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The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF FOREIGN AGRICULTURAL RELATIONS
WASHINGTON, D. C.

AIR MAIL

October 18, 1941

Dr. Wilson Popenoe
Calle de la Nobleza
Antigua, Guatemala

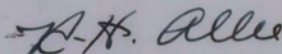
Dear Doctor Popenoe:

We have our report about finished with only a few kilograms of statistics still to be added.

I've returned to find Dr. Bressman in the Coordinator's Office as head of the Division of Agriculture and it appears that he decided it was necessary to be closer to the place where the various arrangements are being made. He informs us that the funds for the first year are available. Mr. Boyd is making arrangements to get the planning and specifications completed. I shall keep you informed of the developments.

We miss the Mexican lemons and all that go with them at Casa Popenoe. Please give my salutations to Doña Elena and ask her if she will pass on my regards to Maria and her laughing girls.

Siempre a sus ordenes,



R. H. Allee

Dr. Popenos

October 22, 1941

Senador Miguel Aspiazu
P. O. Box 710
Guayaquil, Ecuador

Dear Doctor Aspiazu:

Mr. Boyd and I have been in Washington a few days and are preparing our report on the studies made. You will appreciate the amount of detail which has to be covered in considering all the factors that contribute to the success of an institution such as the Inter-American Institute of Tropical Agriculture. Of course, our primary interest right now is in determining the right location for its organizing center. This, however, is actually a matter of small moment in relation to the ramifications that should develop from this center.

If all the Republics of the Americas are to combine through this Institute in a collective attack on tropical agricultural problems of mutual interest, we must develop its program so that the radial activities carried out in the field will be of predominant importance. Those among us who are scientists and at the same time concerned with both agricultural production and legislation, such as yourself, must, it appears, carry a considerable share of the responsibility for developing a program that is sufficiently useful to all to be worthy of collective support.

In the name of the party I want to extend our sincere appreciation for your many courtesies. Doctor Popenos is, of course, an Equadorean enthusiast of long standing, whereas Mr. Boyd and I enjoyed our short stay so completely that we now have a warm place in our hearts for your country. Please pass on our regards to Senador Elizalde, Dr. Heredia Crespo, and Don Pedro. I am having a letter sent to your Minister of Agriculture and Industry recognizing the invaluable assistance rendered to our party.

Most sincerely,

R. H. Allee
Agriculturalist

RHALlee:LB

Mr. Popenoe

October 22, 1941

Dr. Felisberto C. Camargo
Director Instituto Agronomico do Norte
Belem do Para, Brazil

Dear Doctor Camargo:

I have recently received through Doctor Butler the rainfall graphs you so kindly asked him to send on to me. We now have a rather complete complement of information on the agricultural situation in Belem and your plans for the Instituto do Norte.

As I study over the situation, I am impressed with the completeness of your program as foreseen. The combination you have made of research, education, and extension activities with health, social welfare, and the development of a sound economy bids to demonstrate the essential unity of the several avenues of approach to a socio-economic situation. I believe that all of us in scientific work have been to a greater or less degree guilty of the twin sins of breaking the problem of improving human welfare up into grotesque fragments and then proceeding to attack each arbitrary division with methods which have no necessary relationship to the way the human animal behaves or to the ecology of his surroundings.

I should appreciate it if you would put me on the mailing list for publications coming from the Instituto in the future.

Dr. Popenoe, Mr. Boyd and I look upon the work you are planning as an entirely valid approach to the problems of the great Amazon Basin. We cannot, of course, at this time speak with any certainty as to the location of the Inter-American Institute of Tropical Agriculture, for which your Government made such a generous offer of facilities. However, it is the conviction of our party that the opportunities which your organization and the natural facilities that the Amazon region present should be capitalized in the cause of inter-American collaboration on agricultural problems.

We wish also to express our sincere appreciation of the courtesies and hospitality extended to us. Will you kindly pass on our salutations to His Excellency the Interventor and to Doctor Scarez.

Most sincerely,

R. H. Allee
Agriculturalist

RHAllee:LB

R. H. Allee

October 22, 1941

Dr. Luis Cruz, B.
Oficial Mayor
Secretaria de Agricultura
San Jose, Costa Rica

Dear Doctor Cruz:

Dr. Popenoe, Mr. Boyd and I owe you a debt of gratitude for the many courtesies extended to us during our stay in Costa Rica. Your assistance and the valuable information supplied to us made it possible to carry out a thorough study in the short time available. Our report is nearly completed, and I am sure that the decision as to the location of the Institute can be expected very soon.

