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PLAN FOR THE DEVELOPMENT OF MULTINATIONAL COOPERATION AND  
CENTERS IN BIOMEDICAL SCIENCE AND  
EDUCATION RELATED TO ARBOVIROLOGY IN LATIN AMERICA

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AD HOC PAHO ADVISORY GROUP ON  
MULTINATIONAL COLLABORATION FOR RESEARCH AND TRAINING  
IN ARBOVIROLOGY

Cali, Colombia  
16-18 April 1967

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PLAN FOR THE DEVELOPMENT OF MULTINATIONAL COOPERATION AND  
CENTERS IN BIOMEDICAL SCIENCE AND  
EDUCATION RELATED TO ARBOVIROLOGY IN LATIN AMERICA\*

1. Introduction

An Ad Hoc PAHO Advisory Group on Multinational Collaboration for Research and Training in Arbovirology was convened at the Universidad del Valle, in Cali, Colombia, from April 16-18, 1967. The charge to the Group was to consider and, if indicated, propose for the discipline of arbovirology in Latin America a plan for multinational association of teaching and research centers to:

Increase the number of trained teachers and investigators in Latin America, and enable them to pursue fruitful work in Latin America, thus reducing incentives to migration;

Promote research and maximally effective utilization of material and human resources, including a system for exchange of teachers and investigators;

Stimulate the further development of arbovirology in Latin America; and

Help arbovirus research and training programs secure international recognition and national support.

Arbovirology was selected by PAHO as one field of biomedical science that deserved early consideration because of the importance of arboviral

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\*Prepared for the Sixth Meeting of the PAHO Advisory Committee on Medical Research, 12-16 June 1967, by Dr. William C. Reeves, School of Public Health, University of California, and Dr. William F. Scherer, Department of Microbiology, Cornell University Medical College, acting as PAHO consultants.

diseases in Latin America and the current potential for rapid advancement of knowledge in this field. However, it was recognized at the outset that recommendations and action related to arbovirology would of course need to be closely integrated with future developments in other areas of virology, microbiology, epidemiology, vertebrate ecology, medical entomology, parasitology, immunology and public health. The Advisory Group restated the belief that the study of viruses transmitted by arthropods in Latin America has particular merit at this time. Recent epidemics have all too plainly demonstrated the need to obtain information on the obscure natural cycles of these infectious agents, to assess their roles in producing morbidity and mortality, and to secure sufficient knowledge to eliminate or minimize them as public health hazards. Arboviruses circulate through many known and possibly other as-yet unsuspected arthropods and vertebrates other than man, and, as a result, their life histories are often particularly complex. Progress toward understanding their natural cycles thus calls for an integrated effort by scientists of diverse disciplines that includes epidemiologists, clinicians, virologists, immunologists, molecular biologists, medical entomologists, vertebrate zoologists, and ecologists. Since adequate levels of interest and competence in all these fields are not likely to be found in a single institution or country, multinational collaboration becomes particularly critical and essential to progress in arbovirology. Further, it is important to note that the multidisciplinary approach required in this field often fosters development of lines of communication and understanding between diverse elements of biomedical sciences from which important knowledge results. Such multidisciplinary communications are a recognized need not only in Latin America, but in the world of science at large.

Needs in arboviral research, and recognition of the public health, veterinary and wildlife importance of arboviruses have been the subjects of sequential efforts of PAHO in collaboration with many Latin American and North American educational institutions research agencies, and governments concerned with this field. The major activities of PAHO to date are summarized in two documents that supplement this report. The first document\* is the product of consultant visits to the majority of active research units existent in Latin America as of 1962.

This document identified 9 areas of activities that Latin American workers suggested were necessary to the furtherance of arboviral research in Latin America:

- 1.1 Improve contacts and interrelationships among research workers.
- 1.2 Increase the number of trained virologists, epidemiologists, entomologists, and vertebrate zoologists available in Latin America.
- 1.3 Develop an effective regional reference and training facility in Latin America to:
  - Identify viruses ,
  - Supply reference reagents and antigens ,
  - Maintain prototype and reference strains for Latin America ,
  - Consult with and advise participating laboratories,
  - Train personnel in the various procedures,

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\*" Research and Research Needs in Arthropod-borne Virus Diseases in Latin America!" PAHO Ref: RES 1/9, 28 May 1962, pp.1-46.

