial assistance.
3. To recommend that those countries that are planning campaigns for the eradication of bovine tuberculosis endeavor to coordinate their efforts, insofar as possible, with those of the other countries of the same region with a view to achieving appropriately standardized techniques, methods, and criteria, for which purpose the recommended Guidelines and Criteria should be taken as a basis.

(Approved at the fifth plenary session,  
12 April 1972)

RESOLUTION XIII

COURSE ON ANIMAL HEALTH PLANNING

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

Having noted the success of the First Course on Animal Health Planning, in which an outstanding group of veterinarians obtained valuable information and training in disciplines basic to the programming of health campaigns, indispensable for safeguarding the livestock production in the Americas, one of the world's most important food resources,

RESOLVES:

1. To thank the Pan American Foot-and-Mouth Disease and Zoonoses Centers and the PAHO/WHO Department of Human and Animal Health for having organized the First Course on Animal Health Planning, and to stress the need that this activity be continued.
2. To express its recognition to the director, instructors, and advisers of the Course for their dedication and for the ability they demonstrated in imparting their knowledge to the participants.
3. To recommend to the appropriate authorities in the countries that they give the personnel who have participated in these courses the opportunity to carry out activities that will make use of the knowledge they have acquired.

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XIV

PERSONNEL TRAINING IN COUNTRIES DECLARED FREE  
OF FOOT-AND-MOUTH DISEASE

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

Considering the all-important need for countries of the Hemisphere  
declared free of foot-and-mouth disease to have technical and paratechnical  
personnel trained in its prevention;

Recognizing that seminars on this subject held in San Jose, Costa  
Rica, have contributed effectively to a better understanding of the problem  
and of its effects, in the event of an outbreak, on the economies of coun-  
tries already free of the disease; and

Bearing in mind the importance of activities for the training of  
technical and auxiliary personnel for the prevention of foot-and-mouth  
disease,

RESOLVES:

To recommend that the Pan American Foot-and-Mouth Disease Center's  
technical assistance be increased in countries declared free of the disease,  
in order to provide education and training for technicians in prevention  
and surveillance, providing the necessary facilities for carrying out  
further seminars on the subject.

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XV

USE AND CONTROL OF PESTICIDES

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

Recognizing that programs for the production of food for human and animal consumption, as well as activities for the control of certain diseases that affect the agricultural and public health sectors, require the use of pesticides;

Considering that intoxication frequently results from the application and indiscriminate use of pesticides, or from their residual effects, constituting an increasingly greater hazard to man, animals, and the environment;

Bearing in mind that the uncontrolled use of pesticides has serious repercussions on the international trade of food, especially of animal origin, causing economic difficulties for the exporting countries;

Recognizing that it is necessary for the countries to have adequate legislation for controlling the sale and use of pesticides in order to safeguard health and the national economy, and that they should have effective coordination among the official agencies concerned with the problem;



Bearing in mind that DDT is currently the most effective weapon for combating malaria in rural areas, but that, at the same time, there is the risk that its use in agriculture may produce resistance in the vectors;

Considering that it is essential, also, for the countries to have laboratory services adequate for the control of pesticides and for the study of their effects in the particular environment, and for them to have properly trained personnel; and

Having considered the papers presented at this meeting under the topic "Pesticides: Their Effects on Human and Animal Health and on the Environment" (Documents RICAZ5/7, 9, 16, 17, 20, and 22),

RESOLVES:

1. To express its recognition to the Pan American Health Organization and to the authors of the papers presented on the topic, "Pesticides: Their Effects on Human and Animal Health and on the Environment."
2. To recommend to those Governments that have not already done so that they establish pesticide control programs as soon as possible that will provide adequate standards for safeguarding human and animal health and for avoiding environmental pollution; that they set up at the same time enforcement mechanisms in this regard; and that they endeavor to obtain the participation of the appropriate international agencies.

3. To promote educational programs on the subject of pesticides aimed at providing knowledge on their proper and safe use, this effort to be carried out through community education programs with the active participation of the people.

4. To request the ministries of agriculture, through their animal health officers, to encourage universities to include these subjects in their educational programs related to agriculture and livestock development.

5. To recommend that the countries carry out studies and set proper standards for the application of minimum useful quantities of pesticides in the Hemisphere.

6. To recommend that the governments establish regulations for controlling the collection and disposal of unused pesticides, their containers, and corresponding contaminated material.

7. To request the countries to study the possibility of restricting the use of DDT to essential agricultural uses and for diseases that affect human health, where there is not an equally effective substitute.

8. To request the governments to promote among the ministries of agriculture, health, and education measures for coordination considered to be indispensable in the rational use of pesticides in all areas of their use.

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XVI

TRAINING OF PERSONNEL FOR ANIMAL HEALTH PROGRAMS

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

Bearing in mind the increasing development of programs for the prevention, control, and eradication of the principal diseases of domestic animals;

Recognizing the urgent need for trained personnel at various levels to carry out such programs;

Considering the limited number of centers that have been organized to provide the necessary training for the programs being carried out by the countries; and

Taking note of the efforts of the Pan American Health Organization in the field of veterinary medical education, particularly in assistance to the countries in the preparation of requests for financial support from international agencies,

RESOLVES:

1. To request the Pan American Health Organization to give high priority to activities for the training of personnel, at all levels, who are responsible for animal health programs in the countries, and, in certain regions

such as the Caribbean, to coordinate with the countries the planning and promotion of a school of veterinary medicine.

2. To include the topic "Training of Personnel in Programs for the Prevention, Control, and Eradication of Domestic Animal Diseases" on the agenda of the VI Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control.

3. To recommend that the countries intensify their training programs, making use of all the national resources available.

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XVII

VOTE OF THANKS TO THE GOVERNMENT OF MEXICO

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

Recognizing that the outstanding cooperation provided by the Government of Mexico has made it possible to hold the present meeting, and that the generous support and active participation given to its organization have contributed in great measure to the successful outcome of the deliberations,

RESOLVES:

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

(Approved on the sixth plenary session,  
12 April 1972)

RESOLUTION XVIII

PLACE OF THE NEXT MEETING

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

Considering the importance of animal health in the production of food-stuffs for human consumption and in the economic development of the countries of the Americas; and

Bearing in mind that Resolution XIX of the XVII Meeting of the PAHO Directing Council authorized the Director of the Pan American Sanitary Bureau to convene annually a meeting of the ministers of agriculture to review the programs of the Pan American Foot-and-Mouth Disease and Zoonoses Centers and to discuss matters of mutual interest,

RESOLVES:

1. To express its satisfaction with the interest shown by the governments of the Americas in the present meeting and in the previous meetings held at Washington, D.C., Rio de Janeiro, Buenos Aires, and Lima, pointing out that they have led to a valuable exchange of technical and scientific information among the participants.
2. To emphasize once again the importance of providing the governments of the Hemisphere with the opportunity to exchange ideas and experiences,

at regular intervals, in the field of animal health, in furtherance of the health and development of their peoples.

3. To express its satisfaction with the work being carried out by the Pan American Health Organization and its Pan American Foot-and-Mouth Disease and Zoonoses Centers, in the planning and execution of campaigns against foot-and-mouth disease and the zoonoses in various countries of the Hemisphere and with their coordination activities at the national and regional levels.

4. To thank the Government of Colombia for its kind invitation to serve as host for the next meeting, and to recommend to the Director of the Pan American Sanitary Bureau that he convene the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control, in the city of Bogota in 1973.

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

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XIX

TRAINING OF PERSONNEL IN THE CONTROL OF THE INTERNATIONAL  
MOVEMENT OF ANIMALS AND ANIMAL PRODUCTS

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

Recognizing the efforts that have been made by the Pan American  
Health Organization to learn about and disseminate information on problems  
caused by the international movement of animals and animal products;

Bearing in mind the provisions approved in previous Inter-American  
Meetings on Foot-and-Mouth Disease and Zoonoses Control, especially the  
I (Resolution IV), II (Resolution IV), and III (Resolution XII) Meetings;

Considering the need to improve existing services in the countries,  
both from the administrative and legal standpoint and in terms of technical  
infrastructure (development of diagnostic and research laboratories, re-  
porting, registration and publication of data at national and international  
levels, establishment of quarantine stations, etc.);

Bearing in mind that the development of these services has not kept  
pace with technological progress, either in dealing with current means of  
transportation or in the recognition of exotic diseases whose introduction  
in areas or countries free of them might result in incalculable economic  
and health losses; and



Considering the importance that has been given to these problems in the symposia held in 1968 (San Antonio, Texas) and 1971 (Mexico) under the sponsorship of the Pan American Health Organization,

RESOLVES:

1. To take note of the efforts and accomplishments of the Pan American Health Organization in understanding the problems caused by the international movement of animals and animal products.
2. To endorse once again the resolutions adopted in previous Inter-American Meetings, calling upon the countries to lend all necessary support to the improvement of services for controlling the international movement of animals and products of animal origin.
3. To recommend that the Pan American Health Organization promote courses for the training of personnel in laboratory diagnosis, quarantine practices, epidemiological surveillance, administration, and legislation.
4. To recommend that a panel discussion on the legal, administrative, and technical aspects of control of the international movement of animals and products of animal origin, and on the prevention of exotic diseases, be included in the agenda of the VI Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control; at this panel, after conducting a study of the current control and enforcement situation, a draft agreement will be formulated, to be submitted to the countries for

their consideration, in which standards and measures for controlling the dissemination of diseases and the introduction of exotic diseases in the Hemisphere would be set forth.

5. To request the Pan American Health Organization to coordinate the actions of governments in order to carry out a study of the capacity of the laboratories for the diagnosis of exotic diseases existing in the countries of the Americas, and that the results of the study be presented to the VI Inter-American Meeting.

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XX

ELECTION OF THREE MEMBER GOVERNMENTS TO THE TECHNICAL  
COORDINATING COMMITTEE FOR THE REGIONAL PROJECT OF THE  
PAN AMERICAN ZOONOSSES CENTER

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

Having heard with satisfaction the report on the approval of a loan  
by the United Nations Development Program for the new Regional Program of  
the Pan American Zoonoses Center; and

Recognizing that this Regional Program should have a technical com-  
mittee to coordinate its activities,

RESOLVES:

To elect the Governments of Brazil, Guatemala, and Mexico to serve  
on the Technical Coordinating Committee for the Regional Project of the  
Pan American Zoonoses Center.

(Approved at the sixth plenary session,  
12 April 1972)

RESOLUTION XXI

SANITARY CONTROL OF MEAT AND OTHER PRODUCTS OF ANIMAL ORIGIN

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

Recognizing that in some countries of the Hemisphere the sanitary inspection of meat and other products of animal origin is still under the responsibility of municipal governments and other agencies not directly under the ministry of agriculture; and

Considering that this procedure deprives the animal health agencies of a valuable source of daily information on national nosology and its geographic distribution, which could well be used to strengthen the countries' statistical services used in the campaigns against animal diseases,

RESOLVES:

To suggest that the respective governments give consideration to the most appropriate measures whereby the sanitary control of products of animal origin may be performed by official agencies at the national level.

(Approved at the seventh plenary session,  
13 April 1972)

RESOLUTION XXII

PROGRAMS FOR THE CONTROL OF BRUCELLOSIS AND BOVINE TUBERCULOSIS  
IN THE CENTRAL AMERICAN ISTHMUS

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

Considering that brucellosis and tuberculosis cause heavy economic  
losses and, in addition, have an impact on public health in the countries;

Bearing in mind that the affected countries are carrying out efforts,  
for the most part on an isolated basis, to control and/or eradicate these  
diseases;

Recognizing that to this end the standards and programs being devel-  
oped toward these common objectives should be planned and coordinated,

Considering that the countries in the Central American isthmus have  
initiated, or are in the stage of initiating, programs for the control and  
eradication of these diseases;

Bearing in mind that this area has problems and interests in common,  
and that it is therefore necessary to coordinate the activities of the res-  
pective programs; and

Noting that at present there are countries in the Central American  
isthmus that are preparing loan requests for presentation to the

Inter-American Development Bank for financial assistance in their campaigns against brucellosis and tuberculosis,

RESOLVES:

1. To urge the governments of the countries to coordinate, with the technical support of the Pan American Zoonoses Center, their activities for the control and eradication of brucellosis and tuberculosis.
2. To request the Pan American Zoonoses Center to carry out a study of the standards and conditions for programs on brucellosis and tuberculosis in the countries of the Central American isthmus, that should be coordinated and applied uniformly throughout the region.
3. To recommend that the result of this study, and the corresponding recommendations, be communicated to the VI Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control.

(Approved at the seventh plenary session,  
13 April 1972)

RESOLUTION XXIII

COLLABORATION OF FAO IN FOOT-AND-MOUTH DISEASE  
CONTROL PROGRAMS

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

Considering the increasing development of programs for the prevention,  
control, and eradication of foot-and-mouth disease; and

Recognizing that in response to Resolution XX of the IV Inter-American  
Meeting on Foot-and-Mouth Disease and Zoonoses Control, joint action with  
the Food and Agriculture Organization of the United Nations (FAO) on matters  
falling within the competence of both organizations has been initiated by  
the integration by FAO of a regional adviser in the Pan American Foot-and-Mouth  
Disease Center,

RESOLVES:

To commend the assignment of the regional adviser by FAO to the Pan  
American Foot-and-Mouth Disease Center, and to recommend that it increase its  
support to Member Countries for the control and eradication of foot-and-mouth  
disease through the Center, by assigning additional specialists.

(Approved at the seventh plenary session,  
13 April 1972)

RESOLUTION XXIV

PREVENTION OF FOOT-AND-MOUTH DISEASE IN AREAS  
OF THE AMERICAS NOW FREE OF THE DISEASE

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

Considering that with the constant expansion of communications and  
the increase in international trade in animals and products of animal origin,  
there will be an ever-increasing risk that foot-and-mouth disease may be  
introduced in countries free of the disease;

Recognizing that in some of these countries resources and services  
for the prevention of animal diseases are inadequate;

Bearing in mind the provisions of Resolution VIII of the XIX Meeting  
of the Intra-Regional Committee for Agriculture and Livestock, which pro-  
poses the holding of consultative meetings between the International Regional  
Organization for Agriculture and Livestock, the Pan American Health Organ-  
ization, and the Government of Colombia in order to establish a program for  
the prevention of foot-and-mouth disease in the northwestern section of  
Choco, Colombia, and of the recommendations made by the Scientific Advisory  
Committee of the Pan American Foot-and-Mouth Disease Center at its meeting  
in 1971;



Taking into account that the forthcoming completion of the Pan American Highway through the Darien Gap will increase the risk of foot-and-mouth disease virus being introduced in areas now free of the disease;

Recognizing the need to establish an animal health program in order to diminish this risk; and

Bearing in mind that the Government of Colombia is carrying out a foot-and-mouth disease prevention program in the northwestern section of Choco, and that the Government of Panama is conducting a similar effort with the economic support of the member countries of the International Regional Organization for Agriculture and Livestock,

RESOLVES:

1. To stress to the countries once again the urgent need to strengthen their official services of epidemiological surveillance, port inspection, and animal movement and quarantine until they reach a level adequate to detect and prevent the introduction of animal diseases and to eradicate them in the event that they should appear.
2. Without affecting the negotiations that the Governments of Colombia or Panama are currently and directly conducting, to recommend to PAHO that it immediately call together representatives of Colombia, Panama, OIRSA, IDB and IBRD and together evaluate during a period of not more than three months, the different technical aspects concerned with the prevention of foot-and-mouth disease in the northwestern area of Choco, Colombia, and of the Darien in Panama and the dangers for animal health that the construction of the

Pan American Highway may bring. The corresponding study should be presented to the respective Ministers of Agriculture of Colombia and Panama for their consideration, no later than 15 August 1972.

3. To recommend to those countries free of type C foot-and-mouth disease that they take the necessary steps to avoid its introduction and spread, in view of the serious hazard it implies for them and for the countries in the area declared free of foot-and-mouth disease.

(Approved at the seventh plenary session,  
13 April 1972)

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

DONE in Mexico, D.F., Mexico, this thirteenth day of April, nineteen hundred and seventy two. 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.

---

Mr. Manuel Bernardo Aguirre  
President of the Meeting  
Representative of Mexico

---

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



PAN AMERICAN HEALTH ORGANIZATION

CE68/5 (Eng.)  
ANNEX IV

# V INTER-AMERICAN MEETING ON FOOT-AND-MOUTH DISEASE AND ZONOSSES CONTROL

WORLD HEALTH ORGANIZATION

MEXICO CITY, MEXICO, 10-13 APRIL 1972

## Provisional Agenda Item 7

RICAZ5/6 (Eng.)  
25 February 1972  
ORIGINAL: SPANISH

PROGRAM AND BUDGET OF THE  
PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER  
FOR 1972, PROPOSED ESTIMATES FOR 1973, AND  
PROVISIONAL DRAFT FOR 1974

PROGRAM AND BUDGET OF THE  
PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER  
FOR 1972, PROPOSED ESTIMATES FOR 1973, AND  
PROVISIONAL DRAFT FOR 1974

INTRODUCTION

The major economic significance and the complex and difficult control of the disease were the principal reasons for the establishment of the Pan American Foot-and-Mouth Disease Center, which was set up in 1951 upon the request of certain countries of the Organization of American States. An agreement was signed between the Government of Brazil and the Pan American Health Organization; the Center started to function in 1951 as a project of the OAS Technical Cooperation Program, with PASB as administering agency, and it continued in this form until 30 June 1968. From that date on, the Center became a regular program of the Pan American Health Organization. The Pan American Foot-and-Mouth Disease Center is financed by the Member Governments as Part VI of the regular budget of the Pan American Health Organization, as recommended by the 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, October 1967).

The decisions and resolutions of these Governing Bodies were confirmed by the First Inter-American Meeting, at the Ministerial Level, on the Foot-and-Mouth Disease and Zoonoses Control, which was held at the Headquarters of the Pan American Health Organization, Washington, D.C., from 8 to 11 April 1968. At the Fourth Meeting, which was held in Lima, Peru, from 5 to 7 April 1971, the Ministers (Secretaries) of Agriculture of the American Republics and the Representatives of France, the United Kingdom, and the Kingdom of the Netherlands reviewed and recommended the approval of the program and budget estimates of the Center for 1972 and the provisional draft for 1973, and recognized the importance of the activities embodied in the programs and budgets. These recommendations are reflected in Resolution IV of the above-mentioned Meeting, which reads as follows:

RESOLUTION IV

PROPOSED PROGRAM AND BUDGET ESTIMATES OF THE  
PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER FOR  
1972 AND PROVISIONAL DRAFT FOR 1973

THE IV INTER-AMERICAN MEETING, AT THE MINISTERIAL LEVEL,  
ON FOOT-AND-MOUTH DISEASE AND ZOONOSIS CONTROL,

Taking into account that foot-and-mouth disease is a serious obstacle to the development of the livestock industry and to the economic progress of the affected countries, as well as a constant risk for those countries that are free of the disease;

Considering the growing interest on the part of the Governments in developing national and regional programs for the prevention and control of this disease, based on well-defined and coordinated lines of action;

Recognizing that the Pan American Foot-and-Mouth Disease Center performs a vital and effective role in supporting such programs through its assistance, research, and training services; and

Having studied in detail the proposed program and budget estimates for 1972 and the provisional draft for 1973,

RESOLVES:

1. To express its full support of the Pan American Foot-and-Mouth Disease Center and of its action program designed to benefit the countries of the Hemisphere.
2. To reaffirm the need for the Center to continue and to expand its activities insofar as technical advisory services and personnel training are concerned, these being indispensable for the planning, execution, and coordination of national and regional programs for the prevention and control of foot-and-mouth disease.
3. To express its appreciation to the Government of Brazil for its unfailing goodwill and continuing support to the activities of the Center.

4. To recommend to the XX Meeting of the Directing Council of the Pan American Health Organization the approval of the proposed program and budget estimates of the Center for 1972 as set forth in Document RICAZ4/5.

5. To state that the provisional draft of the program and budget estimates for 1973 includes assistance, training, and research activities necessary for the improved implementation of the foot-and-mouth disease prevention and control programs being conducted by the countries, and that the provisional draft will be submitted to further study in 1972 by the V Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control and by the Executive Committee and the Directing Council of the Pan American Health Organization.

#### THE NATURE OF THE PROBLEM

Foot-and-mouth disease is the most important animal disease in the countries it affects, and remains a constant threat to the other countries in this Hemisphere that are free of it. Its great economic significance and the difficult and complex measures required for controlling it were the main reasons for the establishment of the Center. The chief factors involved in foot-and-mouth disease may be summarized as follows:

1. The highly contagious nature of the disease and the rapidity with which it spreads among cattle, hogs, sheep, and other cloven-hoofed animals.
2. The financial losses suffered by agriculture as a result of the disease.
3. The harm it does to the production of animal protein and the relation between this and the severe problem of protein malnutrition in the growing human population of the Americas.
4. Losses suffered by national economies through the closing of export markets, since countries that are free of the disease cannot run the risk of importing animals or animal products from countries that are affected by it.

In recent years the effects of the disease on the economy and development of countries that are in large measure dependent upon livestock production has been fully recognized, as has been the urgent need to launch national and multinational campaigns for foot-and-mouth disease control. As a result, the control of this disease in South America has become the major livestock health protection program. A million livestock owners are taking a direct part in it, as well as more than a thousand professional personnel supported by ten times as many auxiliary personnel. Approximately 75 million

cattle were systematically vaccinated in 1970 and another 23 million routinely vaccinated. It is estimated that the government sectors alone invested approximately \$15 million in this operation in 1970.