I am addressing a letter to your Secretary of Agriculture thanking him for the many types of assistance we received. Will you please pass on our salutations to Mr. Michaud, Mr. Grillo and others of your staff.

Most sincerely,

R. H. Allee
Agriculturalist

REAllee:LE

Dr. Poppe

October 22, 1941

Ingeniero Ernesto Molestina
Director General de Agricultura
Quito, Ecuador

Dear Doctor Molestina:

Mr. Boyd and I are busy with the final details on our report, the main body of which was prepared before we left Doctor Popence in Antigua. The information and the publications supplied to us by you and your office have been of great assistance. We also appreciate the value of your suggestions concerning the Institute program, especially since you are one of its early proponents.

Please accept our heartiest appreciation for your many courtesies, and will you kindly pass on our regards to Director Gattoni of the Quinta Normal and the many others of your staff who assisted us. I have given your greetings to Dr. Brossman and he has asked to be remembered to you.

Most sincerely,

R. H. Allee
Agriculturalist

REAllee:LB

Dr. Popenoe

October 23, 1941

Don Leopoldo Barrientos
Jefe de Departamento Agricola
Ministerio de Fomento y Agricultura
San Salvador

Dear Mr. Barrientos:

Mr. Boyd and I left Dr. Popenoe in Guatemala on October 8. We had drawn up the main features of our report with him. Since then, there has been a great deal to do in systematizing the treatment of the various technical factors involved. We shall be ready to report within a few days and will look forward to a decision as to the location of the center of the Institute in the not-too-distant future.

The actual selection of a central site is, of course, of predominant importance in getting the program under weigh. However, as I study over the development plans, I see more clearly than ever that the Institute will undoubtedly confine itself to problems that are of interest to a majority of the tropical countries. It would not, for instance, take the place of a program such as that of the Cafetelera Institute at Santa Tecla. This is a strictly national training program, whereas the Inter-American Institute would obviously confine its activities to the training of personnel for institutes such as that at Santa Tecla, and the investigation of basic agricultural problems.

We all came away from San Salvador with the desire to return soon. The hospitality you dispensed and the spirit of enterprise that prevails are a real inspiration. Will you share this letter with Mr. Zaldivar and pass on our appreciation for their courtesies to the many others who assisted us in our studies and supplied such royal entertainment.

Most sincerely,

R. H. Allee
Agriculturalist

REAllee:LB

R. H. Allee

October 23, 1941

Dr. D. C. Langham
Instituto Experimental de Agricultura
El Valle, Caracas, Venezuela

Dear Doctor Langham:

Thank you for your prompt transmittal of the information on agricultural education in Venezuela. Also please pass on to Senora Langham the salutations of Mr. Boyd and myself and our high regard for the quality of hospitality dispensed at Casa Langham.

We arrived in Washington on October 9 and have our report about ready to hand in. The site for the Inter-American Institute of Tropical Agriculture will be determined and announced as soon as the Inter-American Commission on Tropical Agriculture, the Agricultural Department of the Coordinator's Office, of which Dr. E. N. Brossman is now Director, and others, complete their deliberations. We hope that program activities and construction can begin by about March 1942.

We want all to realize that the Institute site is to be chosen with respect to its purely inter-American character, that is, it will be a place where all can combine to the best advantage in carrying out those research and training operations which can be handled better by all working together than by any one country working alone. It would not, of course, be advisable for such an Institute to assume or intrude upon the legitimate education and research responsibilities of any given country. This would be true even of the country in which the center of the Institute happens to be located. It is thus much more important to any given country that the Institute be located so as to serve its best advantage than that it be located in that country.

I was impressed with the number of Cornell people in Latin America. When I go to Ithaca, I shall have to make a report to the Alumni Office on the activities of Cornellians down there. Could you send me a list of the names and just a line on the activities of those in Venezuela or that you know of elsewhere.

Most sincerely,

R. H. Allee
Agriculturalist

RHAllee:LB

Mr. Popenoe

October 23, 1941

Dr. Rodolfo Mondolfi
Jefe de Servicio
Director de Economía Agrícola
Ministerio de Agricultura y Cria
Caracas, Venezuela

Dear Dr. Mondolfi:

The books and pamphlets mentioned in your letter of October 1 have arrived. They are proving of great assistance to me in completing the report prepared by our party in Antigua before Mr. Boyd and I separated from Dr. Popenoe. We arrived back in Washington on October 9 after an exceptionally profitable and enjoyable trip. We are deeply grateful to you and Dr. Lozano for your assistance in making a thorough study possible in the short time available, as well as for introducing us to Venezuelan hospitality. We sincerely hope that our paths will cross again in the future.