Assist in epidemic investigations and

Increase the facilities to move specimens across political boundaries.

- 1.4 Increase the amount and stability of funding for research projects and senior positions.
- 1.5 Study newly established and migrant human populations.
- 1.6 Improve the reporting of morbidity and mortality from diagnosed arboviral infections of man and domestic animals.
- 1.7 Encourage fuller development and utilization of reference collections, museums and facilities with reference to arthropods, vertebrates, and plants of the Western Hemisphere.
- 1.8 Determine the extent, distribution, capability, and future interests of biologists in collaborative continental studies and the facilities and potentials for training of additional specialists in the biologic fields.
- 1.9 Encourage a coordinated study of arboviruses in the Amazon Basin and other multinational geographic regions.

The second document\* summarizes the proceedings and recommendations that resulted from the first meeting attended by a majority of Latin American arbovirus research workers. This meeting provided an opportunity for consideration of several major problems suggested in the 1962 report (RES 1/9) as well as affording the first opportunity for this scientific group to communicate, become mutually acquainted, and establish a beginning

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\*"I. Arbovirus Problems in the Large River Basins of Equatorial South America. II. Recent Arbovirus Epidemics in the Americas and Information Exchange Activities." PAHO Ref: RES 63.1, 15 October 1963, pp. 1-56.

of collaborative approaches to research problems of mutual concern. In addition, the group reaffirmed the importance of the 9 problem areas that were defined in the first report and urged that PAHO pursue every avenue of action to resolve these needs.

The present Advisory Group, while it did not achieve as broad a regional representation as was hoped for (because of limited funds and last-minute complications of a personal nature), has tried to identify major problems that deserve immediate attention in the areas of training, to increase communication within the field, and to implement collaborative efforts. The patterns and programs recommended to achieve these objectives are the subject of this report. In summary, these include the development of multinational Latin American centers for training in scientific fields basic to investigations of arboviruses and other viral zoonoses, and formation and support of a Latin American Committee on Arboviruses to implement a wide range of other programs needed in the field of arbovirology in Latin America.\*

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\*In preparation for this meeting, a request was made to the Science Information Exchange in the United States for information on research projects carried out from 1965 to the present time in Latin America on: Virology, Arboviruses, Insect Ecology, Medical Entomology and Vertebrate Ecology. The three objectives of the request were to identify: the types of projects, the specific projects on arboviruses and the agencies that are providing financial support. Review of the summary sheets that were provided were disappointing in that projects known by this Advisory Group to be related to the studies on arboviruses in Latin America were not included in the project summaries received. However, 16 projects on arboviruses were identified that are supported by such diverse agencies as the United States Public Health Service, the Rockefeller Foundation, the U.S. Atomic Energy Commission and the U.S. Department of Defense. In addition, 23 projects were identified that are directed at studies of the systematics or ecology of birds, bats, rodents, reptiles, frogs and blood-sucking arthropods. Each of these 23 projects, while not directed at arboviruses, can provide biologic data of potential value in arboviral research. The sources of financial support for the studies identified encompassed 11 separate agencies and included 6 United States government agencies, 3 private foundations and 2 universities.

A more complete identification of the research projects in Latin America that are directly or indirectly concerned with arboviral research and the sources of funding will have to be included as an important activity of the Latin American Committee on Arboviruses.



## 2. Formation of a Latin American Committee on Arboviruses (LACAV)

### Recognizing:

that there are numerous problems related to arbovirology in Latin America that would profit by multinational cooperation, and

that significant benefits to arbovirology in the northern Americas and the world have resulted from the formation and activities of the American Committee on Arboviruses and its subcommittees,

It is proposed that a similar, but not necessarily identical, Latin American Committee on Arboviruses (LACAV) be formed to foster research and education in this field in Latin America.\*

### 2.1 Functions of a LACAV could cover the following:

2.1.1 Encourage and support the development of training programs in Latin America designed to assure sufficient numbers of capable personnel for fields related to the biological, medical and public health aspects of arbovirology. Specifically the LACAV would, through a Subcommittee for Training in Arbovirology, work with PAHO to create multinational Latin American centers for training in scientific fields basic to investigations of arboviruses and other viral zoonoses as proposed subsequently in this document.