#### PURPOSE AND OBJECTIVES

The initial purpose was to provide the countries with technical assistance and a diagnostic and virus-typing service. But it was understood from the outset that if a Center serving the whole Continent was to be established, the assistance that it should give was much greater in scope than that of routine diagnostic service. The purpose therefore became that of providing countries affected by the disease with assistance in their efforts to control it, and countries free of it with assistance in implementing preventive measures. To achieve the above-mentioned purpose, the Center has three main divisions (research, training and information, and field advisory services) with the following objectives:

##### I. RESEARCH, DIAGNOSIS, AND REFERENCE

1. Identification and study of the characteristics of strains of foot-and-mouth disease and vesicular stomatitis viruses causing outbreaks, as well as those used for the production of vaccines and in potency control. It serves as the reference laboratory for the countries of the Hemisphere.
2. Study of new foot-and-mouth disease viruses and improvement of inactivated and modified live virus vaccines with a view to obtaining better and more lasting immunity.
3. Preparation and maintenance of a collection of various subtypes of foot-and-mouth disease virus considered to be of epidemiological importance and adapted to the Frenkel method, to cell lines, and to rabbit embryo organs, for dispatch to the countries in the event of emergencies in their vaccine production.
4. Study of new methods for ascertaining the effectiveness, uniformity, simplification, and adaptation of existing vaccines to conditions in the Hemisphere.
5. Solution of problems arising from the effects of the disease on international trade in meat and meat by-products, such as that of the survival of the virus and study of carriers.
6. Basic studies of the biological and physicochemical characteristics of foot-and-mouth disease and vesicular stomatitis viruses.



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

## II. TRAINING AND INFORMATION

1. Organization and conduct of international seminars.
2. Organization and conduct of national courses.
3. Participation of the staff of the Research and Field Advisory Services at seminars, courses, and meetings organized by other national or international institutions.
4. Award of fellowships for individual training at the Center or in other institutions.
5. Provision of information available about the epizootiology of vesicular diseases.
6. Provision of library services and up-to-date bibliographies on specific aspects of these diseases.

## III. FIELD ADVISORY SERVICES

1. Promotion and assistance in the planning of national foot-and-mouth disease programs.
2. Studies of technical and administrative methods for the control of foot-and-mouth disease through demonstration pilot areas.
3. Advisory services to the countries in the preparation of loan applications for foot-and-mouth disease control campaigns to be submitted to international lending agencies.
4. Promotion of intercountry coordination through bilateral, regional, or multilateral meetings and agreements for the control and prevention of foot-and-mouth disease.
5. Advisory services on the organization and conduct of preventive programs in disease-free countries.
6. Field studies on the most effective preventive and control methods, and evaluation of national campaigns.

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

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

	<u>Research, Diagnosis, Reference</u>	<u>Training</u>	<u>Field Advisory Services</u>
1972	52.9%	8.1%	22.8%
1973	51.9%	8.4%	22.7%
1974	53.4%	8.2%	23.3%

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

#### ADMINISTRATIVE AND TECHNICAL ORGANIZATION OF THE CENTER

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

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

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

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

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

Every two years the Scientific Advisory Committee of the Center, whose members are persons of international repute, meet to discuss the various projects in progress or being planned with the Director and the professional technical staff.

## ACTIVITIES - METHODS - RESULTS

### I. OFFICE OF THE DIRECTOR

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

### II. RESEARCH ACTIVITIES

#### 1. Diagnosis and Reference

The Center serves as the reference laboratory for the Americas for the typing and subtyping of foot-and-mouth disease and vesicular stomatitis viruses. Since its establishment it has examined close to 11,000 vesicular disease specimens from 19 countries in the Continent which are affected or free of foot-and-mouth disease. During 1971, 720 specimens from countries in the affected area were typed and subtyped, and the results of field samples, which numbered 421, are shown in Table II. The number of specimens is expected to increase substantially in 1973 and 1974, inasmuch as the countries are stepping up their foot-and-mouth disease control campaigns. The countries now have available to them an increasing number of professional personnel who have been trained at the Center and are familiar with the techniques for the diagnosis of foot-and-mouth disease and vesicular stomatitis, in recognition of the fundamental role played by virus subtypes in the epidemiology of the disease. Accordingly, the Center will have to expand its subtyping studies so as to be in a position to advise the countries regarding the strains that should be used in vaccine production and in tests for ascertaining their effectiveness.

Classification studies performed at the Diagnosis and Reference Laboratory of the Center were corroborated by the World Reference Laboratory for foot-and-mouth disease virus, Pirbright (Great Britain), and the following numbering was assigned to South American foot-and-mouth disease virus strains:

Subtype	Strain
A <sub>29</sub>	A-Peru/69
A <sub>30</sub>	A-Uruguay/68
A <sub>31</sub>	A-Colombia/69
A <sub>32</sub>	A-Venezuela/70
C <sub>5</sub>	C-Argentina/69

The Center supplies reference sera and viruses to national diagnosis and control laboratories. During 1971 all the countries in the affected area received various biological materials for diagnosis, research, and production and testing of vaccines, including sufficient hyperimmune guinea pig sera for 600,000 complement-fixation tests. In view of the increase in diagnostic activities in the countries, it is expected that it will be necessary to substantially increase this amount in the years ahead.

During 1971, 1,196 specimens were examined in the course of the different research projects of the Center.

With reference to typing and subtyping of vesicular stomatitis virus, the Center examined, during 1971, 171 specimens from the countries of Central America and Panama, of which 149 were identified as vesicular stomatitis virus. The results are shown in Table III. The marked and steady increase of samples received at the Center during 1971, from Central America and Panama, is expected to continue in 1972 and following years, since the countries of that area are in the process of improving their surveillance of vesicular diseases. It must be emphasized that the immediate diagnosis of all specimens from those areas is essential in order to permit the prompt adoption of the necessary sanitary measures. The serious economic consequences of an outbreak of foot-and-mouth disease in those countries point up the urgency of early diagnosis.

During 1971 the Center received 504 serum samples from Jamaica. The studies performed with them did not show the presence of antibodies against foot-and-mouth disease or vesicular stomatitis viruses.

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

1972	18.9%
1973	18.9%
1974	18.6%

## 2. Inactivated Vaccines

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

These considerations, together with the fact that an adequate vaccine for immunizing hogs is not commercially available and the need for better knowledge of the behavior of vaccines in sheep, has been the basis for experiments with an inactivated vaccine with an oil adjuvant. These were undertaken in collaboration with the Plum Island Animal Disease Research Laboratory of the Department of Agriculture of the United States of America.

The results revealed that a good level of immunity had been obtained with this vaccine in sheep for a period of not less than one year. In pigs, serious lesions have occurred at the point of inoculation. These reactions are a problem calling for a thorough study before this type of vaccine can be put into routine use in pigs. The results obtained in cattle are very promising and point to the possibility of only two annual vaccinations in cattle, whenever this type of vaccine can be used in campaigns. Primary vaccinates showed a good level of protection six months after vaccination, and the challenge performed at 12 months following revaccination showed a good protection.

Preliminary field studies will also be undertaken with this type of vaccine, in collaboration with the Ministry of Agriculture of Brazil. During 1972 and 1973, using the new facilities for industrial production, the necessary studies will be undertaken to put the production of this type of vaccine on an industrial scale.

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

Research was begun on inactivated vaccines produced with virus from unweaned rabbits. Different methods of extracting and purifying these lapinized viruses were studied.

Studies were also made of other adjuvants, including different polyionic substances and polynucleotid complexes.

Special attention was given to studies on the adaptation of foot-and-mouth disease vaccine potency tests in cattle and in guinea pigs under ecological conditions of South America. During 1971 an intensive study was undertaken on serum protection index variation in the evaluation of cattle immunity induced by inactivated vaccines.

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

1972	31.3%
1973	30.7%
1974	30.2%

### 3. Modified Live Virus Vaccines

Modified live virus vaccines have been one of the contributions of the Center to the control of foot-and-mouth disease. Over the years, the Center has acquired great experience in this field. During 1971, research was continued on various clones of modified foot-and-mouth disease virus, and a start was made on the attenuation of various strains by chemical processes, cold mutants, and the selection of plaques. The markers of various virus clones were studied, as was the stability of the genetic characteristics of some modified viruses.

Laboratory studies with cloned specimens of C<sub>3</sub> Resende, A<sub>24</sub> Cruzeiro, and O<sub>1</sub> Campos viruses, some of them performed in collaboration with the Ministry of Agriculture of Venezuela, demonstrated very low pathogenicity and a good immunizing capacity.

A series of clones of the three foot-and-mouth disease virus types is being studied, with a view to obtaining a final product capable of conferring a longer-lasting immunity and giving rise to no pathogenicity problems. Studies are also being made on the genetic stability of the modified strains.

Problems relating to the persistence of modified live virus in different organs and tissues of laboratory animals and in cattle are being made for the purpose of clarifying certain aspects relating to the multiplication of the virus in different organs, the persistence of the virus in primary vaccinates and revaccinated animals, and possible differences in the persistence of the viruses in animals with or without circulating antibodies.

A start was made on the adaptation and modification of various foot-and-mouth disease virus strains which may possibly be of epidemiological importance, and investigations were continued on the rapid attenuation of foot-and-mouth disease virus through mutations produced by chemical agents.

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

1972	23.5%
1973	23.0%
1974	22.6%

4. Carriers

The problem of the survival of foot-and-mouth disease virus in carriers and in products derived from them is one of the most important factors affecting international trade, particularly in South American countries in which livestock production is one of the main sources of foreign exchange.

The Center has been studying this problem and has given special attention to the development of new methods that will make the detection of animal carriers more feasible and economical.

The virus-cell binomium in the host is being studied, as are the conditions influencing the virus-host-environment relationship, since it is not known which factor or factors determine whether a carrier is capable of transmitting the virus.

Advisory services continued being provided during 1971 to the Governments of Brazil and Venezuela in the fulfillment of the tests developed by the Center in order to detect carrier animals in cebu cattle exported from Brazil to Venezuela.

The Center has also initiated studies on the possible role of cattle semen in the carrier system. These investigations are being carried out in collaboration with the pertinent technical departments of the Ministry of Agriculture of Brazil.

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

1972	13.0%
1973	13.6%
1974	13.7%

5. Other Research Studies

In addition to the research described above, the Center is investigating the susceptibility of various cell lines to foot-and-mouth disease virus and to culture media favoring the multiplication of foot-and-mouth disease virus in vitro, endeavoring to obtain more economical sources

for antigen production. The production of interferon in cell cultures and in laboratory animals has also been investigated, as has been the serum antigen-antiantigen phenomenon associated with vesicular diseases of domestic animals, through correlative studies on serum interferon tests. Studies on immunological methods for the detection of antibodies and new techniques for obtaining plaques in tissue cultures as well as on secretory antibodies and non-specific inhibitors have been continued.

The following percentages will be assigned to these research activities:

1972	13.3%
1973	13.8%
1974	14.9%

To achieve the research targets set, it is necessary to make provision in the budgets for 1973 and 1974 for the following international and local staff:

<u>International Staff</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Chief of Laboratory Services	1	1	1
Virologist	1	1	1
Serologist	3	3	3
Research Officer	3	3	3
Biochemist	1	1	1
Immunologist	1	1	1
Research Assistant	2	2	2
<u>Local Staff</u>	<u>114</u>	<u>116</u>	<u>117</u>
Total	126	128	129

There will be no change in the international staff posts in 1973 and 1974 in relation to 1972. In 1973, the local staff will be increased by two laboratory assistants, and in 1974 by a further laboratory assistant.

Supplies and Equipment. In 1973 there will be a slight increase in this item to allow for increased costs, and in 1974 provision is made for the purchase of an ultra-centrifuge.

Contractual Services. In 1973 and 1974 the only change in this item will be to allow for increased costs.



### III. TRAINING

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

Since its establishment, the Center has conducted 29 courses or international seminars, and 657 veterinarians from 33 different countries have attended them or received individual training in various aspects of research and in the control and prevention of foot-and-mouth disease. The Center provides instruction and practical training in laboratory techniques and methods for vesicular diseases and in the production and control of vaccines; in epidemiology, statistics, and animal health planning; and, in coordination with the governmental services of certain countries, in the planning and administration of control campaigns and preventive programs.

From the beginning of 1971, the Epidemiological Report on Foot-and-Mouth Disease and Vesicular Stomatitis is being published fortnightly.

In 1971, the Cuadernos of the Center were replaced by a Boletín, which is now appearing quarterly. In addition to including bibliographical information, it has a section devoted to foot-and-mouth disease control or prevention activities, and a section devoted to the publication of scientific articles and communications.

The modern reproduction and printing equipment, which was purchased and put into operation in 1970, has made it possible for the Center to produce all documents and publications and to print all forms needed for internal use. The press run of these was estimated for 1971 at 2,500 originals and more than 200,000 impressions.

In June 1971, an international seminar on prevention of foot-and-mouth disease was held in San José, Costa Rica, attended by fellows from the countries of Central America and Panama. Another international seminar was held at the Center, in December, dealing with campaigns against foot-and-mouth disease, attended by nine delegates from South American countries and 17 from the Brazilian states that have foot-and-mouth disease campaigns under way.

Close collaboration was given to Argentina and Chile in the preparation and development of a seminar, held in Punta Arenas, Chile, in November 1971, dealing with Foot-and-Mouth Disease Prevention, with special attention to the disease-free area of Patagonia.

National courses were held in Brazil and Surinam.

With regard to individual training, during 1971 22 PAHO fellowships were granted to professional personnel from seven countries, totaling 65.5 fellowship-months, and fellowships for another five professional personnel were provided from other sources.

The construction of the pilot plant for demonstration of industrial production and control of foot-and-mouth disease vaccines started during 1971. This unit will be finished and operational during 1972. Professionals and laboratory technicians of different South American countries will start training in it towards the end of 1972.

In collaboration with the Government of Brazil and the state of Rio Grande do Sul, a series of short courses will be initiated in 1972, in Porto Alegre, for training of field veterinarians working on the various national foot-and-mouth disease campaigns.

In 1972, one international seminar, dealing with the diagnosis of vesicular diseases, will be held at the Center in Brazil, for 10 fellows from 10 South American countries.

Two national courses will be held in Brazil, one in Ecuador, and one in Paraguay.

In 1972, a program of individual training on the protection of disease-free zones will be launched for veterinarians attached to border services in disease-free countries and for persons carrying out similar functions in disease-free areas of infected countries such as Argentine Patagonia and the neighboring region of Chile. An understanding has already been reached with the Panamanian authorities to use the preventive program area for demonstration and training.

For 1972 provision has been made for 24 fellowships, totaling 96 fellowship-months, for 17 countries, including countries in the disease-free and in the infected areas.

In 1973, one international seminar on foot-and-mouth disease vaccine production methods will be held in Rio de Janeiro for 11 fellows from 10 countries.

In the same year national courses will be held for Central American veterinarians in two countries in that area, probably Panama and Guatemala. Veterinarians from neighboring countries will attend as fellows.

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

An international seminar on statistics has been planned for 1974 in Brazil, and will be attended by 11 veterinarians from 10 countries operating foot-and-mouth disease control programs.

In 1974, national courses for countries in the affected area and the places in which courses will be held will be determined in the light of the situation of the various campaigns.

Provision is made in 1974 for 24 fellowships totaling 72 fellowship months.

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

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

Local Staff. There will be an increase of one clerk in 1974.

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

<u>International Staff</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Chief, Training Activities	1	1	1
Publications Officer	1	1	1
Translator	-	1	1
<u>Local Personnel</u>			
Librarian	1	1	1
Secretary	2	2	2
Clerk	1	1	2
Total	6	7	8

#### IV. FIELD ADVISORY SERVICES

##### 1. Countries in the Disease-free Area

The Center assisted countries in the disease-free area in the organization and conduct of preventive programs, training, and the diagnostic services.

The Center's consultant stationed in Panama collaborated with the International Regional Plant and Animal Health Organization (OIRSA) in a study of the evaluation of the inspection and quarantine veterinary services of British Honduras, Costa Rica, El Salvador, Guatemala, Nicaragua, and Panama. It is hoped that the respective reports will help toward solving the organizational and resource problems of the mentioned services.

In a similar activity the consultant stationed in PAHO Zone I visited Guyana, French Guiana, Surinam, Barbados, Grenada, Jamaica, and Trinidad and Tobago. One of the first results of these visits was the initiative to prepare at PAHO a project for the development of professional and auxiliary veterinary education, and another project for diagnostic veterinary laboratories and for animal public health services in Zone I.

The "Plan of Action" to be taken in the event of an outbreak of foot-and-mouth disease was revised and brought up to date, and surveillance of other vesicular diseases in this area was activated with a view to providing prompt and accurate diagnosis. A marked increase in the number of field samples of vesicular outbreaks sent to the Center for diagnosis by the countries of Central America and Panama was observed after the international seminar given in San José, Costa Rica.

Advice was given to the Governments of Panama and Colombia on frontier programs in Darién and Chocó, and delegates of the Center actively participated in the First Animal Health and Foot-and-Mouth Disease Seminar, sponsored by the Inter-American Confederation of Cattlemen in Panama City.

Besides the continuous assistance given by the Center's consultant stationed in Panama to this country and to the border programs in the Darién-Chocó area, members of the Center's staff performed, during 1971, 54 visits to the countries in the disease-free area, totaling 276 days of consultation.

Direct assistance was given to Jamaica when some cattle were suspected of being affected by a vesicular disease. Clinical examination of convalescents did not allow a definite diagnosis. Serum samples from these animals, analyzed at the Center, were negative for foot-and-mouth disease and vesicular stomatitis antibodies.

## 2. Countries in the Affected Area

Advisory services continued to be given to the countries affected by foot-and-mouth disease in the planning, execution, and evaluation of these campaigns. Assistance was given to Bolivia, Ecuador, Colombia, Peru, and Venezuela in connection with national foot-and-mouth disease control programs and the preparation of loan applications to be submitted to the Inter-American Development Bank (IDB). A handbook on the establishment and operation of biostatistical units in animal health services was

prepared, in which special emphasis was given to foot-and-mouth disease. A Continent-wide surveillance system for vesicular diseases of animals was established, and information was published fortnightly in the Epidemiological Bulletin of the Center. All important developments are immediately made known to the national and international agencies concerned with or interested in this problem.

Assistance was given to Argentina, Brazil, Chile, and Paraguay in drafting legislation governing the production of vaccines and control of their potency and in planning the buildings and equipment necessary for control of vaccines.

The following intercountry meetings were coordinated or assisted: Argentina-Chile, Brazil-Venezuela-Guyana, and Colombia-Panama.

Direct assistance was given to Brazil and Venezuela in connection with carrier detection tests on cattle which Venezuela is importing from Brazil, using the methods established by the Center.

Continuing progress was observed in the planning and implementation of the combat against foot-and-mouth disease in South America. In Colombia, Peru, and Venezuela the preparation of the national projects for foot-and-mouth disease control have been completed, through approval of their request for financial aid from the IDB for the development of their respective programs. In Bolivia and Ecuador similar documents are in preparation. Colombia and Venezuela were awarded loans from IDB for US\$19,800,000 and \$7,500,000 respectively. Such progress suggests that in future years there should be an harmonious action which will cover the entire Continent.

In Argentina, Uruguay, and in the Brazilian states of Rio Grande do Sul and Santa Catarina, the programs are covering the entire cattle population affected by foot-and-mouth disease, totaling approximately 74,000,000 animals. In other countries and states the percentage of vaccinated animals within the entire cattle population at risk is steadily increasing.

During 1971 enzootic or sporadic outbreaks of foot-and-mouth disease occurred in all the affected countries of South America; there were a few localized epidemic outbreaks in relatively small areas, but they were of no international importance.

In Bolivia the technical structure for local plans in Cochabamba and Santa Cruz de la Sierra is being prepared in anticipation of the beginning of the national program.

Direct assistance was given to Brazil in an evaluation made of the capabilities of the private laboratories for industrial production of inactivated vaccines against foot-and-mouth disease.

A consultant of the Center has been stationed in Santiago since June 1971, in order to assist the Government of Chile in the national campaign against foot-and-mouth disease.

With the technical support of the Center, Ecuador increased the production and use of inactivated foot-and-mouth disease vaccine. Progress was also made in preparing the national foot-and-mouth disease control campaign, which will receive supplementary financing from IDB.

In Paraguay, a private laboratory began to produce vaccine, and the diagnoses of field specimens were initiated in a provisional laboratory. The permanent diagnosis and control laboratory is under final construction. Direct assistance was given by the Center in an outbreak of foot-and-mouth disease in the Chaco area. Direct assistance was also given in the design of a pilot program for that area and on the necessary studies prior to the inclusion of the Western area to the national campaign.

In Uruguay the disease was kept at a very low prevalence through a vaccination campaign which covered the entire cattle population by the end of 1969. The quality and efficacy of all batches of vaccine produced continue to be officially controlled. Increased efforts were made to incorporate the rural community into the campaign, especially through the establishment of cattle committees centered in rural schools.

In Venezuela a study on the restructuring of the foot-and-mouth disease control program was begun. Direct assistance was given by the Center in the production of modified live virus vaccine, in the installation of a laboratory for production of inactivated vaccines and in the outbreak of foot-and-mouth disease which occurred in the state of Bolivar.

Besides the continuous technical assistance given by the Center's consultants to the countries where they are stationed, members of the Center's staff performed, during 1971, 154 visits to the countries in the affected area, totaling 956 days of consultation.

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

<u>International Staff</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Chief of Service	1	1	1
Epidemiologist	1	1	1
Area Consultants	6	6	6
Headquarters Consultants			
- in Biostatistics	1	2	2
- in Administrative Methods	1	1	1
- in Vaccines Production and Control	1	1	1

<u>Local Staff</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Secretaries	3	3	3
Clerks	2	2	2
Total	<u>16</u>	<u>17</u>	<u>17</u>

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

	<u>1972</u>	<u>1973</u>	<u>1974</u>
Headquarters Services	49.5%	54.2%	55.4%
Area Consultants	50.5%	45.8%	44.6%

#### V. ADMINISTRATIVE SERVICES

The local staff of the Administrative Services will be increased by one clerk in the Personnel Section in 1972 and one typist in the Finance Section in 1973.

The increases here are due to the regular within-grade increases of local staff and possible salary increases in the order of 20 per cent for 1973 and 10 per cent for 1974, due to the rise in the cost of living.