Will you please share this letter with Dr. Lozano and pass on our salutations to the many others who assisted us in Venezuela.

Most sincerely,

R. H. Allee
Agriculturalist

RHAllee:LB

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF FOREIGN AGRICULTURAL RELATIONS
WASHINGTON, D. C.

AIR MAIL

October 28, 1941

Dr. Wilson Popence
Calle de la Nobleza
Antigua, Guatemala

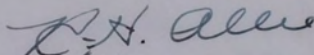
Dear Dr. Popence:

Here is a copy of the report I submitted October 27. The introduction and recommendation parts are my handiwork, radically and profitably revised by Mr. Boyd. You will recognize the rest of it. Boyd and I both think that the recommendation part on page 22 is too abrupt. If you can suggest a mellower treatment, it can be substituted.

I am also including copies of letters I have written to various people who assisted us. Mr. Wheeler has recognized the assistance of the various ministers of agriculture and reported to the State Department on those diplomatic and consular officers who helped us.

I am having a short list of publications on Agricultural Education prepared for Dr. Müller.

Sincerely,


R. H. Allee

Enclosures

Itinerary of Survey Party

Mr. Allee
Mr. Boyd

Lv. Washington (EAL)	Fri.	Aug. 22	3:45 PM
Ar. Miami			10:45 PM
Lv. Miami	Sat.	" 23	4:15 AM
Ar. Maracaibo			5:30 PM
Lv. Maracaibo	Sun.	" 24	10:40 AM
Ar. LaGuaira			1:20 PM

Mr. Allee, Mr. Boyd, Dr. Popenoe.

Lv. LaGuaira	Fri.	" 29	1:40 PM
Ar. Port of Spain			5:40 PM
Lv. Port of Spain	Sat.	" 30	9:00 AM
Ar. Belem, Para			5:20 PM
Lv. Belem	Tue.	Sep 2	10:00 AM
Ar. Port of Spain			3:25 PM
Lv. Port of Spain	Wed.	" 3	7:30 AM
Ar. Cristobal			5:15 PM
Lv. Cristobal	Thu.	" 4	8:30 AM
Ar. Balboa			<u>8:50 AM</u>
Lv. Balboa			1:50 PM
Ar. Cali			5:10 PM
Lv. Cali	Fri.	" 5	7:00 AM
Ar. Quito			9:10 AM
Lv. Quito	Tue.	" 16	7:00 AM
Ar. Balboa			12:00 AM
Lv. Balboa	Wed.	" 17	8:30 AM
Ar. San Jose			11:15 AM
Lv. San Jose	Thu.	" 25	11:30 AM
Ar. San Salvador			3:10 PM
Lv. San Salvador	Wed.	Oct 1	6:00 AM
Ar. Guatemala City			4:15 PM
Lv. Guatemala City	Wed	" 8	8:00 AM
Ar. Brownsville, Tex.			4:30 PM
Lv. Brownsville (PAL)	Thu	" 9	5:50 PM
Ar. Washington			7:15 AM

LIST OF INDIVIDUALS WHO ASSISTED
THE DEPARTMENT OF AGRICULTURE SURVEY PARTY
IN THEIR STUDY OF PROPOSED SITES
FOR THE INTER-AMERICAN INSTITUTE OF TROPICAL AGRICULTURE

Venezuela

Dr. Alberto Losada Casanova
Encargado del Ministerio de Agricultura y Cría
Caracas

✓ (Dr. Alfredo Lozano Villegas
Jefe del Servicio de Fomento Agrícola
Ministerio de Agricultura y Cría
Caracas

✓ (Dr. Rodolfo Mondolfi
~~Jefe de Servicio~~
Dirección de Economía Agrícola
Ministerio de Agricultura y Cría
Caracas

(Dr. Anselmo Escalona Salas
Director de la Escuela Práctica de Agricultura
Maracay

Belem do Para, Brazil

✓ (Dr. Felisberto C. Camargo
Director Instituto Agronomico do Norte

✓ (Dr. Eugenio Soares
Director Associação Comercio do Para
Caixa Postal N. 548

Ecuador

✓ (Dr. Ricardo Crespo Ordóñez
Ministro de Agricultura e Industrias
Quito

✓ (Senador Rafael Elizalde
~~Miembro de la Comisión de Agricultura del Congreso Nacional~~
Quito