2.1.2 Encourage multinational, multidisciplinary and multilaboratory research collaboration by all feasible mechanisms.

2.1.3 Enhance communication among Latin American arbovirus laboratories by mechanisms including:

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\*For the purpose of these activities, the term "Latin America" is used in accordance with PAHO policies to encompass the geographic area from Mexico to the southern limits of South America, including the Caribbean Islands.

2.1.3.1 An informal Latin American Arbovirus Newsletter of information submitted in either Spanish or English, but distributed in both languages to supplement the currently available Arbovirus Information Exchange in English. This Newsletter would not relieve those Latin American investigators who wish to submit information directly to the Information Exchange of their responsibility to do so at the intervals required by the IE. However, an English summary of information in this Newsletter (which would be of international interest and had not already appeared in the IE) might be sent to the IE for distribution throughout the world if agreeable to the individual Latin American scientists who originated the information.

2.1.3.2 Arranging for circuit tours of Latin American investigators to various arbovirus laboratories in Latin America with submission of a final summary of appropriate news to each laboratory visited or, if there were no objections, to all Latin American laboratories via the Newsletter.

2.1.3.3 Convening as opportunities and needs arise, open meetings to which all Latin American scientists concerned with arboviruses are invited. Such meetings might take place in conjunction with meetings of already organized Latin American societies in fields such as microbiology, entomology, zoology, human or veterinary medicine, public health, etc.

2.1.4 During the interval between April and November 1967, survey arbovirology in Latin America with respect to personnel, facilities and fields of investigation and interest. It is proposed that this survey be carried out a) in time for presentation at the first meeting of the LACAV in October 1967, b) by mail using the facilities of PAHO or of the PAHO/WHO Collaborating Center in Arboviruses, and c) by an Ad Hoc Committee for Survey of Arbovirology in

Latin America, consisting of Dr. Oscar de Souza Lopes, Chairman, Dr. Carlos Sanmartin, and Dr. Gernot Bergold. It is felt that such a roster of arbovirus workers, facilities and activities in Latin America is essential to define the community of scientists in this field which the LACAV should represent. Through periodic inquiry by the LACAV, the roster could be kept current and perhaps used in distributing the Latin American Arbovirus Newsletter.

2.1.5 Advise and assist any scientific, governmental or other pertinent organization or individuals as requested concerning arbovirology research or recognized epidemics.

2.1.6 Work closely with the PAHO/WHO Collaborating Center in Arboviruses in São Paulo to enhance its usefulness to arbovirology in Latin America and to utilize whenever feasible, its facilities to accomplish tasks undertaken by the LACAV.

2.1.7 In conceiving its functions, the LACAV might profit by consultation with the American Committee on Arboviruses, recognizing that there are similar, but also different problems in each region. Continued liaison between the two Committees is provided for in the organization and composition of the LACAV.

## 2.2 Organization and Composition of the Latin American Committee on Arboviruses (LACAV)

2.2.1 It is recommended that participants on the LACAV should:

2.2.1.1 represent in terms pertinent to arbovirology, geographic regions of Latin America,

2.2.1.2 rotate, by a defined system,

2.2.1.3 consist of a principal participant and an alternate from each region, and

2.2.1.4 include as ex officio participants the Director of the PAHO/WHO Collaborating Center in Arboviruses in São Paulo and a liaison representative from the American Committee on Arboviruses. Likewise it is suggested that a liaison representative of the LACAV be an ex officio member of the American Committee on Arboviruses.

2.2.2 Because it is necessary for initiation of the LACAV to define tentative geographic regions in order to obtain an initial group of participants, it is proposed, for the time being, that the territory between Mexico and the Caribbean to the north and the tip of South America to the south be divided into four regions as follows:

Mexico, Central America and Panama;

Countries of the Caribbean Islands and Guyana, Surinam and French Guiana;

Venezuela, Colombia, Ecuador, Peru and Chile; and

Bolivia, Argentina, Uruguay, Paraguay and Brazil.

2.2.3 The LACAV itself will be responsible for its operational principles and procedures including selection of a chairman, development of a rotational system for participants and alternates, procurement of financial support, possible future modification of the above proposed regions, etc. However, it is recommended that to enhance initiation of the LACAV and its first programs, the initial participants and alternates not be changed by a rotational system during the two years after the first meeting of the LACAV and that then the rotational system commence as one of sequential rotation of each individual participant at an agreed-upon time interval.