#### VI. COMMON SERVICES

in 1973 and 1974, to cover possible price increases in products and equipment and additional maintenance service that will be needed for laboratories and animal quarters, and for the replacement of one vehicle in 1973 and five in 1974.

#### VII. ORGANIZATION OF MEETINGS

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

TABLE II

AFFECTED AREA - FIELD SPECIMENS EXAMINED IN THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER IN 1971

Country	Foot-and-Mouth Disease Virus Subtypes											Negative	Total
	O <sub>1</sub>	O Vallée (+)	A <sub>24</sub>	A <sub>26</sub>	A <sub>27</sub>	A <sub>32</sub>	A Brazil/ 70(++)	A Vallée (+)	C <sub>2</sub>	C <sub>3</sub>	C <sub>5</sub>	C Wald. (+)	
Argentina	17	-	7	4	-	-	-	-	-	-	5	-	33
Bolivia	1	-	-	-	-	-	-	-	-	-	-	-	1
Brazil	116	7	13	-	-	-	36	7	-	26	-	12	242
Colombia	4	-	-	-	4	1	-	-	-	-	-	-	9
Chile	13	-	26	2	-	-	-	-	1	-	1	1	50
Ecuador	5	-	4	-	3	-	-	1	-	-	-	-	14
Paraguay	2	-	-	-	-	-	-	-	-	-	-	-	2
Peru	3	1	6	-	13	-	-	3	-	5	-	-	31
Uruguay	-	-	-	-	-	-	-	-	-	-	-	-	1
Venezuela	18	-	1	-	-	14	-	1	-	-	-	-	36
Total	179	8	57	6	20	15	36	12	1	31	6	13	419

(+) Insufficient material for classification

(++) Samples under study - provisional denomination

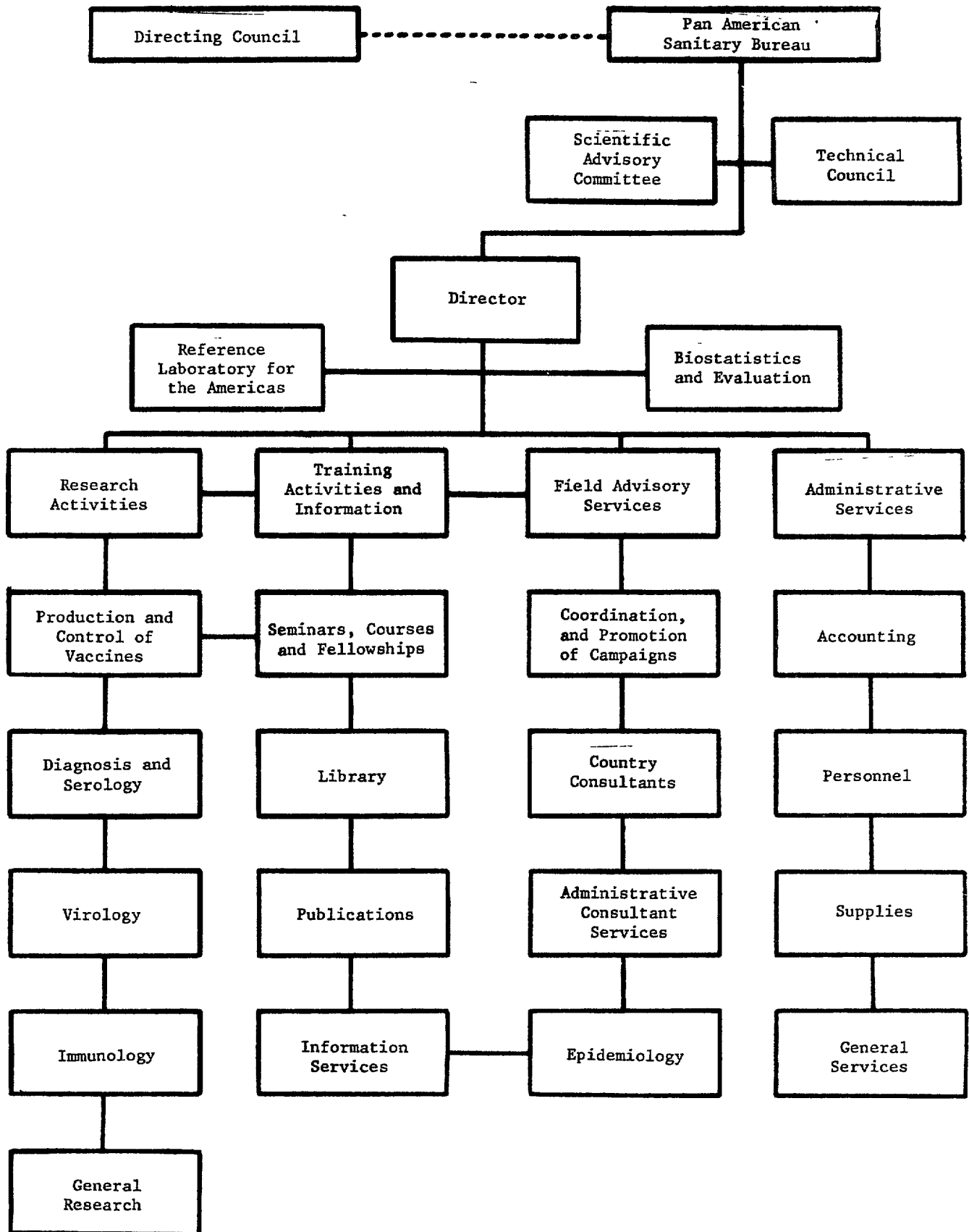


TABLE III  
DISEASE-FREE AREA - FIELD SPECIMENS EXAMINED IN THE  
PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER IN 1971

Country	Types and Subtypes of the Vesicular Stomatitis Virus		Negative	Total
	New Jersey	Indiana I		
British Honduras	1	-	-	1
Costa Rica	21 (+)	-	8	29
El Salvador	1	2	3	6
Guatemala	12	5	2	19
Honduras	11	7	4	22
Nicaragua	84	-	4	88
Panama	1 (+)	2	1	4
Total	131	16	22	169

(+) One sample corresponds to bovine serum

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



PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1972

	Office of Director	Research	Training	Field Services	Adminis- tration	Common Services	Meetings	Total	Percentage of Total
Salaries and Allowances	73,578	692,479	58,158	306,154	59,577	-	-	1,189,946	77.0
Duty Travel	6,945	25,973	5,336	45,798	-	-	23,000	107,052	6.9
Fellowships	-	-	34,709	-	-	-	-	34,709	2.3
Short-term Consultants	-	-	3,324	-	-	-	2,000	5,324	0.3
Supplies and Equipment	-	93,631	11,000	1,000	1,815	29,500	-	136,946	8.9
Contractual Services	-	5,900	8,950	-	1,100	43,610	9,000	68,560	4.4
Publications	-	-	3,000	-	-	-	-	3,000	0.2
Total	80,523	817,983	124,477	352,952	62,492	73,110	34,000	1,545,537	
Percentage of Total	5.2	52.9	8.1	22.8	4.1	4.7	2.2		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1972

<u>Office of the Director</u>	<u>80,523</u>
Salaries and allowances	73,578
Professional staff (2)	
Director, P.6	
Administrative officer, P.4	
Local staff (3)	
Duty travel	6,945
<u>Research Activities</u>	<u>817,983</u>
Salaries and allowances	692,479
Professional staff (12)	
Chief of laboratory, P.5	
Virologist, P.4	
Serologist, P.4	
Research officer, P.4	
Biochemist, P.4	
Immunologist, P.4	
Serologist, P.4	
Research officer, P.4	
Research officer, P.4	
Serologist, P.4	
Research assistant, P.1	
Research assistant, P.1	
Local staff (114)	
Duty travel	25,973
Supplies and equipment	93,631
Supplies	73,631
Equipment	20,000
Contractual services	5,900

1972 BUDGET (continued)

<u>Training activities</u>	<u>124,477</u>
Salaries and allowances	58,158
Professional staff (2)	
Chief of training activities, P.4	
Technical publications officer, P.2	
Local staff (4)	
Duty travel	5,336
Short-term consultants	3,324
Fellowships	34,709

	<u>Period</u>	<u>Stipends</u>	<u>Travel</u>
<u>Residents</u>	96 months	17,280	9,930
24 fellows from: Argentina (1), Bolivia (2), Brazil (2), Chile (1), Colombia (2), Cuba (1), Dominican Republic (1), Ecuador (2) Guatemala (1), Haiti (1), Jamaica (1), Panama (1), Paraguay (2), Peru (2), Uruguay (1), Venezuela (2), United States of America (1)			

Seminars

Seminar in Rio de Janeiro, Brazil	21 days	4,620	2,879
10 fellows from: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela (one each)			

Publications	3,000
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1972 BUDGET (continued)

Supplies and equipment		11,000
Supplies	8,000	
Equipment	3,000	
Contractual services		8,950
<u>Advisory services</u>		<u>352,952</u>
Salaries and allowances		306,154
Professional staff (11)		
Chief of field services, P.5		
Veterinarian, P.4		
6 country consultants, P.4		
Administrative consultant, P.4		
Biostatistician, P.4		
Vaccine consultant, P.4		
Local staff (5)		
Duty travel		45,798
Supplies and Equipment		1,000
<u>Administrative services</u>		<u>62,492</u>
Salaries and allowances		59,577
Local staff (9)		
Supplies and equipment		1,815
Contractual services		1,100
<u>Common services</u>		<u>73,110</u>
Supplies and equipment		29,500
Supplies	25,000	
Equipment	4,500	
Contractual services		43,610

1972 BUDGET (continued)

<u>Meetings</u>		<u>34,000</u>
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	
Secretarial personnel	1,500	
	Total	<u>1,545,537</u>

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1972 BUDGET

RESEARCH ACTIVITIES

	Diagnosis and Reference	Inactivated Vaccine	Modified Live Virus Vaccine	Virus Survival	General Research	Total	Percentage of Total
Salaries and Allowances							
International Staff	64,493	64,519	74,951	28,655	31,480	264,098	32.3
Local Staff	73,939	132,198	92,230	66,956	63,058	428,381	52.4
Duty Travel	4,000	5,982	8,960	3,888	3,143	25,973	3.2
Supplies and Equipment	10,674	52,518	14,616	5,805	10,018	93,631	11.4
Contractual Services	1,180	1,180	1,180	1,180	1,180	5,900	0.7
Total	154,286	256,397	191,937	106,484	108,879	817,983	
Percentage of Total	18.9	31.3	23.5	13.0	13.3		100.0



PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1972 BUDGET

FIELD ADVISORY SERVICES

	Regional Advisors	Headquarters Advisors	Total	Percentage of Total
Salaries and Allowances				
International Staff	156,349	124,519	280,868	79.6
Local Staff	-	25,286	25,286	7.2
Duty Travel	21,933	23,865	45,798	13.0
Supplies and Equipment	-	1,000	1,000	0.2
Total	178,282	174,670	352,952	
Percentage of Total	50.5	49.5		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1973

	Office of Director	Research	Training	Field Services	Adminis- tration	Common Services	Meetings	Total	Percentage of Total
Salaries and Allowances	82,782	757,519	79,791	345,040	69,356	-	-	1,334,488	78.5
Duty Travel	4,971	17,423	3,427	35,869	-	-	39,000	100,690	5.9
Fellowships	-	-	31,643	-	-	-	-	31,643	1.9
Short-term Consultants	-	-	3,324	-	-	-	2,000	5,324	0.3
Supplies and Equipment	-	100,898	11,600	5,500	2,000	32,548	-	152,546	9.0
Contractual Services	-	6,100	9,300	-	1,500	46,000	9,000	71,900	4.2
Publications	-	-	3,500	-	-	-	-	3,500	0.2
Total	87,753	881,940	142,585	386,409	72,856	78,548	50,000	1,700,091	
Percentage of Total	5.2	51.9	8.4	22.7	4.3	4.6	2.9		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1973

<u>Office of the Director</u>		<u>87,753</u>
Salaries and allowances		82,782
Professional staff (2)		
Director, P.6		
Administrative officer, P.4		
Local Staff (3)		
Duty travel		4,971
<u>Research activities</u>		<u>881,940</u>
Salaries and allowances		757,519
Professional staff (12)		
Chief of laboratory, P.5		
Virologist, P.4		
Serologist, P.4		
Research officer, P.4		
Biochemist, P.4		
Immunologist, P.4		
Serologist, P.4		
Research officer, P.4		
Research officer, P.4		
Serologist, P.4		
Research assistant, P.1		
Research assistant, P.1		
Local staff (116)		
Duty travel		17,423
Supplies and equipment		100,898
Supplies	73,298	
Equipment	27,600	
Contractual services		6,100

1973 BUDGET (continued)

<u>Training activities</u>	<u>142,585</u>
Salaries and allowances	79,791
Professional staff (3)	
Chief of training activities, P.4	
Technical translator, P.2	
Technical publications officer, P.2	
Local staff (4)	
Duty travel	3,427
Short-term consultants	3,324
Fellowships	31,643

	<u>Period</u>	<u>Stipends</u>	<u>Travel</u>
<u>Residents</u>	72 months	11,904	11,086
24 fellows from: Argentina (1), Bolivia (2), Brazil (2), Chile (1), Colombia (2) Cuba (1), Dominican Republic (1), Ecuador (2), Guatemala (1), Haiti (1), Jamaica (1), Panama (1), Paraguay (2), Peru (2), Uruguay (1), Venezuela (2), United States of America (1)			

Seminars

Seminar in Rio de Janeiro, Brazil	21 days	5,775	2,878
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11 fellows from: Argentina (1),  
Bolivia (1), Brazil (2),  
Chile (1), Colombia (1),  
Ecuador (1), Paraguay (1),  
Uruguay (1), Venezuela (1)

Publications	3,500
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1973 BUDGET (continued)

Supplies and equipment		11,600
Supplies	8,800	
Equipment	2,800	
Contractual services		9,300
<u>Advisory services</u>		<u>386,409</u>
Salaries and allowances		345,040
Professional staff (12)		
Chief of field services, P.5		
Veterinarian, P.4		
6 country consultants, P.4		
Administrative consultant, P.4		
Biostatistician, P.4		
Vaccine consultant, P.4		
Statistician, P.4		
Local staff (5)		
Duty travel		35,869
Supplies and equipment		5,500
<u>Administrative services</u>		<u>72,856</u>
Salaries and allowances		69,356
Local staff (10)		
Supplies and equipment		2,000
Contractual services		1,500
<u>Common services</u>		<u>78,548</u>
Supplies and equipment		32,548
Supplies	28,848	
Equipment	3,700	

1973 BUDGET (continued)

Contractual services	46,000
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<u>Meetings</u>	<u>50,000</u>
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Technical Council Meeting	34,000
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Duty travel	13,000
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Per diem	10,000
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Short-term consultants	2,000
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Interpreters	6,000
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Local transportation, printing and general services	1,500
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Secretariat personnel	1,500
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Scientific Advisory Committee	16,000
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Duty travel	10,000
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Per diem	6,000
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Total	<u>1,700,091</u>
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PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1973 BUDGET

RESEARCH ACTIVITIES

	Diagnosis and Reference	Inactivated Vaccine	Modified Live Virus Vaccine	Virus Survival	General Research	Total	Percentage of Total
Salaries and Allowances							
International Staff	65,432	65,459	75,510	30,914	33,623	270,938	30.7
Local Staff	85,152	145,439	104,080	77,950	73,960	486,581	55.2
Duty Travel	2,683	4,013	6,011	2,608	2,108	17,423	2.0
Supplies and Equipment	11,876	55,010	15,952	6,860	11,200	100,898	11.4
Contractual Services	1,220	1,220	1,220	1,220	1,220	6,100	0.7
Total	166,363	271,141	202,773	119,552	122,111	881,940	
Percentage of Total	18.9	30.7	23.0	13.6	13.8		100.0

## PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

## 1973 BUDGET

## FIELD ADVISORY SERVICES

	Regional Advisors	Headquarters Advisors	Total	Percentage of Total
Salaries and Allowances				
International Staff	161,972	154,085	316,057	81.8
Local Staff	-	28,983	28,983	7.5
Duty Travel	14,897	20,972	35,869	9.3
Supplies and Equipment	-	5,500	5,500	1.4
Total	176,869	209,540	386,409	
Percentage of Total	45.8	54.2		100.0



PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BREAKDOWN OF THE BUDGET FOR 1974

	Office of Director	Research	Training	Field Services	Adminis- tration	Common Services	Meetings	Total	Percentage of Total
Salaries and Allowances	86,276	853,955	90,469	361,715	76,875	-	-	1,469,290	78.5
Duty Travel	5,876	21,033	3,847	46,731	-	-	23,000	100,487	5.4
Fellowships	-	-	31,042	-	-	-	-	31,042	1.7
Short-term Consultants	-	-	3,440	-	-	-	2,000	5,440	0.3
Supplies and Equipment	-	116,775	11,480	9,350	2,200	45,500	-	185,305	9.9
Contractual Services	-	6,850	9,670	-	1,650	48,500	9,000	75,670	4.0
Publications	-	-	3,850	-	-	-	-	3,850	0.2
Total	92,152	998,613	153,798	417,796	80,725	94,000	34,000	1,871,084	
Percentage of Total	5.0	53.4	8.2	22.3	4.3	5.0	1.8		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

BUDGET

1 January - 31 December 1974

<u>Office of the Director</u>	<u>92,152</u>
Salaries and allowances	86,276
Professional staff (2)	
Director, P.6	
Administrative officer, P.4	
Local staff (3)	
Duty travel	5,876
<u>Research activities</u>	<u>998,613</u>
Salaries and allowances	853,955
Professional staff (12)	
Chief of laboratory, P.5	
Virologist, P.4	
Serologist, P.4	
Research Officer, P.4	
Biochemist, P.4	
Immunologist, P.4	
Serologist, P.4	
Research officer, P.4	
Research officer, P.4	
Serologist, P.4	
Research assistant, P.1	
Research assistant, P.1	
Local staff (117)	
Duty travel	21,033
Supplies and equipment	116,775
Supplies	91,775
Equipment	25,000
Contractual services	6,850

1974 BUDGET (continued)

<u>Training activities</u>	<u>153,798</u>
Salaries and allowances	90,469
Professional staff (3)	
Chief of training activities, P.4	
Technical translator, P.2	
Technical publications officer, P.2	
Local staff (5)	
Duty travel	3,847
Short-term consultants	3,440
Fellowships	31,042

	<u>Period</u>	<u>Stipends</u>	<u>Travel</u>
<u>Residents</u>	72 months	14,640	11,086
24 fellows from: Argentina (1)			
Bolivia (2), Brazil (2),			
Chile (1), Colombia (2)			
Cuba (1), Dominican			
Republic (1), Ecuador (2)			
Guatemala (1), Haiti (1),			
Jamaica (1), Panama (1),			
Paraguay (2), Peru (2),			
Uruguay (1), Venezuela (2),			
United States of America (1)			

Seminars

Seminar in Rio de Janeiro, Brazil	21 days	1,760	3,556
11 fellows from: Argentina (1)			
Bolivia (1), Brazil (2),			
Chile (1), Colombia (1)			
Ecuador (1), Paraguay (1),			
Peru (1), Uruguay (1),			
Venezuela (1)			

1974 BUDGET (continued)

Supplies and equipment	11,480
Supplies	9,680
Equipment	1,800
Contractual services	9,670
Publications	3,850
<u>Advisory services</u>	<u>417,796</u>
Salaries and allowances	361,715
Professional staff (12)	
Chief of field services, P.5	
Veterinarian, P.4	
6 country consultants, P.4	
Administrative consultant, P.4	
Biostatistician, P.4	
Vaccine consultant, P.4	
Statistician, P.4	
Local staff (5)	
Duty travel	46,731
Supplies and equipment	9,350
<u>Administrative services</u>	<u>80,725</u>
Salaries and allowances	76,875
Local staff (10)	
Supplies and equipment	2,200
Contractual services	1,650

1974 BUDGET (continued)

<u>Common services</u>		<u>94,000</u>
Supplies and equipment		45,500
Supplies	27,000	
Equipment	18,500	
Contractual services		48,500
<u>Meetings</u>		<u>34,000</u>
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		<u>1,871,084</u>

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1974 BUDGET

RESEARCH ACTIVITIES

	Diagnosis and Reference	Inactivated Vaccine	Modified Live Virus Vaccine	Virus Survival	General Research	Total	Percentage of Total
Salaries and allowances							
International Staff	71,771	71,798	81,979	36,810	39,553	301,911	30.2
Local Staff	96,608	165,006	118,082	88,437	83,911	552,044	55.3
Duty Travel	3,239	4,844	7,256	3,149	2,545	21,033	2.1
Supplies and Equipment	12,567	58,214	16,881	7,261	21,852	116,775	11.7
Contractual Services	1,370	1,370	1,370	1,370	1,370	6,850	0.7
Total	185,555	301,232	225,568	137,027	149,231	998,613	
Percentage of total	18.6	30.2	22.6	13.7	14.9		100.0

PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER

1974 BUDGET

FIELD ADVISORY SERVICES

	<u>Regional Advisors</u>	<u>Headquarters Advisors</u>	<u>Total</u>	<u>Percentage of Total</u>
Salaries and Allowances				
International Staff	168,372	160,269	328,641	78.7
Local Staff	-	33,074	33,074	7.9
Duty Travel	18,110	28,621	46,731	11.2
Supplies and Equipment	-	9,350	9,350	2.2
Total	<u>186,482</u>	<u>231,314</u>	<u>417,796</u>	
Percentage of Total	44.6	55.4		100.0



PAN AMERICAN HEALTH ORGANIZATION

CE68/5 (Eng.)  
ANNEX V



WORLD HEALTH ORGANIZATION

# V INTER-AMERICAN MEETING ON FOOT-AND-MOUTH DISEASE AND ZONOSSES CONTROL

MEXICO CITY, MEXICO, 10-13 APRIL 1972

## Provisional Agenda Item 8

RICAZ5/11 (Eng.)  
6 March 1972  
ORIGINAL: SPANISH

PROGRAM AND BUDGET OF THE PAN AMERICAN ZONOSSES CENTER FOR 1972,  
PROPOSED ESTIMATES FOR 1973, AND PROVISIONAL DRAFT FOR 1974



PROGRAM AND BUDGET OF THE PAN AMERICAN ZOONOSES CENTER FOR 1972,  
PROPOSED ESTIMATES FOR 1973, AND PROVISIONAL DRAFT FOR 1974

INTRODUCTION

The programs developed and the scientific and technical advances attained by the Pan American Zoonoses Center (CEPANZO) included a group of diseases with well-defined characteristics. The importance of those diseases has been defined in terms of their impact on the public health and the livestock economy of the Hemisphere.