(Senador Doctor Miguel Aspiasu²
Presidente de la Comisión de Agricultura del Congreso Nacional
P. O. Box 710
Guayaquil

Ecuador (Cont'd)

✓ (Ing. Ernesto Molestina
Director General de Agricultura
Quito

✓ Dr. Abelardo Pachano
Ingenio Valdez
Milagro

Dr. Arthur Kevorkian
Research Specialist
American Consulate
Guayaquil

Costa Rica

✓ Ing. Agr. Alfredo Volio
Secretario de Agricultura y Fomento
San Jose

(Dr. Luis Demetrio Tenoco Jr.
Secretario de Educacion Publica
San Jose

✓ Dr. Luis Cruz B.
Oficial Mayor
Secretaria de Agricultura
San Jose
(Director del Departamento Nacional de Agricultura)
Also Director de la Facultad de Agricultura de la
Universidad Nacional

Dr. Julio Peña
Gerente General
Banco Nacional de Costa Rica
San Jose

Ing. Alfredo E. Hernandez
Jefe de la Sección de Juntas Rurales de Credito
Banco Nacional de Costa Rica
San Jose

✓ (Mr. W. N. Bangham
Director Plant Research
The Goodyear Rubber Plantations Company
Apartado 2050
San Jose

El Salvador

✓ (Coronel Carlos Mejía Osorio
Subsecretario de Fomento y Agricultura
San Salvador

✓ (Don Rafael Zaldivar
Inspector General de Carreteras
Ministerio de Fomento y Agricultura
San Salvador

✓ (Don Leopoldo Barrientos
~~Jefe de Departamento Agrícola~~
Ministerio de Fomento y Agricultura
San Salvador

✓ Doctor Mario Levy Vanseveren
Ministerio de Fomento y Agricultura
San Salvador

Don Enrique Alvarez
Asociación Cafetalera
San Salvador

Don Agustín Alfaro Moran
Asociación Cafetalera
San Salvador

Dr. Alex Salazar H.,
Director Servicios Tecnicos
Asociación Cafetalera
San Salvador

Don Luis Amparo Bustamante
Comisión de Defensa de la Industria Azucarera
San Salvador

Don Tomas Regalado G.
Comisión de Defensa de la Industria Azucarera
San Salvador

Don Juan Talavera Crespo
Comisión de Defensa de la Industria Azucarera
San Salvador

El Salvador

Don Walter Deininger
Asociación Ganadería
San Salvador

Don Ricardo Barrientos
Asociación Ganadería
San Salvador

Dr. Rafael Reyes
Asociación Ganadería
San Salvador

Don Mauricio Meardi
Asociación Algodonera
San Salvador

Don Walter Wirth
Asociación Algodonera
San Salvador

Dr. Luis Escalon
Director Escuela de Mayordomos de la Cafetalera
Santa Ana

REPORT
ON
STUDY OF SITES OFFERED
FOR THE
INTER-AMERICAN INSTITUTE OF TROPICAL AGRICULTURE
BY
VENEZUELA, BRAZIL, ECUADOR, COSTA RICA, and EL SALVADOR

Submitted by
The Technical Committee from
The United States Department of Agriculture

Washington, D. C.
October, 1941

Table of Contents

<u>Letter of Transmittal</u>	<u>Page</u>
Introduction	1
Factors Used in Comparing Sites.	2
Venezuela.	4
Belem do Pará, Brazil.	10
Ecuador.	11
Costa Rica	14
El Salvador.	19
Recommendation	22

Appendix

- Itinerary of the Survey Party
- List of Individuals who Assisted the Party
- Memorandum to Minister of Agriculture,
Venezuela
- Meteorological Information

October 23, 1941

To: Mr. G. Laguardia, In charge, Division of Latin
American Agriculture

From: R. H. Allee, In charge, U. S. Department of Agri-
culture, Party for the Study of Proposed Sites for
the Institute of Tropical Agriculture

Subject: Report on Study

Wilson Popenoe, George R. Boyd, and R. H. Allee in transmitting their report on the sites proposed for the Inter-American Institute of Tropical Agriculture desire to bring to your attention the fine spirit of cooperation shown them in the countries where studies were made. We are attaching a list of those officials and private individuals who contributed most to make an adequate study possible in the time available. We also wish to point out the invaluable assistance received from the U. S. Diplomatic and Consular officers in all of the countries visited and from the representatives of the Bureau of Plant Industry in Belem do Pará and Costa Rica.