2.2.4 It is recommended, after very prolonged consideration, that in the absence of a practical procedure for electing the first participants and alternates of the LACAV from an as-yet incompletely defined community of Latin American arbovirologists, the PAHO appoint the initial group as follows:

Region	Participant	Alternate
Mexico, Central America, and Panama.	P. Galindo Gorgas Memorial Laboratory Panama City, Panama	J. de Mucha Macias Instituto de Virología, México, D.F., Mexico
Countries of the Caribbean Islands and Guyana, Surinam and French Guiana	L. Spence Trinidad Regional Virus Laboratory, Port-of-Spain, Trinidad	C. Serié Pasteur Institute Cayenne, French Guiana
Venezuela, Colombia, Ecuador, Peru and Chile	C. Sanmartin Departamento de Medicina Preventiva y Salud Pública, Universidad del Valle, Cali, Colombia	G. H. Bergold Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela
Bolivia, Argentina, Uruguay, Paraguay and Brazil	J. Boshell Belém Virus Laboratory, Belém, Brazil	A. Vilches Instituto de Microbiología, Buenos Aires, Argentina
<u>Ex officio</u>		
Director, PAHO/WHO Collaborating Center in Arboviruses, São Paulo, Brazil	O. de Souza Lopes	
Liaison representative from the American Committee on Arboviruses	Various persons from the current membership of the ACAV.	

2.2.5 It is proposed after extensive consideration of all currently evident possibilities,

2.2.5.1 that the first meeting of the LACAV take place in October 30 and 31, 1967, in Philadelphia, Pennsylvania, at the times of the annual meeting of both the American Committee on Arboviruses (to provide opportunities for exchange of ideas and information concerning programs between the two Committees) and the American Society of Tropical Medicine and Hygiene (to enable LACAV participants to attend scientific sessions pertinent to arbovirology),

2.2.5.2 that subsequent meetings of the LACAV should in general take place in Latin America,

2.2.5.3 that although alternates would usually not attend LACAV meetings unless substituting for participants, alternates should attend the first meeting of the LACAV because of its organizational and precedent-setting nature,

2.2.5.4 that in the absence of a chairman of the LACAV before his election by the participants in October 1967, the ex officio participant and Director of the PAHO/WHO Collaborating Center in Arboviruses, Dr. O. de Souza Lopes, in conjunction with the PAHO Office of Research Coordination, be responsible on an ad hoc basis for assembling an agenda for the meeting, for arranging appropriate liaison activities with the American Committee on Arboviruses and its subcommittees, for arranging for reports such as those from the Subcommittee for Training in Arbovirology in Latin America, the Ad Hoc Committee for Survey of Arbovirology in Latin America, the USPHS-NIH Arbovirus Committee concerned with reagents, the American Committee on

Arboviruses and perhaps some of its subcommittees, and possibly others, and finally for arranging the necessary facilities for this meeting, and

2.2.5.5 that through its Office of Research Coordination, PAHO will assist the LACAV in procurement of funds required for at least its first organizational meeting in October 1967.

### 3. Proposed Multinational Latin American Centers for Training in Scientific Fields Basic to Investigations of Arboviruses and other Viral Zoonoses

There is a serious need for development of training resources in Latin America to provide scientists essential to the future of many biomedical academic and research programs. Specifically, basic research in arbovirology, involvement of a better understanding of the public health and veterinary importance of arboviruses, and development of procedures for control of arboviral diseases require a multidisciplinary team approach by adequately trained scientists from diverse disciplines such as human and veterinary medicine, virology, vertebrate ecology and medical entomology. Although there are some very competent research workers and academicians in Latin America working on these problems, their number is inadequate, and therefore a training program is proposed to provide a means to increase the number of scientists available for both academic and research positions related to arbovirology. The initial program will focus on the need to recruit persons at the post-bachelor and post-medical levels into a carefully structured educational experience that combines academic and research training in both laboratory and field environments. While the program will focus on arboviruses, it will have a close relationship to the general need for an increased

reservoir of scientists in all fields of virology as well as microbiology, epidemiology, and the medically and ecologically oriented biologic fields of entomology and vertebrate zoology.

### 3.1 Training Objectives

Three areas of training are selected for development at this time and at the beginning professional level. The fields are medical virology, medical entomology and vertebrate ecology. The initial program recommends a training period of 2 years; during any 2 year period, there should be up to 3 trainees in each field. Recruits to the program will be sought mainly from physicians in the post-intern period and from graduates of veterinary and biological curricula of universities in the Americas.