The Center was first established in 1956 in the city of Azul (Province of Buenos Aires, 180 miles South of the Federal Capital), where it remained until 1966. There, the first stage of operations was completed with the support of the Government of Argentina, which donated a building where laboratories, lecture rooms, offices and a library were subsequently installed. The Argentine Government also provided an experimental farm three miles from Azul occupying an area of 370 acres where various species of laboratory animals were maintained and research activities on domestic animals were carried out. Cattle, sheep, and goats, intended for the experimental work derived from the research done at the Center, were also bred there.

That stage represented a useful and indispensable period in the life of the Center, during which the priorities for its programs were studied in the light of the data supplied by the different American countries. Thus it was possible to establish the scope of action of the most prevalent zoonoses as well as the economic factors most detrimental to public health and the livestock economy.

During the above-mentioned period, various investigations were carried out and improved techniques were developed.

From 1956 to 1966 the activities of the Pan American Zoonoses Center were financed with funds supplied by the Argentine Government and by PAHO/WHO.

In spite of the meagerness of the available funds, the services of the Center were increasingly demanded by the countries. This situation prompted the Government of Argentina to increase its contributions and to submit to the United Nations Development Program (UNDP) a project entitled "Strengthening of the Pan American Zoonoses Center in Ramos Mejia and Azul." The project was approved for a five-year period, 1967-1971, and was completed last December.

Upon approval of the project, the Center transferred a large part of its laboratories to the new premises provided at the National Institute of Health in Ramos Mejia. Field studies and investigations, as well as the

breeding of laboratory animals, continued to be carried out in Azul. In addition to affording the Center better facilities, the new location enabled it to expand its activities, projecting them more efficiently to the Argentine research centers and universities, and resulted in more positive and prompt communications with other countries.

The funds granted under that project also permitted the Center to purchase basic laboratory equipment which proved extremely valuable for its research, training, information, and advisory services.

The Third Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control (RICAZ III), held in Buenos Aires from 14 to 17 April 1970, approved Resolution II. This recommendation was subsequently endorsed by the XVIII Pan American Sanitary Conference of PAHO in October 1970.

At the Fourth Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control, there was a renewal of support for submitting a proposal to UNDP to extend financial assistance to the Center in the form of a regional project. The regional project called for a contribution of \$1,394,800 from UNDP, for a five-year period, 1972-1976. This project was submitted by the Government of Argentina in its capacity as host country for the Center, and seconded by Brazil, Chile, Colombia, Cuba, Ecuador, Paraguay, Uruguay, Venezuela, and most of the other countries of the Hemisphere.

The UNDP contribution was approved in January 1972, and as a regional project, the Center will now be able to increase the technical assistance it provides to the American countries in support of their zoonoses control and/or their eradication programs.

#### SOURCE OF FUNDS

Under the Regional Project, the funds allocated for financing the activities of the Pan American Zoonoses Center during the period 1972-1976 will come from the four following sources:

- (a) The United Nations Development Program (UNDP);
- (b) An annual contribution from the Government of Argentina;
- (c) Funds from the regular budget of the Pan American Health Organization (PAHO);\*

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\* 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 1-A show the budgetary projection for the years 1972 through 1974.

#### THE ZOONOSES PROBLEM

Zoonoses have a direct impact on human health and interfere with the advancement of agriculture and with the economic development. They play a most important role in the fields of human nutrition and health, as well as in the economy of the livestock industry.

These diseases have a special significance in Latin America, where 50 per cent of the population lives in rural areas.

Contact and close proximity are factors favoring the establishment of direct transmission of infections between animals and man.

It is a well-established fact that brucellosis, tuberculosis, bovine rabies and hydatidosis account for heavy economic losses owing to their high incidence in many American countries, where they also constitute a serious public health problem since they are the most frequent zoonoses that affect man.

Salmonellosis plays an important role in the meat export market as it constitutes a vehicle for human infection.

The outbreaks of Venezuelan equine encephalitis of 1969, 1970, and especially that occurring last year, evidenced the seriousness of this disease in Colombia, Venezuela, Central American countries, and Mexico, where it has a marked incidence in humans and a high mortality rate among horses.

During the 1971 epidemic of Venezuelan equine encephalitis (EEV), 15,000 clinical cases in humans and 18,000 dead horses were reported. In the United States of America, towards the end of August, the infection produced 1,969 cases in horses and 76 in man, all laboratory confirmed.

Owing to their special clinical characteristics, brucellosis and tuberculosis in cattle affect the reproduction rate in that species and bring about a drop in milk production.

In 11 Latin American countries, the economic losses caused by animal brucellosis and bovine tuberculosis have been estimated at US\$230 million and \$150 million per year, respectively.

TABLE 1

PAN AMERICAN ZOONOSES CENTER  
BUDGETARY PROJECTIONS FOR THE YEARS 1972 THROUGH 1974  
(in US dollars)

	<u>1972</u>	<u>1973</u>	<u>1974</u>
Contributions from the United Nations Development Program (UNDP)	331,000	317,600	314,200
Contributions from the Government of Argentina	283,400	297,600	312,500
Funds from regular budget of the Pan American Health Organization*	501,790	545,524	599,400
Funds from regular budget of the World Health Organization	96,010	98,668	109,200
	<u>1,212,200</u>	<u>1,259,400</u>	<u>1,335,300</u>

\*In the funds of the PAHO Regular Budget there are included the corresponding contributions of the ministries of agriculture, in the amounts of \$330,000 (1972); \$363,000 (1973); and \$399,300 (1974). 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, as a matter of internal administration, to allocate to the Ministry of Agriculture a portion of the quota for support of the Pan American Zoonoses Center, there is a schedule in Table 1A, showing the amount by country.

TABLE 1A

PROPORTION OF CONTRIBUTIONS OF MEMBER GOVERNMENTS OF PAHO  
PROJECTED FOR FINANCING THE EXPANDED PROGRAM OF SERVICES  
OF THE PAN AMERICAN ZOONOSES CENTER

Country	%	1973 \$	1974 \$
Argentina	6.89	23,233	25,557
Barbados	0.08	270	297
Bolivia	0.32	1,079	1,187
Brazil	6.49	21,885	24,073
Chile	1.63	5,496	6,046
Colombia	1.54	5,193	5,712
Costa Rica	0.32	1,079	1,187
Cuba	1.30	4,384	4,822
Dominican Republic	0.32	1,079	1,187
Ecuador	0.32	1,079	1,187
El Salvador	0.32	1,079	1,187
Guatemala	0.41	1,383	1,521
Haiti	0.32	1,079	1,187
Honduras	0.32	1,079	1,187
Jamaica	0.32	1,079	1,187
Mexico	7.13	24,043	26,447
Nicaragua	0.32	1,079	1,187
Panama	0.32	1,079	1,187
Paraguay	0.32	1,079	1,187
Peru	0.81	2,731	3,004
Trinidad and Tobago	0.30	1,012	1,113
United States of America	66.00	222,554	244,809
Uruguay	0.57	1,922	2,114
Venezuela	3.33	11,229	12,352
	100.00	337,204	370,924
Other Member and Participating Governments			
Canada	6.72	22,660	24,927
France	0.23	776	853
Guyana	0.24	809	890
Kingdom of the Netherlands	0.19	641	705
United Kingdom	0.27	910	1,001
		25,796	28,376
TOTAL		363,000	399,300
		=====	=====

For 40 years, the bovine tuberculosis eradication program conducted in the United States of America represented a disbursement of \$326 million, and now it has been proved that \$150 million is recovered annually, due to this sanitary measure.

The losses caused by bovine rabies are also significant, having been estimated at \$45 million. It follows from the foregoing that the combined economic losses caused by the three main zoonoses - tuberculosis, brucellosis, and bovine rabies - amount to \$425 million.

The available evidence indicates that the estimation methods used for all those studies of economic losses in terms of human and animal health do not permit the establishment of an accurate relationship, and though the figures quoted are only approximate, there is every reason to believe that the losses have even more economic significance.

In the field of zoonoses, an important role is also played by the ingestion of contaminated foods of animal origin.

Generally speaking, the prevention of human zoonoses lies in the control of the infection in animals, which are the natural hosts of the original infections.

The possibility of obtaining loans from the Inter-American Development Bank for the financing of zoonoses control programs is acting as a powerful stimulus for the countries of the Region and opening up promising prospects for human and animal health.

Credits of this nature encourage the countries to duly develop the infrastructure of their laboratory and field services. In this way it becomes possible to plan long-term health programs, which are the only means to obtain effective control results. In addition, and associated to this financial aspect, the Pan American Health Organization manages to provide, through CEPANZO, highly effective technical assistance.

The brucellosis control programs submitted to the IDB by Colombia and Venezuela have already been approved. Other countries are now following and preparing loan applications for IDB to finance similar programs.

#### PURPOSES AND OBJECTIVES

The Pan American Zoonoses Center has considerably widened its scope of action and in the future it will undoubtedly have to increase its services to the various countries.

The Center's activities are based on objectives which correspond to well-defined needs of the Member Countries of the Pan American Health Organization and which are reviewed in each case with the country requesting assistance, after being submitted to the careful consideration of the technical groups in the corresponding zone, the PAHO Headquarters, and CEPANZO.

The main purpose is to train technicians so that, upon return to their home countries, they are able to develop improved methods for the diagnosis of the different zoonoses. Likewise, the Center gives advice on everything that concerns the production of vaccines of the utmost effectiveness.

All the above-mentioned activities are carried out directly on the premises of CEPANZO.

At the same time, on-the-spot advisory services are provided in the various countries, both for the formulation of programs and for the application of control measures.

The indicated tasks secure their objective through the development of investigations in each of the fields mentioned above. Diagnosis and vaccine production benefit from the outcome of such investigations which makes for a sustained technical progress that is, in turn, translated into an increasingly effective assistance to the countries served by CEPANZO.

#### DISTRIBUTION OF FUNDS

The following percentages will be allotted, within the budget for each year, to each of the main headings listed below, which comprise the objectives of the Center and the activities for achieving them:

Year	Training and Technical Information	Technical Advisory Services	Research Projects
1972	18.2	48.8	28.3
1973	18.9	48.8	27.6
1974	19.5	48.3	27.5

The distribution of funds for 1972, 1973, and 1974 according to the program of activities and administrative expenses, is in Table 2.

TABLE 2

PAN AMERICAN ZOONOSIS CENTER  
PLAN OF EXPENDITURES IN ACCORDANCE WITH THE PROGRAM OF SERVICES TO COUNTRIES

YEAR	Training and Technical Information (a) %		Technical Assistance		Laboratory Services (c) %		Research (d) %		Administration (e) %		Total Budget %	
			Field Services for Zoonoses Control (b)	%								
1972	218,418	18.2	352,829	28.9	244,920	19.9	339,628	28.3	56,405	4.7	1,212,200	100.0
1973	238,027	18.9	369,004	29.3	245,583	19.5	347,594	27.6	59,192	4.7	1,259,400	100.0
1974	260,384	19.5	387,237	29.0	257,713	19.3	367,208	27.5	62,758	4.7	1,335,300	100.0

- (a) The funds include fellowships for courses and national and international seminars, salaries of the Center's staff and special consultants, supplies, materials, teaching equipment, personnel, materials and cost of shipping publications.
- (b) Includes salaries of staff, duty travel, supplies and equipment for epidemiological studies, vaccine field trials and other control procedures; administrative costs and meetings.
- (c) Includes staff for the production of standard reagents, quality testing of vaccines and antigens, duty travel, supplies and equipment, and common costs.
- (d) Includes the costs of research projects at the Center itself and in the countries, including costs of personnel, consultants, duty travel, supplies and equipment, and administrative costs.
- (e) Funds for staff salaries and general administrative expenses of the Center (finances, personnel, supplies and general services).



## ADMINISTRATION AND ORGANIZATION

The Regional Project of the Pan American Zoonoses Center will be administered by the World Health Organization through the Pan American Sanitary Bureau.

There will be a Coordinating Committee to coordinate the activities of the Center with the control or research projects of the countries. This Committee will be composed of representatives of the Government of Argentina and representatives of six Member Countries selected by the Governing Bodies of PAHO and by the Inter-American Meeting, at the Ministerial Level, on Foot-and-Mouth Disease and Zoonoses Control. International agencies will also be represented on this committee, but will not have the right to vote.

A FAO liaison officer will coordinate these activities with those that FAO undertakes in the Americas.

The internal organization of the Center comprises an office of the Director, two technical departments, and an administrative section. Each of these divisions includes several units (see Organizational Chart).

ACCOUNT OF ACTIONS TAKEN ON THE RECOMMENDATIONS ISSUED BY THE IV INTER-AMERICAN MEETING ON FOOT-AND-MOUTH DISEASE AND ZOONOSSES CONTROL (Lima, Peru, 5-7 April 1971)

### Resolution I, Human Resources in Animal Health

This resolution comprises several recommendations addressed to the governments, universities, and international agencies, all aimed at boosting the training of professionals and auxiliary personnel, as the only means to insure the proper development of animal health programs.

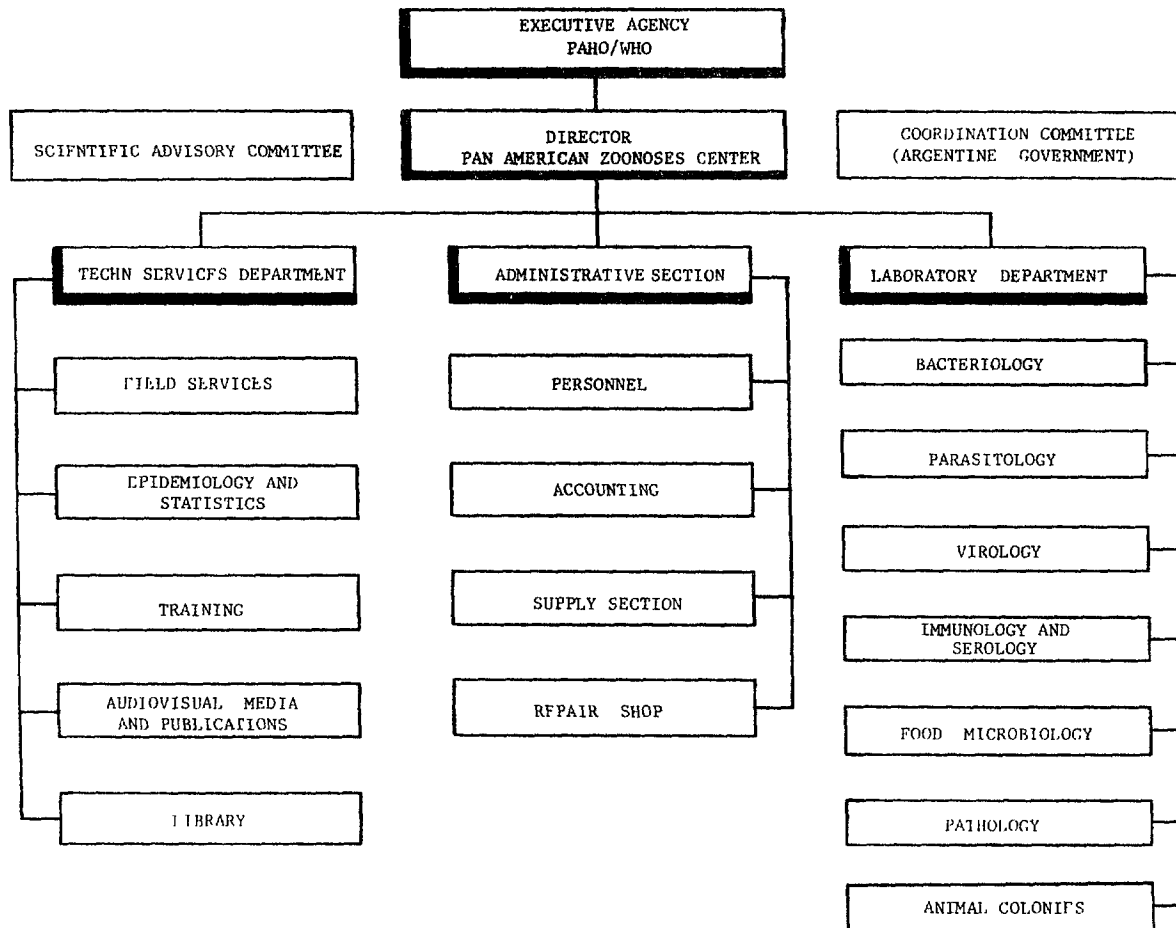
The Center has started to work in close collaboration with the universities, especially at the graduate level.

In Argentina, CEPANZO has participated in the Course on Food Hygiene offered at the Graduate School for Agricultural Sciences, being responsible for the entire program dealing specifically with food microbiology and hygiene. Fellows from Argentina, Brazil, Chile, and Uruguay attended this course.

A graduate course on theoretical and applied Food Microbiology and Hygiene was also offered at the Montevideo School of Veterinary Medicine, in Uruguay.

## PAN AMERICAN ZOOSES CENTER

### ORGANIZATION CHART



A course on leptospirosis was taught at the Faculty of Veterinary Medicine and Zootechnics in Bogota, Colombia, with the participation of the public health agencies and the Ministry of Agriculture.

In addition, the Center has offered individual training to faculty members of the following universities: Faculty of Veterinary Medicine of the University of Guadalajara, Mexico; Santa Maria, Rio Grande do Sul, Brazil; Faculty of Veterinary Medicine and Agricultural Science of the University of Parana, Brazil, on breeding and handling of laboratory animals; and Faculty of Veterinary Medicine and Zootechnics of Guatemala, on rabies diagnosis, leptospirosis and food microbiology. Contacts have also been made with the Faculties of Agricultural Sciences of Buenos Aires and La Plata, in Argentina.

Resolution II, Financial Cooperation of the Inter-American Development Bank for Animal Health Programs

This refers to the advisability that each country consider the possibility of supplementing the funds allocated to zoonoses campaigns by making use of the credit facilities afforded by the Inter-American Development Bank (IDB).

Colombia and Venezuela have received the assistance of the Pan American Zoonoses Center in the preparation of loan applications to be submitted to the IDB in order to finance brucellosis control programs. These applications were approved in the second half of 1971.

Similarly, the Center is providing technical assistance to the Dominican Republic to apply for an IDB loan to be used for brucellosis and tuberculosis control programs.

Honduras and Costa Rica have started the design of brucellosis and tuberculosis projects, which are receiving the enthusiastic cooperation of the Center.

Uruguay is studying with special interest the preparation of a hydatidosis project to be submitted to the IDB, in which the Center is taking an active part.

Resolution VIII, Epidemiological Surveillance of Rabies

This resolution mainly recommends to strive for better accuracy of laboratory diagnosis of rabies and for the improvement of the reporting systems.

The epidemiological rabies surveillance system for the Americas is now almost three years old. Monthly bulletins and biannual supplements are regularly published (1,100 copies in Spanish and 600 in English are currently distributed). In the Americas, with a population of 488 million inhabitants, 1,200,000 bites and contact exposures are reported yearly, with 360,000 persons receiving vaccine treatments. Two hundred and ninety-two cases of human rabies and 30 post-vaccinal neuromuscular complications were recorded, with four deaths. There were 32,293 cases of animal rabies: 3,688 in wild animals, 22,904 in dogs and cats, 5,251 in cattle, and the rest in other domestic species.

Bovine rabies epizootics occurred in Bolivia (Trinidad, 200 cases), Argentina (Corrientes, 55 cases), and Peru (Puerto Maldonado, 65 cases), and for the first time in Peru, 4 cases in insectivorous bats were confirmed.

In Latin America, surprisingly enough, the annual incidence of bovine rabies transmitted by bats was below 5,000 cases per year. Other authors have estimated its annual occurrence at 500,000 cases. Figures vary between 5,000 and 500,000 cases per year - at 1 to 100 variation - but accepting an intermediate value, the annual figure may be considered to be at around 250,000. With regard to the 5,000 cases registered in 1970, only one-fourth of them were laboratory confirmed. This would seem to indicate that even within the reporting area (which represents a very small fraction of the total number of cases) an inadequate number of samples are submitted for examination.

Both phenomena, the underreporting and the small number of samples examined, would seem to indicate that the notification system operates at minimum levels (there is no coordination between the agriculture and the public health sectors) and that the network of regional animal health laboratories has not yet attained full development.

The following table shows the bovine rabies situation in Latin America during 1970:

Zone (a)	Potentially Exposed Bovine Population (in Thousands)	Exposed Area (in Km <sup>2</sup> )	Bovine Rabies Number of Cases	Vaccines for Bovine Use. Production in Thousands of Doses
I	8,680 (b)	1,386,412 (e)	87	150
II	24,876 (c)	1,972,546 (f)	969	10
III	9,157	521,685	134	0
IV	28,766	3,806,272	324	200
V	95,008	8,511,965	2,572	5,252
VI	13,800 (d)	1,029,752 (g)	265	170
Total	180,287	17,228,632	4,351	5,782

(Cont.)