It is the considered judgment of this party that the leaders of the countries studied appreciate the great potential value of cooperation of the type foreseen in the plans for the Institute. The less scientifically oriented leaders sometimes demonstrate a tendency to anticipate results from scientific work within time limits somewhat more restricted than the biological necessity demands. In some cases the local problems of a given country quite understandably assume disproportionate importance. However, the Inter-American character of the program planned is becoming more widely appreciated.

It is our suggestion that all efforts possible be made to get the first steps of the investigational and training program under weigh at once, that the program be widely emphasized as concerned with

2--Mr. G. LaGuardia--October 23, 1941

problems of general interest rather than assuming or intruding upon the legitimate education and research functions of the individual countries participating, and that joint planning of the scientists of the hemisphere on the Institute program be continued and emphasized.

We desire to re-emphasize the strategy of an early start. The Institute idea has been discussed for years by leaders in both Tropical America and the United States. The study of the proposed sites stirred up new enthusiasm and created additional adherents. We are now in a stage where a fine spirit of collaboration can be expected if the plans move ahead at once.

RHallee:RFM



REPORT OF THE SURVEY PARTY OF THE DEPARTMENT OF AGRICULTURE
ON SITES PROPOSED FOR THE INTER-AMERICAN INSTITUTE OF TROPICAL
AGRICULTURE

The technical committee appointed by direction of the Secretary of Agriculture, consisting of Ralph H. Alles, Wilson Popenoe, and George R. Boyd, has completed its study of the sites offered by Venezuela, Brazil, Ecuador, Costa Rica and El Salvador for the proposed Inter-American Institute of Tropical America. As was indicated by the generous terms of the initial offers submitted by the five countries, it was foreseen that each would be ready to make available to the Institute any of the sites or facilities within their respective countries which would be advantageous and helpful in promoting the program of the Institute. It was therefore decided that optimum cooperation could be expected from all and that the recommendation of the committee as to the location of the Institute should be based entirely on those technical factors of strategic importance in achieving the purpose of the Institute. The committee therefore considered that its first responsibility was to define in a general way the objectives of the proposed Institute in order that it might determine the comparative possibilities of obtaining these objectives at the various sites. From a careful consideration of all published information concerning the proposed Institute, it was thought that the objectives might be listed as follows:

1. Preparation of key personnel for agricultural education and research work in tropical America. This educational work is not to conflict with the educational institutions within any country but is to be in the nature of post-graduate work to supplement the present agricultural educational facilities of Central and South America.

2. To foster and facilitate research in tropical agricultural problems including improved plant and animal varieties; improvement of production techniques including soils, drainage, and irrigation; control of pests and diseases; development of new methods of processing and new uses for agricultural products; and studies of farm management, marketing and the public problems of agriculture.

3. Development of extension activities for the purpose of securing a greater application of improved agricultural practices in Central and South America.

It is realized that these objectives probably are not complete but it was thought that they sufficiently indicated the type of work to be done for the purposes of the committee, that is, the study of possible locations with reference to the work of the Institute.

It appeared to the committee that it would be advisable to set up certain factors which might affect the work of the Institute and which could be used to measure the comparative desirability of any site. Before leaving Washington the committee studied the methods used in selecting sites for the four federal regional research laboratories in the United States and the survey made by the Bureau of Plant Industry in locating the rubber research stations in Central and South America. With this information in hand, after reviewing the purposes and objectives of the proposed Institute and after consultation with experts on tropical agriculture in the United States Department of Agriculture and in the Pan-American Union in Washington, the following four factors were adopted:

1. Convenience of location with regard to accessibility to personnel from all countries. It is obvious that a central location within the area to be served is highly desirable. The Institute expects to draw students and faculty from most, if not all, of the countries of Central and South America, as well as from the United States. This factor was not used in comparing proposed sites within

any one country but ratings were established between the sites of various countries by using the cost of transportation from the chief ports of the hemisphere by both sea and air.

2. It was considered advisable that the Institute be located near a town of a size sufficient to provide the requirements of the Institute in such items as food, clothing, service and repair shops in so far as the Institute did not see fit to provide these for itself. The town itself should be easily reached from ports or other transportation centers by highway or railroad, or both. The cost of development of land and erection of buildings was considered in each case. However, this factor was not used in making the final comparison since all the governments concerned expressed their willingness to equalize such costs where necessary.