### 3.2 Organization and Training

It is proposed to organize the training program under the aegis of the Pan American Health Organization, in close cooperation with the Latin American Committee on Arboviruses, by designating selected academic and research organizations as a federated group to be known as PAHO Research and Training Centers in Arbovirology. It is recommended that a Sub-Committee for Training in Arbovirology in Latin America be appointed by PAHO from within LACAV members to:

- 3.2.1 Assist in the development of agreements with the institutions who will be part of the federated centers,
- 3.2.2 Finalize the curriculum for trainees,
- 3.2.3 Recruit candidates,
- 3.2.4 Advise PAHO on selection of candidates,



3.2.5 Evaluate and advise PAHO on the need for and possible scope of additional subsequent training programs at lower technical and more advanced academic levels,

3.2.6 Advise on future modifications in training programs that experience indicates are desirable,

3.2.7 Coordinate with training programs that will develop in related fields of science, and

3.2.8 Advise PAHO on other policy and administrative matters concerning training programs, as they arise.

The recommended Sub-committee membership is:

Dr. Carlos Sanmartin (Chairman), Universidad del Valle,  
Cali, Colombia.

Dr. Pedro Galindo, Gorgas Memorial Laboratory, Panama City, Panama.

Prof. Bernardo Villa, Universidad Nacional Autónoma de  
México, Mexico City, Mexico.

Dr. Leslie Spence, Trinidad Regional Virus Laboratory,  
University of the West Indies, Port-of-Spain, Trinidad.

Dr. Oscar de Souza Lopes (Secretary), Instituto Adolfo Lutz,  
São Paulo, Brazil.

### 3.3 Curricula

Common to all 3 training programs will be an intensive one month course in the Fundamentals of Animal Virology. It is proposed that the first course be developed for the summer of 1968 on the campus of the Universidad del Valle, Cali, Colombia. Enrollment in the class will be limited to 15 students which will include up to 9 arboviral trainees and 6 or more selected trainees from other areas and programs of microbiology

and medicine who would benefit from such a course (although they would not continue in the arboviral training program). It is considered essential that all trainees in this course be able to read and understand texts and scientific articles that are published in English, but the course will be conducted primarily in Spanish.

Subsequently, each arboviral trainee would complete his 2 years of training in one of three distinct but interrelated programs which would have the following three factors in common:

All trainees will be assigned a feasible individual research project that is to be completed in the course of his 2 year program at an appropriate research unit in Latin America.

All trainees will be given the opportunity to participate in the field aspects of epidemiologic investigations of any arboviral epidemics that develop in the region where he is in residence.

On satisfactory completion of the training period, each trainee will receive a certificate to be arranged by PAHO and the Sub-committee for Training in Arbovirology in Latin America.

Recommendations for additional recruitment and repetition of the animal virology course in the second or subsequent years of the program will be made by the Sub-committee on the basis of experience during the first year.

The 3 specific training programs will be as follows:

### 3.3.1 Medical Virology

Three trainees to be selected from graduates of university educational programs in human or veterinary medicine or microbiology.

#### 3.3.1.1 Curriculum.

The one month course in the Fundamentals of Animal Virology.

Assignment for one year to a virology laboratory program that encompasses the major groups of viruses pathogenic to man and includes an arboviral research program. During this initial period the trainee will:

receive intensive experience in the virological procedures utilized in diagnostic and research studies;

learn the overall objectives and methods of the medical and field aspects of arboviral research; and

be available for participation in epidemiologic investigations of any recognized epidemics of arboviral disease in his area of Latin America.

Assignment for the second year will allow the trainee to pursue one of a choice of three areas of more extended and specialized training:

In more highly specialized areas of basic virologic research,

In a multidisciplinary field research program concerned with ecologic and epidemiologic studies of arboviruses, or

In a project related directly to laboratory aspects of arboviral research.

3.3.1.2 Federated academic and research institutions in the Medical Virology Training program can include:

Instituto Venezolano de Investigaciones Científicas,  
Caracas, Venezuela.

Departamento de Medicina Preventiva y Salud Pública,  
Universidad del Valle, Cali, Colombia.