- (a) Following the geographical distribution of PAHO Zone Offices:  
Zone I (Barbados, Guyana, Jamaica, Trinidad and Tobago, Venezuela, and the Caribbean territories)  
Zone II (Cuba, Dominican Republic, Haiti, and Mexico)  
Zone III (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama)  
Zone IV (Bolivia, Colombia, Ecuador, and Peru)  
Zone V (Brazil)  
Zone VI (Argentina, Chile, Paraguay, and Uruguay)
- (b) 305,000 cattle from Jamaica, Surinam, Bahamas, and Bermuda have been excluded.
- (c) 9,140,000 cattle from Cuba, Haiti, and Dominican Republic have been excluded.
- (d) 51,411,000 cattle from Argentina, Chile, Paraguay, and Uruguay have been excluded.
- (e) It includes Venezuela, Trinidad and Tobago, Guyana, and the Guianas, the excluded area representing 30,772 km<sup>2</sup>.
- (f) 221,008 km<sup>2</sup> of Cuba, Haiti, and the Dominican Republic have been excluded.
- (g) 3,088,342 km<sup>2</sup> of Argentina, Chile, and Uruguay have been excluded.

According to a survey carried out by the Pan American Zoonoses Center in 1970, of the 27 laboratories that currently produce vaccine for bovine use in Latin America, 14 which are the privately owned account for 80 per cent of the production. On the other hand, the overall amount of antirabies vaccine produced for use in cattle, estimated at six million doses, was prepared in 300 batches containing an average of 20,000 doses each. During the last five years, the Pan American Zoonoses Center received only 50 batches for potency testing, half of them being found unsatisfactory.

Although the amount of bovine vaccine imported by Latin America in 1970 is not known, we are aware that the regional production scarcely represented the volume needed to vaccinate 3 per cent of the potentially exposed cattle population.

In short, we are faced with serious problems regarding the notification system, the forwarding of samples to the laboratories, and the quantity and quality of the vaccines produced in the Region.

Resolution X, Guidelines and Criteria for the Preparation and Evaluation of Brucellosis Control Programs

This resolution is complemented by Resolution II and the Center has already lent effective assistance to the countries who are negotiating loans with the Inter-American Development Bank for the implementation of brucellosis control programs.

Pursuant to this resolution, the Center has collaborated directly with the following countries:

Peru: In the development and evaluation of the program for the control of caprine brucellosis. Rev. 1 vaccine is also being supplied in order to help in controlling the disease in that species.

Argentina: CEPANZO collaborates in the brucellosis control program and conducts studies in an area where brucellosis of goats is prevalent.

Uruguay: The Center has given support to a survey carried out to evaluate the progress attained through the calf-vaccination program. In addition, future activities have been studied and effective assistance has been given for the formulation of a program to be started in April 1972.

Honduras: Joint studies are being carried out with this country for the preparation of a program for the control of bovine tuberculosis and brucellosis.

The Center has also lent assistance to most Latin American countries through the training of personnel and the provision of antigens, reference strains and technical advice.

#### Resolution XI, Planning and Evaluation of Animal Health Programs

This resolution refers to the Course on Animal Health Planning, and requests the Pan American Health Organization, through the Pan American Foot-and-Mouth Disease and Zoonoses Centers, to promote advisory assistance, to the national units for the evaluation of animal health programs.

The Organization has attached paramount importance to the implementation of this recommendation; accordingly, special attention is being paid to the organization of the Second Course on Animal Health Planning, which will be offered at CEPANZO during 1972.

The fact that all the countries are most interested in having their professionals attend this course bears witness to the favorable results expected from this initiative.

#### Resolution XV, Epidemiological Surveillance of Venezuelan Equine Encephalitis

This resolution recommends the Center to start the publication of reports containing all the relevant data obtained through the epidemiological surveillance of this disease in the Americas.

Pursuant to the above-mentioned resolution, a document on epidemiological surveillance was prepared by the Pan American Zoonoses Center which was distributed to all the Latin American countries and, with a view to implementing the surveillance service, during the period August-September,

nine countries were visited by an epidemiologist: Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, and Venezuela. A number of suggestions were received, and during the November-December period, the corresponding forms and final instructions were distributed. The surveillance program was started in January 1972.

On the whole, this new surveillance service is modeled on the system used for the rabies surveillance programs in the Americas, and we believe that it can be expected to go into effect with relative ease.

The participation of the Pan American Zoonoses Center in epidemiological research activities in selected areas will take a long time to materialize since it is apparent that the number of research groups disseminated throughout the Americas have little or no communication with each other, and up to now, no research project has been set up at the continental level.

We trust that the surveillance service will contribute to establish or improve the relationship between researchers from different countries, and that the Center to be established in Maracay, Venezuela in 1972, under the auspices of the Government of Venezuela and PAHO, will be able to start coordinated laboratory and field actions.

#### Resolution XIX, Control of Bovine Tuberculosis

This resolution requested that the Pan American Health Organization coordinate with the Inter-American Development Bank the preparation of "Guidelines and Criteria for Bovine Tuberculosis Control and Eradication Programs" and to include the subject of Control and Eradication of Bovine Tuberculosis in the RICAZ V Meeting.

Through the Pan American Zoonoses Center, the Pan American Health Organization has fulfilled the requests included in this resolution.

#### ANALYSIS OF THE ZONOSSES

##### BRUCELLOSIS

As has been pointed out time and again in previous documents, the available indirect evidence would seem to indicate that brucellosis is a process with deleterious effects on human and animal health and causes heavy economic losses. Although these economic losses are known to be considerable, we lack accurate information on the full impact of the disease and its actual prevalence in most American countries. In order to help improve this state of affairs, the Pan American Zoonoses Center is willing to cooperate in the realization of surveys that would permit assessment of the situation by employing the methods best adapted to each specific case.

The lack of uniform criteria and diagnostic standards has been felt ever since CEPANZO first started to operate and accordingly, during the last years, the Center has paid the greatest attention to those aspects and has contributed to the standardization of the agglutination technique for the diagnosis of animal brucellosis. As far as human brucellosis is concerned, some gaps are still to be bridged and it is worth mentioning that the most developed countries have succeeded in standardizing criteria through their veterinary services. Only a small number of Latin American countries perform quality control tests on antigens and other diagnostic reagents. This is undoubtedly a very complex task, but some countries are already carrying out such control systematically and many others are ready to start doing so in the near future. CEPANZO continues to cooperate with the countries with a view to ensuring the quality of the reagents employed and is evaluating different diagnostic techniques in order to recommend the most sensitive, specific, simple and feasible methods to be used in each case.

As it is obvious that diagnostic techniques should be continually improved, a number of research projects are being carried out at CEPANZO to this end. The postinfection and postvaccination immunoglobulin rates were assessed both for caprine and ovine brucellosis, seeking to differentiate the vaccinal response from that induced by the infection.

Until very recently, the available vaccines were far from satisfactory and there was practically no official control, the product only undergoing, at the most, a superficial analysis when first launched into the market. Some countries have already realized the importance of such services and have set up systems to insure the quality of the vaccines offered for sale, while many others are only now beginning to do so.

The Center has recently carried out comparative studies on the effectiveness of the vaccines commonly used for the prevention of B. melitensis infections in goats. Normal and reduced doses of Rev. 1 vaccine were found to be equally effective while the adjuvanted 45/20 vaccine proved less effective. The accuracy of the diagnostic tests is less affected by the protective antibodies developed by adult goats vaccinated with reduced doses of Rev. 1, with the additional advantage over other vaccines that protection is afforded by the administration of one single dose.

### Training

It is a well-known fact that in most countries there is a shortage of qualified personnel and the Center has therefore assigned high priority to individual and group training through national and international courses. The fact that most professionals responsible for the health campaigns carried out in the different countries have received training at the Pan American Zoonoses Center testifies to the importance of this endeavor.



The following table shows 1969 population figures for some animal species susceptible to brucellosis, in order to bring out the significance of the problem from the point of view of the livestock industry, the need for qualified personnel, and the importance of the technical assistance provided by CEPANZO to the Latin American countries in recent years.

POPULATION FIGURES FOR SOME ANIMAL SPECIES SUSCEPTIBLE TO BRUCELLOSIS  
IN THE UNITED STATES AND CANADA AND LATIN AMERICA, 1969 (IN MILLIONS)

	Cattle	Goats	Swine	Sheep	Total
United States and Canada	124	3.0	63.2	21.0	211.2
Latin America	241	41.4	98.7	129.4	510.5
Total	365	44.4	161.9	150.4	721.7

Source: FAO Yearbook, 1969

As is apparent, Latin America had 282.4 million head of cattle and goats, that is, more than twice the population of the same species estimated for the United States and Canada (127 million).

If the respective figures are added up, we shall see that in 1969 the United States and Canada swine and sheep population was slightly over 200 million head, whereas in Latin America it was well over 500 million. The animal population figures for Latin America, as they appear in the above table, serve to drive home the full significance of zoonoses control activities.

Technical assistance programs consisted mainly in courses and seminars for training in diagnostic techniques, antigen and vaccine production and control, and in the permanent provision of large amounts of biologicals to the countries. In southern South America, there are projects at an advanced stage of development in Argentina and Uruguay, where programs of compulsory vaccination of heifers have been implemented, laboratories for the production of effective vaccines have been installed, and adequate systems for the quality control of biologicals have been set up.

Cuba's program has met with considerable success and complete eradication seems to be close at hand. In Colombia and Venezuela, significant progress has been achieved with the financial assistance of the IDB. Programs have been implemented in southern Brazil and Mexico, and Peru has undertaken the control of caprine brucellosis. The Center provides assistance to the other countries as requested.

A Guide and Criteria for the Planning and Evaluation of Programs for the Control of Bovine Brucellosis has been prepared. The Center works jointly with the Regional Technical Committee on Animal Health (COTERSA) and distributes Technical Notes on vaccine and antigen production, and diagnostic methods.

## HYDATIDOSIS

The research program directed toward the problem of hydatidosis (infection by Echinococcus granulosus) is aimed at improving our knowledge of the prevalence and distribution of this disease in Latin America and its diagnosis, treatment, and control.

The research activities may conveniently be categorized as epidemiological studies, immunodiagnostic studies, development of models of larval infection in laboratory animals, studies of the effects of physical and chemical agents against E. granulosus eggs, drug treatment of worm infections in canines, membrane biochemistry, drug treatment and immunology of the larval parasite.

### Epidemiological Studies

Because of the lack of accurate data concerning the prevalence of hydatidosis in humans in different regions of South and Central America, a major effort of the Center in recent years has been the evaluation of immunodiagnostic tests as epidemiological tools for screening populations and detection of asymptomatic cases. The general modus operandi of these studies have involved skin testing with an antigen prepared and standardized at the Center as an initial screen. Positive skin test reactors and a negative reactor control group comparable in age and sex to the positives were bled and their sera were examined in a battery of serological tests including the indirect hemagglutination, latex agglutination, and immunoelectrophoresis techniques. The entire populations under study received radiographs of the thorax, and serologically positive persons were examined further by clinical means to confirm the presence or absence of cysts. To date more than 10,000 persons from Argentina, Uruguay, Peru, and Bolivia have been studied in this manner. These studies have demonstrated the usefulness and comparability of these immunodiagnostic tests for the described purposes in different areas of Argentina and Uruguay. In the populations studied in Peru and Bolivia, high rates of skin test reactions have been obtained; however, the sera of these persons showed unexpectedly low rates of positive serological reactions, and no cases of hydatid disease have yet been detected. The reason for this is as yet unexplained although the possibility exists that other parasitic diseases, such as cysticercosis, are causing cross reactions with Echinococcus antigens in the skin test.

This possibility is being investigated by systematic study in groups of patients with cysticercosis. In 1972 it is expected that the clinical follow-up of the different populations will be completed, and that a full analysis of the results will be made and published.

In 1971 the Center began collaboration with Uruguay in a survey of hydatidosis in humans as well as in dogs and other domestic and food animals. This study which covers information for a ten-year period, will be completed in 1972.

In 1971 a study of the role of sylvatic animals in the perpetuation and dissemination of hydatid disease was initiated in the Province of Neuquen. Infection was demonstrated in the red fox (Dusicyon culpae) and the European hare. These studies are projected to continue through 1972 to determine the species identification of this parasite and to determine if transmission between these wild animal hosts is independent of the transmission occurring between livestock and dogs. If the studies demonstrate that this is so, it will be necessary to take this fact into consideration in the control of the disease.

#### Immunodiagnostic Studies

An analysis of the theoretical and practical problems in the immunodiagnosis of human hydatid disease demonstrated that variations in methodology and approach among different laboratories militate against the possibilities of standardizing diagnostic criteria.

The Center is sponsoring a series of studies designed to evaluate the relative specificity and sensitivity of the different types of hemagglutination and immunoelectrophoresis tests currently used, in order to determine the most suitable variant of each test. This will enable the establishment of universal diagnostic and evaluation criteria in the diagnosis of this disease. Also the hemagglutination and immunoelectrophoretic test of choice will then be simultaneously evaluated to determine which of the two is most appropriate for the immunodiagnosis of hydatid disease in humans.

A major effort of the Pan American Zoonoses Center has been aimed at the improvement and simplification of diagnostic tests and towards the establishment of standards for their performance and interpretation. If such uniformity were achieved it would greatly facilitate the comparative analysis of results of work carried out at the Center concerning the chemical purification of antigens in sheep hydatid cyst fluid and its evaluation in several diagnostic tests, the evaluation and standardization of an antigen for the intradermal reaction for hypersensitivity, and a modification of the indirect hemagglutination technique which permits prolonged storage of antigen-sensitized red blood cells.

Described above are the studies of the Center designed to evaluate the use of immunodiagnostic tests as epidemiological screening tools. Scientists from Peru and Mexico are presently collaborating with the Center in evaluating crossreactions to these tests in persons with other parasitic diseases.

In 1971 a study was initiated to compare two different antigens in the intradermal test in the same group of patients and healthy persons. One antigen was that prepared at the Center, and the other was prepared and standardized in Uruguay. Plans for 1972 include further studies in the same country. These studies involve an evaluation of the sensitivity and specificity of the hemagglutination and immunoelectrophoresis tests as practiced in the two different laboratories in the same group of patients under controlled conditions, and a comparison of the antigens used in both crude and purified form.

The use of immunodiagnostic tests in sheep has great potential value for epidemiological and control purposes. For this reason the Center initiated a study in 1971 on the use of the intradermal and several serological tests in this specie. These animals are being checked at periodic intervals to determine the effectiveness of the tests.

#### The Development of Models of Larval Infection in Laboratory Animals

Studies performed at the Center in 1971 determined that the laboratory white mouse and the gerbil (Meriones unguiculatus) were highly susceptible to E. granulosus administered orally. As a result of that finding, studies were initiated to evaluate the effect of eggs dose and the age, sex, and strain of the animal, in both mice and gerbils. An additional study was made to determine the cyst growth rate, organ localization, and the host tissue and immunological response to infection in the white mouse. These studies are to be completed in 1972.

#### Studies on the Effects of Chemical and Physical Agents Upon the Survival of E. granulosus Eggs

During 1971 studies were completed and publications prepared on the effect of extremes of temperature and ionizing radiation on E. granulosus eggs. The experiment employing ionizing radiation was then extended to include higher radiation doses and eggs of different storage times.

It was also shown that the anthelmintic drug bunamidine hydrochloride had a marked detrimental effect on E. granulosus eggs. These studies are being continued through 1972 to determine the mechanism of this activity.

CEPANZO has turned its attention to the development of an effective chemotherapy against the hydatid cyst in domestic animals and man, and against the adult tapeworm in the dog.

Many promising drugs have been screened in our laboratories against infections in dogs, several of which have proved to be relatively, but not totally, effective in field trials. The search for more effective drugs in the dog therefore continues with further testing of effective drugs in our field station in Azul.

Attempts at treatment of hydatid cysts in man and animals have been sporadic in the past and have been, at best, only partially successful. These studies have, for the most part, been empirical in design, i.e., a drug that worked well in another parasitic disease was tried against hydatid disease - and their subsequent failures have told us little about the defense mechanisms of the hydatid cyst.

The major problem in the therapy of this disease lies in the selective permeability of the cyst membranes to only essential nutrients. Before a rational chemotherapy could be planned, one had first to understand the permeability characteristics and transport mechanisms in the cyst walls. These characteristics are at present being studied in our laboratory with the aid of organic solvents and radioisotopes.

It was further recognized that in order to effectively treat hydatid cysts we would have to know enough about their metabolism to take advantage of critical differences between the host and the parasite. Much work in this area has been accomplished by others, but as yet no one area of critical difference has been able to be detected and exploited. We plan to continue, therefore, our studies in hydatid metabolism, looking particularly at the area of protein and nucleic acid synthesis.

It is hoped, then, that information gained from these permeability and metabolism studies will allow us to design a rational chemotherapy against hydatid cysts in animals and man.

Another aspect of investigation is concerned with the immunological factors responsible for the survival and persistence of cysts in their host. The immunological mechanisms responsible for cyst rejection will be studied, and attempts will be made to induce an adverse reaction which results in elimination or sterilization of the parasite. Steps along these lines will be taken during the current year.

#### Field Services Activities

In 1971 the Center actively collaborated with the Governments of Argentina, Uruguay, and Peru in the planning, design, and execution of pilot hydatidosis control programs.

Argentina: The pilot control program carried out in part of the Province of Neuquen and initiated in 1970 was developed in close collaboration with the Center. During 1971 advisory services concerning the

execution and evaluation of progress were provided. The Center further collaborated in two research projects related to this program; they were a study of infection in wild animals and the prevalence of the disease on the human population resident in the control zone, utilizing immunodiagnostic tests. During 1972 the Center will continue to assist this program in a similar manner.

Uruguay: The pilot control program initiated in 1970 in the Department of Flores was developed in close collaboration with other consultants of the Organization. During 1971 the Center continued to provide advisory services concerning the execution and evaluation of progress, collaborating in a seroepidemiological survey of the human population within the control zone and assisting in the design of the extension of the pilot project to the national level, and the preparation of a loan request to the Inter-American Development Bank for assistance in the financing of the control project.

Peru: In March 1971, at the request of the Government, visits were made to Peru for the purpose of evaluating the problem of hydatidosis and to make recommendations for the initiation of a pilot control project in the Central Sierra.

A survey was initiated among different communities to determine the human prevalence of infection utilizing immunodiagnostic tests. This study is to be continued in 1972.

#### LEPTOSPIROSIS

Leptospirosis is a major problem in cattle and swine and is important to the economy and public health. The disease is widespread and most likely exists in all of the countries of Latin America. Further problems are presented by the wide distribution of leptospiras in a variety of wild animal carriers. Aside from a few Latin American countries in which leptospirosis has been demonstrated, there is at present little information on the prevalence and distribution of serotypes. In many countries the existence of leptospirosis is unknown, the economic losses attributed to the disease in domestic animals are also unknown, and the availability of a diagnostic laboratory is rare.

The importance to public health can be dramatically illustrated by the present situation in Barbados. In a 12-month period there have been 28 admissions of confirmed leptospirosis cases at the government hospital, resulting in 14 deaths. Today, neither the Leptospira serotype causing the human infections, nor the source of these infections is known. A survey initiated by the Center shows significant leptospiral antibody in cattle to be 60 per cent.

Estimates on economic losses due to animal infection by country are not known, however serological testing done at CEPANZO on over 2,000 bovine sera from Argentina representing several climatical zones, showed a very high rate of reactors. Similar observations were made in domestic animal sera from Bolivia where previously leptospirosis was unknown.

Attempts at culture isolation using pig kidneys obtained from slaughterhouses in Latin America have shown a high incidence of Leptospira. Leptospiras have also been isolated from a number of wild animal reservoirs.

The leptospirosis laboratory at CEPANZO acts as a reference center for Latin America. In this function, the laboratory maintains a complete collection of reference Leptospira serotypes and corresponding antisera for distribution to the countries as diagnostic facilities become established.

Perhaps the most important activity in the field of leptospirosis is centered on individual training in all phases of laboratory diagnosis. This training in diagnostic procedures and techniques promotes the establishment of diagnostic central laboratories which provide practicing physicians and veterinarians with diagnostic services in countries where previously there were none. As a result of this training, diagnostic services are now available in Argentina, Barbados, Brazil, Colombia, Ecuador, Mexico, Paraguay, Peru, and Venezuela.

The Center also provides serological diagnostic testing of sera from human and animal origin to the countries that do not have the facilities at present for testing. For those countries in which diagnostic services are available, the Center offers the service of definitive classification of Leptospira strains isolated by cross agglutinin absorption procedures, advisory or collaborative efforts in the field of control, epidemiology, and the ecology of reservoir hosts.

#### FOOD MICROBIOLOGY

As has often been pointed out at previous RICA5 meetings, Latin America occupies a total area of 20.5 million km<sup>2</sup>, 5.3 million being pasture lands, and out of which 2 million km<sup>2</sup> are exploited. In 1969 the Latin American cattle population amounted to 241 million, which represents an average of one bovine per hectare. In addition, there were 129.4 million sheep, 98.7 million pigs, and 41.4 million goats, as well as over 500 million hens.

In 1968 FAO estimated that the world production of bovine meat was 35 million tons, 6.2 million of which came from Latin America. In that same year 375 tons of bovine milk were produced, Latin America accounting for 22.5 millions. In the long run, the growth rate of production tends to be slower than that of the population, and productivity is affected by

several factors: food deficiency, diseases, low genetic level, deficient administration and management practices, and several economic and institutional shortcomings. It should be borne in mind that health campaigns may reduce the impact of zoonoses on meat and milk production. The production of bovine meat and milk could be substantially increased if foot-and-mouth disease, brucellosis, mastitis, hematozoon infections, and ectoparasites were brought under control.

With minor variations, everything that has been said regarding bovine meat and milk holds true for other foods as well.

It is a wellknown fact that Latin American countries take an active participation in the international trade of meat and its byproducts, and that the importing countries impose increasingly stringent sanitary requirements. Latin American countries have often been blamed by the developed countries for the increasing incidence of foot-born toxoinfections, particularly salmonellosis due to meat, fish, and other products. The existence of more stringent sanitary regulations in the developed countries has brought about serious losses due to the rejection or reprocessing of contaminated products and the consequent decline of the demand, oriented towards other geographical areas.

The Latin American countries would be in a position to meet the hygienic requirements for imported foods set by the importing countries if they had an adequate number of well-trained professionals and laboratories for microbiological control.

As was mentioned above, there is a great incidence of food-borne toxoinfections both in the importing and the exporting countries, infant diarrheas due to Salmonella infections being a case in point.

From the foregoing considerations it follows that CEPANZO's chief concern is to train personnel in food microbiology and hygiene. Accordingly, during 1971, 26 courses were offered in different countries. In addition, four Technical Notes on meat inspection were prepared, abundant reference material was distributed and advice on this subject was furnished to several countries. With regard to research, most of our efforts have focussed on the contamination with salmonellas of horse meat, beef, pork, and other kinds of exports. The hygienic condition of shellfish and some widely consumed drinks has also been studied.

Another line of research to which great importance has been attached is that aiming at the establishment of certain transference factors of antibiotic resistance in intestinal bacteria of human and animal origin (bovine, swine, equine, and fowl). This investigation seeks to establish whether certain nonpathogenic bacteria may transfer their natural drug resistance to some bacterial pathogens, thus giving rise to a difficult therapeutic problem. One of the reasons for this possible transference



may lie in the excessive use of antibiotics in animal foods and the abuse of chemoprophylaxis. Disturbing evidences have been found in England and the United States of America; the purpose of CEPANZO in undertaking these studies is to be able to give advice on the subject and, if necessary, to suggest to the countries that they reconsider their existing regulations.

## RABIES

In Latin America, rabies continues to be a major problem affecting both human and animal health and imposing a heavy burden on the economy of the livestock industry. The epidemiology of the disease in the northern area of the Continent (United States of America and Canada) varies widely from that in Latin America. Thus, for example, the rate of occurrence of rabies in dogs and humans is 70 times and 100 times higher, respectively, in the Latin American countries than in the United States and Canada. With regard to bovine rabies, the proportion is seven times higher in Latin America. Striking differences can be observed between the northern and southern areas of the American continent, with respect to the accuracy of the diagnosis, the notification system, the quantity and quality of the vaccines, and health education. As far as wildlife rabies is concerned, over 90 per cent of the overall number of cases is reported by the United States and Canada, in sharp contrast with the situation reported in Latin America. The purpose of the following activities carried out by CEPANZO is to help improve the situation described above.

### Reporting

The first RICA5 meeting, held in 1968, recommended the establishment of the surveillance service which, by next June, will have been in operation for three years. Progress can be observed in the quantity and quality of the reports. The availability of more reliable information has made it possible to formulate more rational policies for the control of the disease in the Americas, and significant progress has been made in the Latin American area.

### Diagnosis

The rabies diagnosis laboratory occupies a place of prime importance in the organization charged with control of the disease. The physicians who treat persons exposed to suspicious animals depend on the laboratory to decide if they should or should not continue with a vaccination schedule, which is not without its risks. On the other hand, those in charge of rabies control and evaluation of programs also depend on the laboratory to confirm whether or not there are cases of rabies in the animal population.

To be efficient, laboratory methods should be sensitive, specific, and rapidly executed. In this way, interested parties can receive results in the shortest possible time and take whatever action is indicated for the human or animal population.

Three types of laboratory methods are used for the diagnosis of rabies; direct stain (Sellers, Mann, Faraco, etc.), animal inoculation, and fluorescent antibody. This last method is as sensitive and specific as the animal inoculation test and much more sensitive than the methods of direct staining. Moreover, with fluorescent antibody it is possible to obtain quicker results than with animal inoculation and the majority of the methods of direct staining.

Considering these factors, CEPANZO has promoted, starting in 1965, the adoption of the fluorescent antibody technique for all rabies laboratories of the Hemisphere. Activities toward this end have increased in the last five years (1967-1971) and have consisted in offering training to professionals in charge of rabies diagnosis, advice to field laboratories, providing the required reagents for the fluorescent antibody test, and acting as reference laboratory when this has been necessary.

Training in the use of the fluorescent antibody technique should be done in laboratories with several years of experience in this method. CEPANZO, during the previously mentioned five years, has offered individual training to 45 professionals from 16 Member Countries. Likewise members of its personnel have participated in the direction of five national courses on rabies diagnosis, held in four countries, with the attendance of 73 professionals.

The efficiency of some of those professionals in their own laboratories, as well as other laboratories using the method, was evaluated in 1969 by sending coded samples for the performance of the fluorescent antibody technique. The results received identified some laboratories which had problems with the method. These laboratories were visited and the problems corrected, resulting in improved diagnosis. This advice in the field on the part of CEPANZO personnel was offered to 14 laboratories belonging to seven the Member Countries.

The reagent necessary for performing the fluorescent antibody technique is antirabies conjugated, consisting of rabies antibodies marked with a fluorescent substance, fluorescein isothiocyanide. There are few laboratories that use the technique and can also produce their own conjugate; the great majority must obtain the product from commercial sources which is costly for one thing, and runs the risk that the product will be altered during shipment. The Center produces a conjugate of very high titre, which is distributed without cost to those laboratories which request it. In the last five years, the Center has provided conjugate to 50 laboratories of 19 Member Countries. The majority of these laboratories use the conjugate as a reference reagent but 17 of them are using it for routine diagnosis.

According to answers from a survey of rabies diagnosis laboratories made by the Center in 1968, there were 26 laboratories that used the fluorescent antibody technique in 13 countries of the Hemisphere, excluding the United States and Canada. At the present time it is estimated that there are at least 66 laboratories that use the method in 19 countries, again excluding the United States and Canada. The Center has cooperated in the establishment of 55 of these 66 laboratories through training, advice, or provision of reagents.

In spite of this action by the Center and the countries in reference to rabies laboratory diagnosis, it is known that more than half of the rabies cases which occurred in Latin American countries were not laboratory confirmed. This indicates that measures should be adopted to organize the shipment of samples to the laboratory, to increase the number of laboratories where necessary, and to improve the equipment of the existing laboratories to bring about laboratory confirmation of all rabies cases.

#### Vaccines

The Center performs the reference control of antirabies vaccines, 56 batches of which were received last year from 11 countries. Results obtained were as follows: 21 (84 per cent) out of 25 batches of vaccine for human use, 19 (91 per cent) out of 21 for canine use, and 2 (20 per cent) out of 10 for bovine use, were found to be satisfactory. A survey on the production of antirabies vaccine for human and animal use was conducted in 1971 through the PAHO Zone Chiefs and Country Representatives. Information on 48 laboratories producing vaccines was received from 13 countries. A breakdown of the production of these laboratories is given below:

(a)	Vaccine for human use, Semple type	811,012 doses	
	Suckling mouse brain type	3,110,000 doses	
	Sub-total		3,921,012
(b)	For canine use, LEP type	1,240,000 doses	
	Suckling mouse brain type	2,134,000 doses	
	Sub-total		3,374,000
(c)	For bovine use, HEP type	3,400,000 doses	
	Formidogel	1,305,000 doses	
	Glycerofenicated and Kelser	507,000 doses	
	ERA	500,000 doses	
	Suckling mouse brain type	220,000 doses	
	Sub-total		5,932,000
	Total production of vaccines for human and animal use:		13,227,012
			=====

Attention should be drawn to the fact that the Center gives permanent assistance in the production and quality control of vaccines for use in man and animals, and seeks to establish standardized schedules for antirabies prophylaxis in man and to obtain better biologicals.

#### Technical Assistance

During the last years the Center has participated in programs for the control of urban canine rabies in the cities of Buenos Aires, Misiones, Rio de Janeiro, São Paulo, Curitiba, Vitoria, Porto Alegre, Cali, Lima, Callao, and Santiago de Chile. In this connection, the Center's policy is to control urban canine rabies in a selected group of Latin American cities; the implementation of regional or national programs is to be undertaken in the future. With regard to advice on bovine rabies, the Center has cooperated in the study of outbreaks appearing in several countries and has emphasized the need to carry out ecological studies in Argentina and Brazil.

Bovine paralytic rabies has an extensive geographical distribution and constitutes a very serious problem for Latin America. The principal vector of the disease, the vampire bat (Desmodus rotundus), is distributed from Mexico to Argentina, resulting in a potential threat throughout this great geographical area. Cattle are succumbing and man is responding with control and research efforts in such widely separated countries as Mexico, Trinidad, Peru, Brazil, and Argentina. The program in CEPANZO concerned with the ecology of bovine paralytic rabies centers on applied research directed toward control of vampire bats in direct collaboration with the Servicio de Luchas Sanitarias (SELSA) of the Ministry of Agriculture of Argentina.

Investigations of vampire bats revealed in greater detail the distribution of the species in northern Argentina, including the tendency to utilize different types of roosts according to habitat. In the thorn-scrub Chaqueño desert, vampire bats roost exclusively in water wells. Advantage was taken of this finding and more than 95 per cent of the bats were exterminated in an experimental control area 30 by 50 kms in size. The control area was located in Santiago del Estero in the path of a slowly advancing wave of bovine paralytic rabies, which has been moving steadily southward for the past several years. The effectiveness of the control effort should become apparent during the coming year.

A relative census for vampire bats was developed and applied in various habitats, with success. A total of more than 25 such censuses have revealed considerable variability in bat density correlated with habitat and land use practices. Vampire bats appear to abound in areas which provide many roosting sites and a more than adequate food supply (cattle). Such areas typically are characterized by many wooded lots scattered in grazing land, or abundant pastures breaking up the predominant forest, both

instances providing a maximum of forest-pasture ecotone.\* Censuses have shown other habitats such as forest or thorn-scrub desert to harbor lesser densities of vampires and in some areas, well within the distribution of the species, there are apparently no vampires, probably due to a lack of roosting sites. Such information, as it accumulates, should aid future vampire bat control programs in directing efforts toward areas where the need is greater.

Future plans include extension of the control area in Santiago del Estero westward through the Province of Tucuman, including habitats where new methods of vampire bat control will have to be applied. The extension of the control area has the possibility of arresting the advancing wave of bovine rabies. Many more relative censuses in various parts of the range of the species will be needed before statistical analyses may be applied to the data, extending knowledge of relative density of vampire bats throughout the distribution of the species in Argentina. Investigations will center on new methods of control, applying information obtained through studies of the behavior of vampires.

#### Research

Twenty-two projects basically related to diagnosis and vaccines and to the epidemiology and ecology of wildlife rabies are being carried out by the Center. Eight projects were completed in 1971 and nine papers were prepared, six of which were published in different journals.

### TUBERCULOSIS

#### Introduction

Bovine tuberculosis is one of the most important diseases in the American countries. It is a zoonoses that has serious economic and public health implications.

The value of a bovine animal with tuberculosis has been estimated by the Joint WHO/FAO Expert Group on Zoonoses (1950) to be reduced by 10 to 25 per cent. Cattle with tuberculosis are also an important source of infection for other livestock, particularly swine, in which the disease causes severe economic losses.

Tuberculosis in cattle is, of course, an important source of infection for man, who becomes infected by eating contaminated meat, milk, or other dairy products, or by direct contact.

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\* The zone where two different ecosystems meet

The principal objective of the tuberculosis project at the Zoonoses Center is to provide advisory and technical services to the governments of the Hemisphere in the planning, organization, execution, and evaluation of programs for the control and eradication of bovine tuberculosis, in order to protect human health and the economy and to increase food production.

#### Recent Activities

A reference laboratory for the classification of mycobacteria, and a pilot plant for the production of purified protein derivatives (PPD) of tuberculin have been established at the Center, to support the advisory services, and for purposes of training and of supplying reference materials to the countries of the Region.

#### 1. Field and Laboratory Advisory Services

The First International Seminar on Bovine Tuberculosis for the Americas, organized by the Organization and coordinated by the Center, was held in Santiago, Chile from 21 to 25 September 1970. The purpose of the Seminar was to encourage the initiation of national campaigns against bovine tuberculosis, and to help the countries coordinate their activities on tuberculosis control by establishing uniform procedures. Thirty participants and 10 observers from 18 countries attended, as well as 10 consultants from the Americas, Australia, and Europe.

The Center's specialist has also participated in other international and national meetings and visited several countries in the Region to advise the animal and public health authorities on the production and standardization of tuberculin, the technique and interpretation of the tuberculin test in cattle, the planning of control and eradication programs against bovine tuberculosis, and the setting up of mycobacterial diagnostic laboratories.

#### 2. Laboratory Services

Reference Diagnosis of mycobacteria is carried out on material received from various veterinary and public health sources.

Quality Control of Biological Products. Tests are done for quality control of tuberculin and BCG vaccine produced by national and commercial manufacturers.

Reference Tuberculins. Batches of PPD have been produced at the Center and are being standardized for use as the first PAHO reference preparations for PPD of avian and mammalian tuberculins.

#### 3. Field Research

A national tuberculin survey in cattle in Argentina, carried out by SELSA with the planning and technical assistance of the Center, has been

completed. The mean prevalence of positive tuberculin reactors varied, according to the type of exploitation, from approximately 2.5 per cent in breeding farms to 8 per cent in dairy cattle. Approximately 40 per cent of farms had positive reactors. After full assessment, these results will provide the factual basis for the planning of the national program of bovine tuberculosis eradication in Argentina.

Pilot studies have been carried out in Argentina, correlating the results of tuberculin tests in cattle with post-mortem findings. The aim of this work has been to establish methods for determining more refined criteria for the interpretation of the tuberculin test in varying environments in the different countries of the Region.

#### 4. Laboratory Research

A study has been carried out of the species distribution of mycobacteria in pigs. Tissues from pigs with macroscopic lesions suspected of being tuberculous at regular-kill meat inspection were randomly sampled and examined for mycobacteria. Of the mycobacteria isolated, 83 per cent were identified as M. bovis, 0.6 per cent as M. avium and 16 per cent as saprophytic and other mycobacteria. This high prevalence of M. bovis infections confirms that the main source of mycobacterial disease in pigs is from cows' milk. This is of particular importance in our Region, where it is customary to feed pigs with the by-products of the dairy industry.

Work is being completed on the examination of milk samples and slaughterhouse specimens from cattle suspected of being tuberculous, in a study to compare the efficiency of different culture media, and of different methods of decontamination by chemical treatment. The aim is to determine the most satisfactory technique for use in small tuberculosis laboratories with limited facilities for animal inoculations.

### TRAINING AND TECHNICAL INFORMATION

#### A. Training Program

The Center continues to attach high priority to the training of professional and technical personnel, both in the laboratory and field aspects. At present, there is a great shortage in Latin American government agencies, as well as in teaching institutions, of professionals trained in zoonoses control and research. The Pan American Zoonoses Center is the only training center in this field, since nowhere else in Latin America are there other institutions of its kind.

The Center's courses are offered in Spanish, or simultaneously in Spanish and English, which is a great advantage for Latin American professionals. Since several English speaking countries have now joined PAHO,

and there is an increasing number of consultants who do not speak Spanish, simultaneous interpretation is currently supplied for most of the Center's courses.

The Center provides individual as well as group training through national or international courses and seminars offered in the fields of: breeding and handling of laboratory animals, brucellosis, food microbiology and hygiene, hydatidosis, leptospirosis, rabies, and tuberculosis.

During 1971, 54 professionals and technicians received individual training at the Center on a variety of topics within the field of zoonoses. Of the 54 fellows, 26 were from Argentina and the remaining 28 from 14 other countries. This was a significant increase compared with 1970, when only 30 fellows (from 10 countries) underwent training.

During the same year, the Center either organized or took part in 8 international and 13 national courses or seminars (Tables No. 3 and No. 4). The 701 professionals who attended these courses (203 and 498, respectively) represented almost every American country.

Training in animal health planning was incorporated in 1971. Special importance was attached to this new teaching field as it was the answer to a deeply-felt need of all the countries. The great interest that the governments have displayed in organizing national programs for the control of animal diseases (zoonoses and foot-and-mouth disease) and the support they have found in this connection on the part of the international credit agencies bear witness to the pressing need to train veterinarians in planning methods. The IV Inter-American Meeting on Foot-and-Mouth Disease and Zoonoses Control voiced this need and recommended that PAHO increase its collaboration with regard to training in animal health planning.

The first course on animal health planning was offered at CEPANZO from 19 April until 10 December under the joint sponsorship of the Pan American Zoonoses Center and the Foot-and-Mouth Disease Center. The name of the course was "Study Group on the Programming, Evaluation, and Administration of Health Campaigns." The results obtained with this first group were most satisfactory and laid the foundations for the collaborative organization of future courses in the same field.

A course on animal health planning will be offered at CEPANZO from 15 May to 15 December 1972. The Center is also expected to participate in the National Seminar on Brucellosis to be held in Cuba in May, and it will also take part in the organization of a course on the diagnosis of brucellosis to be held in Mexico next June. National courses on hydatidosis will be offered in Montevideo, Uruguay, in September, and in Neuquen, Argentina, in November. Two courses on food microbiology have been planned for this year, one to be offered in Bahia Blanca, Argentina, and the other in Rio de Janeiro (or in Brasilia), Brazil.



TABLE 3

INTERNATIONAL COURSES AND SEMINARS, 1971  
(ORGANIZED BY CEPANZO OR TAUGHT BY ITS STAFF)

Subject	No. of Participants	No. of countries represented	Place and Dates
Animal Health Planning	13	9	CEPANZO 19 Apr - 10 Dec
International Course on Food Microbiology	21	12	CEPANZO 23 Aug-3 Sep
Course on Food Hygiene School for Agricultural Sciences	18	5	Bs.As., Arg. Jul-December
Regional Seminar on Rabies	59	13	Port-of-Spain, Trinidad and Tobago 25-28 October
Seminar on the Financing of the Public Health Sector	15	7	Bs.As., Arg. 20 Sep-15 Oct.
International Course on Food Sanitary Control	20	13	Caracas, Ven. March-December
XV Regional Dairy Training and Demonstration Course (organized by FAO and sponsored by the Danish and Chilean Governments)	33	14	Santiago, Chile May-June
XVI Regional Dairy Course sponsored by FAO	24	11	Santiago, Chile Sept.-December

TABLE 4

NATIONAL COURSES AND SEMINARS, 1971  
(ORGANIZED BY CEPANZO OR TAUGHT BY ITS STAFF)

Subject	No. of Participants	Place and Date
National Course on the Diagnosis of Leptospirosis	10	Bogota, Colombia 25 January - 5 February
National Course on Brucellosis	17	Maracay, Venezuela 10-28 March
3 Courses on Professional Specialization and Training in Meat Inspection	40	Bs. Aires, Argentina June, July & September
First National Dairy Training Course	30	Bs. Aires, Argentina 19 April - 15 May
Refreshment Course on Rabies	24	Sto. Domingo, Dom. Rep. 8-12 March
Course on Immunofluorescence in the Diagnosis of Infectious Diseases	12	Bs. Aires, Argentina 27-28 July
Course on Production and Handling of Laboratory Animals	18	Maracay, Venezuela 1-14 August
Course on Rabies	120	Lima, Peru 18-22 October
II National Seminar on Hydatidosis	41	Neuquen, Argentina 10-14 October
First National Seminar on Venezuelan Equine Encephalitis	111	Bogota, Colombia 21-24 November
Theoretical and Applied Course on Food Hygiene and Microbiology	20	Montevideo, Uruguay 15 Nov. - 2 December
Course on Food Hygiene	35	Havana, Cuba 1-13 November
Course on Food Microbiology	20	Santiago, Chile 15 Nov. - 3 December

Table 5 shows the national and international courses projected for 1973-1976. As is apparent, the training program has been substantially expanded in order to meet the needs of the countries undertaking animal health programs at the national level.

As of this year, upon approval of the UNDP Regional Project, the Center will have at its disposal a special allotment for fellowships to be granted for either individual or group training. This will greatly benefit CEPANZO's training program.

#### B. Technical Information Program

The provision of technical information is another of the Center's activities which has interested the countries to the extent that they have requested its expansion.

The Center currently publishes: (1) Zoonoses, a quarterly bulletin in Spanish and English distributed among 2,500 institutions and individuals; (2) Technical Notes, containing detailed descriptions of diagnostic techniques, production methods for vaccines and antigens, guidelines for veterinarians engaged in meat inspection, etc. (14 issues have been published so far, 4 on brucellosis, 4 on rabies, 1 on leptospirosis, and 5 on meat microbiology and hygiene); (3) Epidemiological Surveillance of Rabies, a monthly bulletin with a biannual supplement, issued in Spanish and English.

Scientific monographs began to be published in 1971 to enable Latin American professionals to keep up to date with regard to certain topics in the field of zoonoses. Two titles have already been published:

- Soave, Dr. O. A., Infectious Diseases of Laboratory Animals
- Acha, Dr. P. N., Consumption and Hygiene.

Six other papers have been selected for inclusion in this series and will come out in the future. Up to now, these monographs and the Technical Notes have appeared only in Spanish, but the idea is to publish them in English as well in the near future.

The Catalog of Periodicals Available at the Library of the Pan American Zoonoses Center was also published in 1971 and distributed to all the medical and veterinary libraries throughout the Continent.

The Proceedings of the First International Seminar on Bovine Tuberculosis for the Americas is currently being prepared and will be published both in English and Spanish. It will serve as a valuable reference tool for all those concerned with the control of animal tuberculosis.

TABLE 5

NATIONAL AND INTERNATIONAL COURSES PROJECTED FOR 1973-1976  
(ORGANIZED BY CEPANZO OR TAUGHT BY ITS STAFF)

		1973	1974	1975	1976
<u>Brucellosis</u>	N	Bogota	Caracas	Brasilia	Lima
	IN	Guatemala		R. Mejia	
<u>Rabies</u>	N	Guayaquil	Bogota		Mexico
	IN		R. Mejia		Guatemala
<u>Hydatidosis</u>	N	Lima		Santiago	
	IN				R. Mejia
<u>Tuberculosis</u>	N		Lima		Havana
	IN			Caracas	
<u>Leptospirosis</u>	N		Bahia		Barbados
	IN	Port-of-Spain			
<u>Food Hygiene and Microbiology</u>	N	Montevideo	Lima	Medellin	Mexico
	IN		R. Mejia		
<u>Production and Handling of Laboratory Animals</u>	N	Bogota		Mexico	
	IN				
<u>Animal Health Planning*</u>	N				
	IN	R. Mejia	R. Mejia	R. Mejia	R. Mejia

\*Together with the Pan American Foot-and-Mouth Disease Center  
Abbr.: N = National      IN = International

The publication of a bulletin on the Epidemiological Surveillance of Venezuelan Equine Encephalitis is also to be started in the near future. Pursuant to Resolution XV of the IV International Meeting on Foot-and-Mouth Disease and Zoonoses Control, the first steps to establish a surveillance system were taken.