Trinidad Regional Virus Laboratory, Port-of-Spain,  
Trinidad.

Bacteriology Department, University of the West Indies,  
Kingston, Jamaica.

Instituto Adolfo Lutz, São Paulo, Brazil.

Middle America Research Unit, Balboa Heights, Canal Zone.

Instituto Nacional de Higiene, Caracas, Venezuela.

### 3.3.2 Medical Entomology

Three trainees to be selected from graduates of an acceptable biologic science curriculum.

#### 3.3.2.1 Curriculum:

The one month course in the Fundamentals of  
Animal Virology;

The six month curriculum in Medical Entomology at the School of Hygiene and Public Health, University of São Paulo;

Assignment for at least one year to a multi-disciplinary arbovirus field research program that includes a strong entomologic component;

Assignment for up to five months to travel and to participate in one or two other projects that stress different groups of arthropod vectors, methods of study or major ecologic differences. In some instances a decision may be justified to omit travel and to extend the above one year assignment to include these five months to allow completion of a project at the unit mentioned in the preceding paragraph under 3.3.2.1.

3.3.2.2 Federated academic and research institutions in the medical entomology program can include:

The Rockefeller Foundation Virus Laboratory,  
Instituto Evandro Chagas, Belém, Brazil.

Departamento de Medicina Preventiva y Salud  
Pública, Universidad del Valle, Cali, Colombia.

Gorgas Memorial Laboratory, Panama City, Panama.

Faculdade de Higiene e Saúde Pública, Universidade  
de São Paulo, São Paulo, Brazil.

3.3.3 Vertebrate Ecology

Three trainees to be selected from graduates of an acceptable biologic or veterinary science curriculum.

3.3.3.1 Curriculum:

The one month course in the Fundamentals of Animal Virology.

A six month to one year course sequence in vertebrate zoology and ecology at an acceptable institution in Latin America such as the Universidad Nacional Autónoma de México, the Instituto Politécnico Nacional de México, or the Universidad Nacional de Colombia.

A one year assignment to a multidisciplinary field team that includes a strong component of mammalian and/or avian studies with relation to arboviruses.

If time remains in the 2 year program, dependent on the time consumed in the 6 month to one year course above, a visit to a second program to observe different approaches and ecologic environments may be included.

3.3.3.2 Federated academic and research institutions in the vertebrate ecology program can include:

Universidad Nacional Autónoma de México, México, D.F.,  
México

Instituto Politécnico Nacional de México, México, D.F.,  
México.

Universidad Nacional de Colombia, Bogotá, Colombia.

The Rockefeller Foundation Virus Laboratory,  
Instituto Evandro Chagas, Belém, Brazil.

Universidad del Valle, Cali, Colombia

Middle America Research Unit, Balboa Heights, Canal Zone.

Gorgas Memorial Laboratory, Panama City, Panama.

Smithsonian Institution Field Programs

Cornell University Medical College Field Program  
(8 week period)

National Communicable Disease Center, Arbovirus Field  
Programs in Latin America.

### 3.4 Financial Support for the Training Program

3.4.1 There will be a need for a maximum of 9 two-year fellowships in the first year of the program. In view of the multiple training sites required for each trainee, it is felt that each trainee should be supported regardless of whether his country of origin coincides with the site of formal course work. It cannot be anticipated at this time that any individual country will support individual trainees, and it is recommended that PAHO provide the proposed fellowships.

3.4.2 The success of initial recruitment of trainees and early experience in the program will dictate the number of new trainees who might enter subsequent two year cycles of the program.

3.4.3 Course in the Fundamentals of Animal Virology in 1968.

The Universidad del Valle will provide the services of resident staff, classrooms, and existing facilities.

Three visiting professors will require appointment and support from PAHO for periods of up to one week each.

A budget of \$3,000 - 5,000 should cover supplies and other expenses required. When the course is repeated in other years, additional supplies and funds would be needed.

An initial budget of \$3,000 will be required for equipment such as fluorescent antibody facility, ultracentrifuge, etc., for class demonstrations

3.4.4 It is not known if tuition and/or fees will be requested by the universities responsible for specific courses.

3.4.5 For initial and periodic meetings of the Sub-committee for Training in Arbovirology in Latin America, funds will be necessary before the program begins in 1968. The first meeting is scheduled for October 30-31, 1967, in Philadelphia, Pennsylvania.