#### TECHNICAL ASSISTANCE SERVICES

One of the principal objectives of the Regional Project is the reinforcement of the technical assistance services in support of the countries' control programs. More than 40 per cent of the budgeted funds are destined to these activities, as much to field as to laboratory aspects.

##### A. Field Services

During the year 1971, the Center's professionals were sent to 14 countries to lend assistance or collaboration in the most varied of field and laboratory aspects of the zoonoses. Table No. 6 enumerates the principal programs with which CEPANZO has collaborated. Likewise, during the past year, there was a notable increase in aid by correspondence with almost all of the Member Countries.

At the multinational level rabies surveillance was continued and now has been in effect for two and a half years. In accordance with the recommendations of the previous meeting, preparations are under way to establish a Pan American surveillance for equine encephalitis. We hope, judging from the good reception by the countries, that in the course of the present year we will be able to publish the first bulletin with information submitted by the ministries of agriculture and health.

According to the wishes expressed by the countries, direct technical assistance, that is, on the spot aid, will be increased. Special attention will be given to assistance and development of projects for national programs of control of zoonoses such as brucellosis, tuberculosis, bovine rabies and hydatidosis. The fact that the IDB has approved financial assistance to various countries will serve as an incentive for other governments to undertake the development of control programs. The Center is planning to collaborate in the preparation of petitions for loans from international credit organizations. Besides the specialists in the different zoonoses, the Center employs an expert in programming (who is shared with the Pan American Foot-and-Mouth Disease Center), and is going to incorporate in its personnel a biostatistician, a chief of training, and a counsellor for control programs.

##### Course in Planning in Animal Health

In virtue of the previous comments, special emphasis has been given to the Course in Planning in Animal Health. This course was completed

TABLE 6

FIELD SERVICES, 1971

Country	Assistance in the Following Programs
Argentina	<p>Survey of caprine brucellosis and planning of a control program</p> <p>Control and eradication of bovine brucellosis (Santa Fe)</p> <p>Pilot plan for hydatidosis control (Neuquen)</p> <p>Epidemiologic studies on sylvatic hydatidosis</p> <p>Control of canine rabies (Gran Buenos Aires and Misiones)</p> <p>Epidemiological studies of bovine rabies</p> <p>Ecological investigations of vampire bats (Misiones and Tucuman)</p> <p>Project for demonstration of control of bovine tuberculosis</p> <p>Organization of a Laboratory for Food Microbiology Control (Secretary of Public Health)</p> <p>Breeding and handling of laboratory animals</p>
Barbados	<p>Diagnostic methods in leptospirosis</p>
Brazil	<p>Canine rabies control program (Rio de Janeiro, São Paulo, Curitiba, Vitoria, Pôrto Alegre)</p> <p>Breeding and handling of laboratory animals (Pôrto Alegre and São Paulo)</p>
Chile	<p>Programs in canine rabies eradication</p> <p>Production of tuberculin PPD and control programs</p>

TABLE 6 (cont.)

FIELD SERVICES, 1971

Country	Assistance in the Following Programs
Colombia	<p>Production of <u>B. abortus</u> vaccine (strain 19) (Empresa Colombiana de Productos Veterinarios)</p> <p>Control of biologicals</p> <p>National brucellosis program</p> <p>Canine rabies control program (Cali)</p> <p>Organization of a Central Laboratory for Food Microbiology Control</p> <p>Breeding and handling of laboratory animals</p>
Cuba	<p>Rabies diagnosis (especially fluorescent antibody technique)</p> <p>Preparation of tuberculin PPD (Havana)</p> <p>Breeding and handling of laboratory animals</p>
Dominican Republic	Rabies diagnosis (especially fluorescent antibody technique)
El Salvador	Diagnosis and programing of brucellosis control
Mexico	<p>Coordination of FAO/UNDP and PAHO/UNDP projects on bovine rabies</p> <p>Rabies diagnosis (especially fluorescent antibody technique)</p> <p>Production and control of rabies vaccine</p> <p>Control and eradication program for bovine tuberculosis</p>

TABLE 6 (cont.)

FIELD SERVICES, 1971

Country	Assistance in the Following Programs
Panama	Rabies diagnosis (especially fluorescent antibody technique)  Bovine and swine brucellosis eradication program
Peru	Control and production of rabies vaccine (Lima)  Caprine brucellosis control program  Pilot plan for control of hydatidosis in the Sierra Central  Epidemiological investigation of human brucellosis in Puno  Canine rabies control program in Lima and Callao
United States of America	Uniform procedures and criteria for control and eradication programs for bovine tuberculosis
Uruguay	Pilot plan for control of hydatidosis (Dpto. de Flores)  Study of a national program for control of hydatidosis
Venezuela	Production and control of rabies vaccine (Caracas)  Breeding and handling of laboratory animals



under the auspices of the Pan American Zoonoses Center and the Pan American Foot-and-Mouth Disease Center and took place in Ramos Mejia, Argentina.

The Course lasted 36 weeks and included the collaboration of counsellors of the Latin American Institute of Planning, the Program of Planning in Health, other organizations both international and national, as well as professionals of the aforementioned Centers.

By means of this training, the Organization is providing to the countries a group of veterinarians skilled in the modern techniques of planning. These professionals will be able to act in positions of high administrative responsibility and will have a role of the utmost importance in the planning and development of animal health programs and in the integration of these in the general context of the development of their countries.

This type of course favors the interests of the governments of the Region by strengthening animal health campaigns oriented towards reducing the adverse economic effects of diseases of livestock. The Inter-American Development Bank has agreed to provide the necessary technical and financial assistance to the governments to control these diseases. This course will increase the availability of advisors in this new field of specialization in veterinary medicine.

Evidence exists of the need, according to these new programs, for professionals skilled in planning, to execute and evaluate these important projects. This type of professional has not been produced by the universities. The Organization has had to develop him out of the urgent need of the programs that must be carried out in the majority of Latin American countries today.

This year this course will present that which has been previously outlined, and offers the following:

- (a) Training in the concepts of economic and social development and in planning techniques;
- (b) Training of veterinarians in relation to methods of planning and administration of animal health programs;
- (c) Facilitating the exchange of experience and information on animal health problems, within the context of economic development, between the Latin American countries;
- (d) Contributing to the improvement of techniques in programming and administration of programs in the field of animal health.

All the efforts of this new line of activity pertain to the endeavors of the World Health Organization. At the 49th Meeting of the Executive Board, 26 November 1971, the Director General presented a report on the Social and Economic Consequences of the Zoonoses in which the need was indicated for coordinated action with FAO in the execution of pilot studies in selected zones to formulate methods and criteria applicable to surveillance of the zoonoses and evaluation of programs undertaken to combat them. Likewise, in this document reference is made to the application of modern economic methods to measure the repercussions of the zoonoses on the health and productivity of man and on the productivity of domestic animals.

B. Laboratory Services

The Center has considered the provision of technical assistance relating to laboratory aspects to be of fundamental importance to the countries of the Americas. The goal is standardization of diagnostic methods and production and control of biological products employed for use in diagnosis and prophylaxis of the zoonoses.

CEPANZO maintains these activities of technical assistance, providing to the countries satisfactory biological products, especially reference biologicals, with the purpose of increasing the production.

A requirement for developing zoonoses control programs is the guarantee that the antigen, allergen, and vaccine production is of good quality and adequate for the health programs.

The laboratories of CEPANZO have distributed, and continue to distribute, numerous reference products to the countries, such as brucella antigen (rapid and slow agglutination, ring test), mammalian and avian tuberculin PPD, Casoni and latex antigen for hydatidosis, fluorescent antibody conjugate for rabies, gamma globulin for special projects, microbiological, virological and cell strains for production and control of antigens, allergens, and vaccines. Numerous laboratory animals selected as reproductive stock for new animal colonies have also been distributed to several countries.

Indicated in Table 7 are the biological products produced by CEPANZO, including quantities distributed in 1971. Emphasis has been given to the provision of Sterne anthrax vaccine, brucellosis antigen, Casoni hydatid antigen, and fluorescent antibody conjugate for rabies.

The Center provides the services of reference examinations to the countries completing a considerable number of tests, as follows:

- (a) Potency tests of rabies vaccines and control sera
- (b) Vaccines for brucellosis and anthrax
- (c) Quality tests of diagnosis antigen

TABLE 7

BIOLOGICAL PRODUCTS PREPARED AND DISTRIBUTED BY CEPANZO IN 1971

1. Anthrax	<u>B. anthracis</u> , strain 34F2 Sterne	
	<u>B. anthracis</u> , strain CN/3472	
	<u>B. anthracis</u> , challenge strain, IV Pasteur	
	Sterne vaccine	120,000 doses
2. Brucellosis	Rapid plaque antigen	47,520 doses
	Slow tube antigen	35,640 doses
	Lacto-antigen-ring test	62,500 doses
	<u>B. abortus</u> , strain 19	
	<u>B. abortus</u> , strain 1119-3	
	<u>B. abortus</u> , strain 544	
	<u>B. abortus</u> , strain 2308	
	<u>B. melitensis</u> , strain 16M	
	<u>B. melitensis</u> , strain 53 H38	
	<u>B. melitensis</u> , strain Rev. 1	
	<u>B. suis</u> , strain 1330	
	<u>B. suis</u> , strain 644/3B	
	<u>B. ovis</u>	
	Serum <u>B. abortus</u> (equivalent to International Standard serum)	
	Positive bovine serum	
	Negative bovine serum	
	<u>B. canis</u> serum	
	<u>B. ovis</u> hyperimmune serum	
	A- <u>B. abortus</u> monospecific serum	
	A- <u>B. melitensis</u> monospecific serum	
	<u>B. ovis</u> antigen for complement fixation and immunodiffusion	
	Bacteriophage	
3. Hydatidosis	Casoni antigen	16,000 doses
	Control antigen	16,000 doses
	Positive serum	
	Negative serum	
4. Immunology	<u>Serum produced in rabbits</u>	
	Whole guinea-pigs antiserum	
	Whole goats antiserum	

TABLE 7 (cont.)

## BIOLOGICAL PRODUCTS PREPARED AND DISTRIBUTED BY CEPANZO IN 1971

## 4. Immunology (cont.)

Ovine anti-immunoglobulins  
 Bovine anti-immunoglobulins  
 Caprine anti-immunoglobulins  
 Canine anti-immunoglobulins  
 Gerbil anti-IgG  
 Equine anti-IgG  
 Caprine anti-IgG  
 Murine anti-IgG - mouse C3H  
 Human anti-IgG  
 Swine anti-IgG  
 Murine anti-IgG  
 Mouse anti-macroglobulin  
 Human calostrum anti-IgA  
 Whole mouse antiserum  
 Canine antiserum  
 Human antiserum  
 Swine antiserum  
 Bovine anti-IgG  
 Canine anti-IgG  
 Human anti-gamma globulin  
 Human anti-Fab of IgG  
 Human anti-Fc of IgG  
Serum produced in goats  
 Whole rabbits antiserum  
 Rabbit anti-conjugate  
Serum produced in sheep  
 Human anti-immunoglobulins  
 Normal ovine serum

## 5. Leptospirosis

Serotypes

83 cultures

## 6. Rabies

Fluorescent antibody conjugate

for 39,200 samples

Virus CVS  
 Virus 91  
 Virus 51  
 Virus DR19  
 Virus HEP  
 Virus PV  
 Virus LEP

TABLE 7 (cont.)

BIOLOGICAL PRODUCTS PREPARED AND DISTRIBUTED BY CEPANZO IN 1971

6. Rabies (cont.)

Hyperimmune equine antirabies serum  
Rabbit antirabies serum  
Reference antirabies serum  
Suspension of virus CVS - suckling mouse brain  
Suspension of normal suckling mouse brain  
Impressions of street virus (suckling mouse brain)  
Impressions of normal mouse brain  
Reference antirabies vaccine  
VERO cells  
BHK cells

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7. Tuberculosis

Avian PPD tuberculin  
Mammalian PPD tuberculin  
Bovine PPD tuberculin  
M. tuberculosis  
M. avium  
M. bovis

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8. Laboratory animals

Dutch rabbits  
Flanders rabbits  
Gerbils  
Guinea pigs  
Hamsters  
Mice

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- (d) Biotyping of brucella strains isolated in Latin America
- (e) Typing of leptospires from different sources and countries
- (f) Reference diagnosis for rabies virus identification
- (g) Serological reference tests for brucellosis, hydatidosis, and leptospirosis
- (h) Reference diagnostic tests for confirmation of rabies, brucellosis, and tuberculosis

The Center also provides another kind of technical assistance through proficiency testing in Latin America, primarily in diagnosis of rabies and other diseases. The goal is to evaluate the skill, accuracy, and precision of laboratory personnel of the countries. This evaluation permits correction, when indicated, of deficiencies which sometimes occur.

From the beginning all the laboratory activities have been accepted with great interest and are regularly requested by the countries. As a result of this, CEPANZO is recognized as the Regional Reference Laboratory for rabies, brucellosis, and leptospirosis.

The hydatidosis laboratory works toward the standardization and evaluation of diagnosis tests. These investigations should result in the establishment of more accurate diagnoses which will benefit the control of the disease.

In tuberculosis, with the additional resources of the Regional Project in 1972, it will be possible to produce tuberculin PPD (new pilot plant). The plant will help in the training of technicians for the development of this product, essential to the control of the disease in cattle.

In food microbiology and hygiene the production of diagnostic sera for enterobacteria, will be organized with special reference to the salmonellas. Likewise, installations will be prepared for the analysis and control of toxins, drugs, and residues of pesticides in food.

The technical assistance which CEPANZO provides to the laboratories of the countries has contributed in perfecting the diagnoses of rabies, brucellosis, and leptospirosis. Increasingly, countries are using the fluorescent antibody technique for the diagnosis of rabies, standardized antigens for diagnosis of brucellosis, and antigens for the intradermal and serological tests in the diagnosis of hydatidosis.

At the same time, inactivated rabies vaccine of murine origin, because of its easy and economic preparation, and also its great antigenic potency, is being produced in many countries, replacing other vaccines.

With respect to leptospirosis, several countries are presently able to provide good diagnostic services both in humans and animals.

In the last few years, clear progress is noted in the production of biologicals, both in quality and quantity, in almost all the countries of the Continent.

CEPANZO stimulates the establishment of reference laboratories, governmental or private, and at least one per country, for the control of biological products. This is a large and complex objective in which some advances have been noticed.

#### AGREEMENTS BETWEEN LATIN AMERICAN COUNTRIES AND PAHO INVOLVING THE ASSISTANCE OF THE PAN AMERICAN ZOONOSSES CENTER

It is deemed advisable to include herein those agreements and treaties concluded or negotiated during 1971 between Latin American countries and the Pan American Health Organization which involved the cooperation of the Pan American Zoonoses Center.

##### Argentina

Agreement between the National Animal Health Service, the National Institute of Agricultural Technology (INTA), and the Pan American Zoonoses Center for a project involving zoonoses research activities of interest to Argentina and other countries of the Hemisphere, and the training of professional and auxiliary personnel. Signed on 23 November 1971.

This project aims at developing a research program on the dynamics of rabies in bats and terrestrial wild carnivores in northeastern Argentina.

##### Brazil

1. An agreement between the Government of Brazil - negotiated through the Ministries of Agriculture and Public Health and the Pan American Health Organization - went into effect in 1971. Its purpose is to carry out a study on the biology of haematophagous bats in Brazil, in terms of their relation to the epidemiology of bovine rabies.

The study will last for 16 months; it will be conducted under the supervision of qualified personnel of the Ministry of Agriculture with the cooperation of the faculties of veterinary medicine, the state secretariats of agriculture, and other agencies and institutions interested in the problem.

PAHO will collaborate by sending personnel from the Zone V Office, and the Pan American Zoonoses Center which assisted in the planning of the study will continue to cooperate. This agreement was negotiated on 10 December 1970.

2. An agreement was signed on 28 April 1971 between the Government of Brazil, the Government of the State of Rio Grande do Sul, and the Pan American Health Organization, to plan, organize, implement, and evaluate the program for the control of animal diseases in the State of Rio Grande do Sul. Activities will include the training of personnel and the carrying out of epidemiologic, economic, administrative, and sociologic investigations. Although special attention will be given to foot-and-mouth disease, the project includes all the major zoonoses and, accordingly, it provides for the Organization to lend assistance through the Pan American Foot-and-Mouth Disease and Zoonoses Centers, as well as through Zone V and short-term consultants, if necessary.

3. An agreement concluded toward the end of 1970 set the basis for the cooperation between the Brazilian Government - via the Ministries of Agriculture and Public Health - and the Pan American Health Organization to make possible the establishment and operation of the National Reference and Training Laboratory for Animal Health, through a program aimed at the training of specialized personnel. This agreement went into effect in 1971, and the first fellow is expected to arrive at the Pan American Zoonoses Center in April to start advance training in brucellosis. The schedule has not yet been set for fellows who will study other zoonoses.

4. Towards the end of October 1971, the first steps were taken to negotiate an agreement between the Government of Brazil - through the Ministry of Public Health - and PAHO, involving activities related to the production and control of antirabies vaccines for human use in Brazil.

This agreement, which will go into effect in 1972, calls for the collaboration of the Pan American Zoonoses Center and Zone V.

#### Chile

1. Towards the end of 1971, negotiations were concluded with a view to establishing an agreement to carry out a program for the control of anthrax in Southern Chile. Two amendments were subsequently introduced at the request of the Office for International Affairs of the Ministry of Public Health. The Center advised on the formulation of the program and is giving support to its implementation through the supply of vaccine.

2. There is also an agreement regarding a program for the eradication of rabies in Chile, which was signed on August 1971.

#### Colombia

1. An agreement between the Government of Colombia, the Colombian Agricultural Institute, and PAHO was signed on 14 September 1971 for the development of control programs of foot-and-mouth disease and brucellosis.



The proposed objective is to study the organization and administrative procedures of the programs, the improvement of vaccines and their control, the administration and evaluation of health campaigns, and the training of technical and auxiliary personnel.

The Pan American Zoonoses Center is expected to collaborate in the brucellosis program.

2. On 21 September 1971, an agreement was concluded between the Government of Colombia - through the Ministries of Public Health and Agriculture - and the Pan American Health Organization for a cooperative program in the field of veterinary public health.

It will aim at the control of the zoonotic diseases and the improvement of the hygienic standards of food.

The Center will cooperate in the evaluation of the programs for zoonoses control and eradication and in those for food inspection and control, as well as in the training of personnel.

3. In June 1971, an agreement was signed between the Government of Colombia and the Pan American Health Organization, regarding the development of a pilot program for the control of canine rabies in the Cauca Valley. This agreement has already gone into effect, and the Center has actively collaborated in its implementation.

#### Peru

1. An agreement was concluded between the Government of Peru and the Pan American Health Organization for the development of a program for the control of canine rabies in the Metropolitan Health Area (Lima and Callao).

Its goals are to reduce the risk of human infection, increase the production of biologicals, extend to other areas of the country the work methodology upgraded by the program, and train personnel.

2. An agreement between the Government of Peru and the Pan American Health Organization provides for assistance in carrying out a control program of caprine brucellosis in a large goat-breeding area.

The Center gives technical assistance, training, and supplies vaccine.

#### Uruguay

1. Towards the end of 1971, a draft agreement between the Government of Uruguay and the Pan American Health Organization was prepared in order to reinforce the demonstrative program for the control of hydatidosis,

currently carried out in the Department of Flores, and to start similar actions in the rest of the country.

The Center, which is already collaborating in the Flores project, is expected to advise and cooperate in the design of a project for a national campaign for which financial assistance would be requested from the IDB.

TABLE 8

PAN AMERICAN ZOONOSES CENTER STAFF

For the accomplishment of the objectives contemplated in the corresponding programs, as well as for the achievement of its internal organization, the Center has a body of international and local staff which is shown below:

	<u>1972</u>	<u>1973</u>	<u>1974</u>
<u>Office of the Director</u>			
Director	1	1	1
Administrative Officer	1	1	1
Local staff	3	3	3
<u>Administrative Services</u>			
Local staff	8	8	8
<u>Training and Technical Information</u>			
Chief of Training	1	1	1
Editor-Translator	-	1	1
Audiovisual Aids Officer	1	1	1
Local staff	5	5	5
<u>Field Services</u>			
Chief of Department	1	1	1
Epidemiologist (Physician)	1	1	1
Epidemiologist (Veterinarian)	1	1	1
Mastozoologist (Ecology)	1	1	1
Consultant, Control Programs	1	1	1
Biostatistician	1	1	1
Zoonoses Specialist	3	3	3
Local staff	13	13	13
<u>Laboratory Services</u>			
Chief of Laboratories (50%)	1	1	1
Bacteriologist (Tb)	1	1	1
Bacteriologist (Bru)	1	1	1
Expert in biological products	1	1	1
Local staff	27	27	27

TABLE 8 (cont.)

PAN AMERICAN ZOONOSIS CENTER STAFF

<u>Research</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Scientific Adviser	1	1	1
Chief of Laboratories (50%)	1	1	1
Parasitologist	1	1	1
Serologist	1	1	1
Virologist	1	1	1
Food Microbiologist	1	1	1
Immunologist	1	1	1
Specialist in Laboratory Animals	1	1	1
Assistant Scientist	1	1	1
Local staff	35	35	35
	<u>117</u>	<u>118</u>	<u>118</u>

PAN AMERICAN ZOONOSIS CENTER  
BREAKDOWN OF THE BUDGET FOR 1972

	Office of Director	Training and Technical Information	Technical Advisory Services		Research	Adminis- tration	Meetings	Local Costs	Total	Per- centage of Total
			Field Services for Zoonoses Control	Laboratory Services						
Salaries and Allowances	46,110	94,274	278,819	176,582	241,204	54,492	-	-	891,481	73.5
Short-term Consultants	-	6,600	6,600	3,300	3,300	-	-	-	19,800	1.6
Duty Travel	3,395	5,753	18,831	13,681	6,411	-	-	-	48,071	4.0
Fellowships	-	54,400	-	-	-	-	-	-	54,400	4.5
Supplies and Equipment	-	9,463	2,510	30,468	29,647	1,912	-	-	74,000	6.1
Common Services	-	6,215	9,866	24,684	28,002	-	-	-	68,767	5.7
Contractual Services	-	1,378	-	3,418	4,778	-	-	-	9,574	.8
Meetings	-	-	-	-	-	-	15,000	-	15,000	1.2
Local Costs	-	-	-	-	-	-	-	25,203	25,203	2.1
Publications	-	5,904	-	-	-	-	-	-	5,904	.5
Total	49,505	183,987	316,626	252,133	313,342	56,404	15,000	25,203	1,212,200	
			/568,759/							
Percentage of Total	4.1	15.2	26.1	20.8	25.9	4.6	1.2	2.1		100.0
			/46.0/							

PAN AMERICAN ZOONOSES CENTER

BUDGET

1 January - 31 December 1972

I. <u>Office of the Director</u>	<u>49,505</u>
(a) Salaries and allowances	46,110
Professional staff (2)	
Director, P.5	
Administrative Officer, P.2	
Local staff (3)	
(b) Duty travel	3,395
II. <u>Training and Technical Information</u>	<u>183,987</u>
(a) Salaries and allowances	94,274
Professional staff (2)	
Chief of Administration, P.4	
Specialist in Audiovisual Aids, P.1	
Local staff (5)	
(b) Short-term consultants	6,600
(c) Duty travel	5,753
(d) Fellowships	54,400
(e) Supplies and equipment	9,463
(f) Common services	6,215
(g) Contractual services	1,378
(h) Publications	5,904
III. <u>Field Services for Zoonoses Control</u>	<u>316,626</u>
(a) Salaries and allowances	278,819
Professional staff (9)	
Chief of Technical Services, P.5	
Consultant, Control Programs, P.4	
Epidemiologist (Physician), P.4	
Epidemiologist (Veterinarian), P.4	

BUDGET FOR 1972 (cont.)

3 Specialists in zoonoses, P.4  
Mastozoologist (Ecology), P.4  
Biostatistician, P.4

Local staff (13)

(b) Short-term consultants	6,600
(c) Duty travel	18,831
(d) Supplies and equipment	2,510
(e) Common services	9,866

IV. Laboratory Services 252,133

(a) Salaries and allowances 176,582

Professional staff (4)

Chief of Laboratories (50%), P.5  
Bacteriologist (Tb), P.4  
Bacteriologist (Bru), P.4  
Expert in biological products, P.4

Local staff (27)

(b) Short-term consultants	3,300
(c) Duty travel	13,681
(d) Supplies and equipment	30,468
(e) Common services	24,684
(f) Contractual services	3,418

V. Research 313,342

(a) Salaries and allowances 241,204

Professional staff (9)

Scientific adviser, P.5  
Chief of Laboratories (50%), P.5  
Parasitologist, P.4  
Serologist, P.4  
Virologist, P.4  
Food microbiologist, P.4  
Serologist (Immunologist), P.4  
Specialist in laboratory animals, P.2  
Scientist, assistant, P.2

Local staff (35)

BUDGET FOR 1972 (cont.)

(b) Short-term consultants	3,300
(c) Duty travel	6,411
(d) Supplies and equipment	29,647
(e) Common services	28,002
(f) Contractual services	4,778
VI. <u>Administrative Services</u>	<u>56,404</u>
(a) Salaries and allowances	54,492
Local staff (8)	
(b) Supplies and equipment	1,912
VII. <u>Meetings</u>	<u>15,000</u>
Scientific Advisory Committee	15,000
Technical Coordinating Committee	
Travel	12,000
Per diem	3,000
VIII. <u>Local Costs</u>	<u>25,203</u>
Local operating costs	25,203
TOTAL	<u><u>1,212,200</u></u>



PAN AMERICAN ZOONOSES CENTER  
1972 BUDGET  
TRAINING AND TECHNICAL INFORMATION

	<u>National Courses*</u>	<u>International Courses and Short Courses</u>	<u>Individual Training</u>	<u>Publications</u>	<u>Total</u>	<u>Per- centage of Total</u>
Salaries and Allowances						
International staff	27,318	23,864	10,230	6,371	67,783	36.4
Local staff	13,332	11,645	5,000	3,114	33,091	16.8
Duty Travel	1,269	1,178	535	--	5,753	1.5
Fellowships	21,815	21,232	11,353	--	54,400	34.0
Supplies and Equipment	1,824	2,871	654	4,114	9,463	4.4
Common Services	2,142	2,078	743	1,252	6,215	3.2
Contractual Services	555	485	208	130	1,378	0.7
Publications	2,379	2,078	892	555	5,904	3.0
Totals	<u>70,634</u>	<u>64,431</u>	<u>29,615</u>	<u>15,536</u>	<u>183,987</u>	
Percentage of Total	40.9	35.8	15.3	8.0		100.0

^ To be held in the countries with the assistance of the Center

PAN AMERICAN ZOONOSES CENTER

1972 BUDGET

TECHNICAL ADVISORY SERVICES

	<u>Field Services</u>	<u>%</u>	<u>Labora- tory Services</u>	<u>%</u>	<u>Total</u>
Salaries and Allowances					
International staff	218,821	70.4	141,335	56.8	360,156
Local staff	66,598	21.4	38,547	16.0	105,145
Duty Travel	18,831	4.4	13,681	5.0	32,512
Supplies and Equipment	2,510	0.6	30,468	12.0	32,978
Common Services	9,866	3.2	24,684	8.6	34,550
Contractual Services	--	--	3,418	1.6	3,418
Totals	<u>316,626</u>	<u>100.0</u>	<u>252,133</u>	<u>100.0</u>	<u>568,759</u>
Percentage of Total	59.3		40.7		100.0

PAN AMERICAN ZONOSSES CENTER

1972 BUDGET

RESEARCH PROJECTS

	<u>Epidemiological Research</u>	<u>Improvement of Diagnosis</u>	<u>Improvement of Vaccines</u>	<u>Basic Research</u>	<u>Total</u>	<u>Percent- age of Total</u>
Salaries and Allowances						
International staff	58,279	53,214	47,874	27,536	186,903	59.8
Local staff	17,904	16,295	14,916	8,486	57,601	19.0
Duty Travel	1,990	1,812	1,660	949	6,411	2.1
Supplies and Equipment	7,675	9,980	8,385	3,607	29,647	9.0
Common Services	8,717	7,929	7,255	4,101	28,002	8.5
Contractual Services	1,490	1,355	1,239	694	4,778	1.6
Totals	<u>96,055</u>	<u>90,585</u>	<u>81,329</u>	<u>45,373</u>	<u>313,342</u>	
Percentage of Total	31.1	28.3	25.9	14.7		100.0

PAN AMERICAN ZONOSSES CENTER  
BREAKDOWN OF THE BUDGET FOR 1973

	Office of Director	Training and Technical Information	Technical Advisory Services		Research	Adminis- tration	Meetings	Local Costs	Total	Per- centage of Total
			Field Services for Zoonoses Control	Laboratory Services						
Salaries and Allowances	48,671	106,175	294,525	178,957	247,619	57,602	-	-	933,549	74.1
Short-term Consultants	-	6,600	6,600	3,300	3,300	-	-	-	19,800	1.6
Duty Travel	4,232	5,600	22,093	18,231	8,899	-	-	-	59,055	4.7
Fellowships	-	75,600	-	-	-	-	-	-	75,600	6.0
Supplies and Equipment	-	6,246	2,489	22,408	19,165	1,598	-	-	51,906	4.1
Common Services	-	8,891	9,204	25,200	30,053	-	-	-	73,348	5.8
Contractual Services	-	423	-	1,484	1,743	-	-	-	3,650	.3
Meetings	-	-	-	-	-	-	10,000	-	10,000	.8
Local Costs	-	-	-	-	-	-	-	26,462	26,462	2.1
Publications	-	6,030	-	-	-	-	-	-	6,030	.5
Total	52,903	215,565	334,911 /584,491/	249,580	310,779	59,200	10,000	26,462	1,259,400	
Percentage of Total	4.2	17.1	26.6 /46.4/	19.8	24.7	4.7	.8	2.1		100.0

PAN AMERICAN ZOONOSES CENTER

BUDGET

1 January - 31 December 1973

I.	<u>Office of the Director</u>	52,903
	(a) Salaries and allowances	48,671
	Professional staff (2)	
	Director, P.5	
	Administrative Officer, P.2	
	Local staff (3)	
	(b) Duty travel	4,232
II.	<u>Training and Technical Information</u>	215,565
	(a) Salaries and allowances	106,175
	Professional staff (3)	
	Chief of Administration, P.4	
	Translator and Publications Officer, P.2	
	Specialist in Audiovisual Aids, P.1	
	Local staff (5)	
	(b) Short-term consultants	6,600
	(c) Duty travel	5,600
	(d) Fellowships	75,600
	(e) Supplies and equipment	6,246
	(f) Common services	8,891
	(g) Contractual services	423
	(h) Publications	6,030
III.	<u>Field Services for Zoonoses Control</u>	334,911
	(a) Salaries and allowances	294,525
	Professional staff (9)	
	Chief of Technical Services, P.5	
	Consultant, Control Programs, P.4	
	Epidemiologist (Physician), P.4	

BUDGET FOR 1973 (cont.)

Epidemiologist (Veterinarian), P.4  
3 Specialists in zoonoses, P.4  
Mastozoologist (Ecology), P.4  
Biostatistician, P.4

Local staff (13)

(b) Short-term consultants	6,600
(c) Duty travel	22,093
(d) Supplies and equipment	2,489
(e) Common services	9,204

IV. Laboratory services 249,580

(a) Salaries and allowances 178,957

Professional staff (4)

Chief of Laboratories (50%), P.5  
Bacteriologist (Tb), P.4  
Bacteriologist (Bru), P.4  
Expert in biological products, P.4

Local staff (27)

(b) Short-term consultants	3,300
(c) Duty travel	18,231
(d) Supplies and equipment	22,408
(e) Common services	25,200
(f) Contractual services	1,484

V. Research 310,779

(a) Salaries and allowances 247,619

Professional staff (9)

Scientific adviser, P.5  
Chief of laboratories (50%), P.5  
Parasitologist, P.4  
Serologist, P.4  
Virologist, P.4  
Food microbiologist, P.4  
Serologist (Immunologist), P.4  
Specialist in laboratory animals, P.2  
Scientist, assistant, P.2

Local staff (35)

## BUDGET FOR 1973 (cont.)

(b) Short-term consultants		3,300
(c) Duty travel		8,899
(d) Supplies and equipment		19,165
(e) Common services		30,053
(f) Contractual services		1,743
VI. <u>Administrative Services</u>		<u>59,200</u>
(a) Salaries and allowances		57,602
Local staff (8)		
(b) Supplies and equipment		1,598
VII. <u>Meetings</u>		<u>10,000</u>
Scientific Advisory Committee		10,000
Travel	8,500	
Per diem	1,500	
VIII. <u>Local Costs</u>		<u>26,462</u>
Local Operating Costs		26,462
	Total	<u>1,259,400</u> =====

PAN AMERICAN ZONOSSES CENTER

1973 BUDGET

TRAINING AND TECHNICAL INFORMATION

	<u>National Courses*</u>	<u>International Courses and Short Courses</u>	<u>Individual Training</u>	<u>Publications</u>	<u>Total</u>	<u>Per- centage of Total</u>
Salaries and Allowances						
International staff	28,224	24,812	11,886	6,825	71,747	32.8
Local staff	16,452	14,456	6,184	3,936	41,028	19.1
Duty Travel	2,408	2,138	1,054	--	5,600	2.6
Fellowships	31,223	30,601	13,776	--	75,600	35.6
Supplies and Equipment	1,547	1,285	501	2,913	6,246	2.9
Common Services	2,148	1,739	235	4,769	8,891	4.0
Contractual Services	159	139	67	58	423	0.2
Publications	2,487	2,115	1,428	--	6,030	2.8
Totals	<u>89,648</u>	<u>77,285</u>	<u>35,131</u>	<u>18,501</u>	<u>215,565</u>	
Percentage of Total	39.8	35.9	15.7	8.6		100.0

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



PAN AMERICAN ZOONOSES CENTER

1973 BUDGET

TECHNICAL ADVISORY SERVICES

	<u>Field Services</u>	<u>%</u>	<u>Labora- tory Services</u>	<u>%</u>	<u>Total</u>
Salaries and Allowances					
International staff	230,844	69.9	140,640	53.8	371,484
Local staff	70,281	21.3	41,617	16.7	111,898
Duty Travel	22,093	5.2	18,231	7.3	40,324
Supplies and Equipment	2,489	0.8	22,408	9.8	24,897
Common Services	9,204	2.8	25,200	11.8	34,404
Contractual Services	--	--	1,484	0.6	1,484
Totals	<u>334,911</u>	<u>100.0</u>	<u>249,580</u>	<u>100.0</u>	<u>584,491</u>
Percentage of Total	59.7		40.3		100.0

PAN AMERICAN ZONOSSES CENTER

1973 BUDGET

RESEARCH PROJECTS

	<u>Epidemiological Research</u>	<u>Improvement of Diagnosis</u>	<u>Improvement of Vaccines</u>	<u>Basic Research</u>	<u>Total</u>	<u>Percent- age of Total</u>
Salaries and Allowances						
International staff	58,810	54,859	47,614	26,524	188,107	60.2
Local staff	19,505	18,526	16,055	9,026	63,112	20.9
Duty Travel	2,901	2,629	2,211	1,158	8,899	2.4
Supplies and Equipment	6,045	5,674	4,873	2,573	19,165	6.6
Common Services	9,417	8,814	7,637	4,185	30,053	9.3
Contractual Services	540	503	430	270	1,743	0.6
Totals	<u>97,218</u>	<u>91,005</u>	<u>78,820</u>	<u>43,736</u>	<u>310,779</u>	
Percentage of Total	31.3	29.3	25.1	14.3		100.0

PAN AMERICAN ZOONOSES CENTER

BREAKDOWN OF THE BUDGET FOR 1974

	Office of Director	Training and Technical Information	Technical Advisory Services		Research	Adminis- tration	Meetings	Local Costs	Total	Per- centage of Total
			Field Services for Zoonoses Control	Laboratory Services						
Salaries and Allowances	48,054	113,231	309,884	188,219	257,973	61,099	-	-	978,460	73.3
Short-term Consultants	-	6,600	6,600	3,300	3,300	-	-	-	19,800	1.5
Duty Travel	4,322	5,813	20,562	16,289	9,614	-	-	-	56,600	4.2
Fellowships	-	64,800	-	-	-	-	-	-	64,800	4.8
Supplies and Equipment	-	7,517	2,698	33,723	25,965	1,567	-	-	71,470	5.3
Common Services	-	10,806	11,192	31,044	37,374	-	-	-	90,416	6.8
Contractual Services	-	1,879	-	1,658	2,604	-	-	-	6,141	.5
Meetings	-	-	-	-	-	-	15,000	-	15,000	1.1
Local Costs	-	-	-	-	-	-	-	26,613	26,613	2.0
Publications	-	6,000	-	-	-	-	-	-	6,000	.5
Total	52,376	216,646	350,936 /625,169/	274,233	336,830	62,666	15,000	26,613	1,335,300	
Percentage of Total	3.9	16.2	26.3 /46.9/	20.6	25.2	4.7	1.1	2.0		100.0

PAN AMERICAN ZOONOSES CENTER

BUDGET

1 January - 31 December 1974

I.	<u>Office of the Director</u>	<u>52,376</u>
	(a) Salaries and allowances	48,054
	Professional staff (2)	
	Director, P.5	
	Administrative Officer, P.2	
	Local staff (3)	
	(b) Duty travel	4,322
II.	<u>Training and Technical Information</u>	<u>216,646</u>
	(a) Salaries and allowances	113,231
	Professional staff (3)	
	Chief of Administration, P.4	
	Translator and Publications Officer, P.2	
	Specialist in Audiovisual Aids, P.1	
	Local staff (5)	
	(b) Short-term consultants	6,600
	(c) Duty travel	5,813
	(d) Fellowships	64,800
	(e) Supplies and equipment	7,517
	(f) Common services	10,806
	(g) Contractual services	1,879
	(h) Publications	6,000
III.	<u>Field Services for Zoonoses Control</u>	<u>350,936</u>
	(a) Salaries and allowances	309,884
	Professional staff (9)	
	Chief of Technical Services, P.5	
	Consultant, Control Programs, P.4	
	Epidemiologist (Physician), P.4	

BUDGET FOR 1974 (cont.)

	Epidemiologist (Veterinarian), P.4	
	3 Specialists in zoonoses, P.4	
	Mastozoologist (Ecology), P.4	
	Biostatistician, P.4	
	Local staff (13)	
	(b) Short-term consultants	6,600
	(c) Duty travel	20,562
	(d) Supplies and equipment	2,698
	(e) Common services	11,192
IV.	<u>Laboratory Services</u>	<u>274,233</u>
	(a) Salaries and allowances	188,219
	Professional staff (4)	
	Chief of Laboratories (50%), P.5	
	Bacteriologist (Tb), P.4	
	Bacteriologist (Bru), P.4	
	Expert in biological products, P.4	
	Local staff (27)	
	(b) Short-term consultants	3,300
	(c) Duty travel	16,289
	(d) Supplies and equipment	33,723
	(e) Common services	31,044
	(f) Contractual services	1,658
V.	<u>Research</u>	<u>336,830</u>
	(a) Salaries and allowances	257,973
	Professional staff (9)	
	Scientific adviser, P.5	
	Chief of laboratories (50%), P.5	
	Parasitologist, P.4	
	Serologist, P.4	
	Virologist, P.4	
	Food microbiologist, P.4	
	Serologist (Immunologist), P.4	
	Specialist in laboratory animals, P.2	
	Scientist, assistant, P.2	
	Local staff (35)	

BUDGET FOR 1974 (cont.)

(b) Short-term consultants	3,300
(c) Duty travel	9,614
(d) Supplies and equipment	25,965
(e) Common services	37,374
(f) Contractual services	2,604
VI. <u>Administrative Services</u>	<u>62,666</u>
(a) Salaries and allowances	61,099
Local staff (8)	
(b) Supplies and equipment	1,567
VII. <u>Meetings</u>	<u>15,000</u>
Scientific Advisory Committee	15,000
Technical Coordinating Committee	
Travel	12,000
Per diem	3,000
VIII. <u>Local Costs</u>	<u>26,613</u>
Local operating costs	26,613
TOTAL	<u>1,335,300</u>

PAN AMERICAN ZOONOSES CENTER

1974 BUDGET

TRAINING AND TECHNICAL INFORMATION

	<u>National Courses*</u>	<u>International Courses and Short Courses</u>	<u>Individual Training</u>	<u>Publications</u>	<u>Total</u>	<u>Per- centage of Total</u>
Salaries and Allowances						
International staff	29,761	25,467	11,573	7,267	74,068	35.0
Local staff	18,306	16,288	6,574	4,595	45,763	19.5
Duty Travel	2,006	2,622	1,185	--	5,813	2.9
Fellowships	25,215	24,710	14,875	--	64,800	31.1
Supplies and Equipment	1,752	1,536	221	4,008	7,517	3.2
Common Services	2,367	1,902	482	6,055	10,806	4.6
Contractual Services	757	662	253	207	1,879	0.8
Publications	2,500	2,500	1,000	--	6,000	2.9
Totals	<u>82,664</u>	<u>75,687</u>	<u>36,163</u>	<u>22,132</u>	<u>216,646</u>	
Percentage of Total	40.4	35.3	14.9	9.4		100.0

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

PAN AMERICAN ZONOSSES CENTER

1974 BUDGET

TECHNICAL ADVISORY SERVICES

	<u>Field Services</u>	<u>%</u>	<u>Labora- tory Services</u>	<u>%</u>	<u>Total</u>
Salaries and Allowances					
International staff	239,486	68.1	146,347	55.7	385,833
Local staff	76,998	22.0	45,172	13.3	122,170
Duty Travel	20,562	6.2	16,289	7.0	36,851
Supplies and Equipment	2,698	0.5	33,723	12.0	36,421
Common Services	11,192	3.2	31,044	11.2	42,236
Contractual Services	--	--	1,658	0.8	1,658
Totals	350,936	100.0	274,233	100.0	625,169
Percentage of Total	60.1		39.9		100.0



PAN AMERICAN ZONOSSES CENTER

1974 BUDGET

RESEARCH PROJECTS

	<u>Epidemiological Research</u>	<u>Improvement of Diagnosis</u>	<u>Improvement of Vaccines</u>	<u>Basic Research</u>	<u>Total</u>	<u>Percent- age of Total</u>
Salaries and Allowances						
International staff	59,035	58,262	48,794	27,138	193,229	57.9
Local staff	20,763	20,492	17,170	9,619	68,044	18.4
Duty Travel	3,241	3,198	2,175	1,000	9,614	3.2
Supplies and Equipment	7,923	7,819	6,544	3,679	25,965	7.8
Common Services	10,061	11,929	10,710	4,674	37,374	11.9
Contractual Services	812	800	671	321	2,604	0.8
Totals	<u>101,835</u>	<u>102,500</u>	<u>86,064</u>	<u>46,431</u>	<u>336,830</u>	
Percentage of Total	30.5	30.1	25.2	14.2		100.0