3. Suitability from the standpoint of health and efficiency. The ideal location for such an Institute would certainly require a healthful and congenial climate. Extremes of temperature or rainfall and the prevalence of disease would detract seriously from the desirability of any site.

4. Representative conditions for subject matter studies in tropical agriculture. Since tropical agriculture covers such a wide variety of crops and conditions, it was thought that the ideal location would be the one which provided typical conditions for anticipated studies in soils, drainage, irrigation, land use, tropical crops, livestock, dairying, forestry, and pests and diseases. In other words, the ideal site would consist of a comparatively small area covering all of the conditions of temperature, rainfall, soils and crops to be found in the tropics. While the committee did not attempt to define the scope of work of the Institute it did limit its consideration of possible crops to those which seemed to be of particular importance in the economic development of the hemisphere as well as those which apparently are in need of research and development. Early in the investigation it became apparent that it would be impossible to find a site which, in itself, covered the entire range of tropical conditions, so that the problem resolved itself into finding a central location which covered a wide range of conditions with branch stations within short distances for the study of those problems which required extreme conditions of elevation or climate.

At the beginning of the discussions in each country, the committee attempted to outline to the agricultural authorities the requirements as given above for the ideal site and suggested that the governmental authorities limit their proposals of sites to those which, in their opinion, most nearly met the necessary requirements and to those which, if selected,

could be made readily available to the Institute. All sites proposed by each of the five countries were given careful consideration.

Venezuela

The Santa Rosa property near Porto Cabello had been mentioned in the original Venezuelan offer. They had, however, before the departure of the party from Washington, made a further offer of any other site which might be more suitable. After full discussion it was decided by the Government representatives in Caracas, that the Lake Valencia Basin offered the most possibilities for the purposes of the Institute. Consequently, the major portion of the time available was spent in studying the area in the vicinity of Maracaibo with only a short visit to Santa Rosa and the Porto Cabello region.

As had been foreseen by the Venezuelan officials, Santa Rosa is not a desirable site. The soils are clays and hard sandy clays unsatisfactory for many crops. The flat lands lie at practically sea level, and the hills are steep and dry.

The site of the Practical Agricultural School near Turnero offered many possibilities. A main school building of one-story, concrete construction is available. This includes two large class rooms, at present seating forty students each, but possible of division to make four rooms with space for about 25 students each. Six rooms now used for laboratories are arranged around a large swimming pool. The altitude is about 1500 feet. The soils are sandy loams running down to very fine sand at about two feet. They are not very fertile. Irrigation is necessary, and 50

hectares are now under irrigation, served by 1,375 meters of concrete-lined distribution system. The water supply comes from two wells said to have ample capacity for the needs of the present school. The availability of the present buildings was considered a distinct advantage as offering the possibility of starting with the Institute program before the proposed plant is completed. However, further consideration showed that it would be impracticable, if not impossible, to include the present building as an integral part of the building program of the Institute on account of the small area available for a building site. The hills and the railroad and highway on either side limit the building site to such an extent that it is unsuitable for a more extensive plant. It could, however, be used temporarily while the Institute is in the process of construction.

The land across the tracks from the Agricultural School is available and of somewhat better quality, but is said to be alkaline in spots. It is also rough and lacks uniformity. Division of the area by the railroad and the highway is an undesirable feature.

Several haciendas along the southern and south-western shores of the lake were considered as representing possible sites and were studied carefully. The result of this study was the selection of a possible central building site on the Hacienda Tapa Tapa, 4-1/2 kilometers from the plaza of Marakay, between the concrete highway to Valencia and the lake. An additional area was suggested at La Cuarta on a concrete highway 14-1/2 kilometers south-east of Marakay, with the addition of small areas of a few hectares each at Guanita (altitude 2300 feet) and Rancho Grande

(altitude 3500 feet) 12 and 22 kilometers respectively north of Marakai on the paved highway to Ocumare de la Costa. The areas selected are described in more detail in the attached copy of the memorandum submitted to the Minister of Agriculture in Caracas.

Tapa Tapa lies at an elevation of 1450 feet, and is characterized by light soils, mainly very fine sandy loams on the surface running down to very fine sands at 12 to 24 inches, with a P H of about 5.5 to 6.0. The soils are rather unusually uniform over the whole area and flat, as is characteristic of such old lake-bottom areas. Most of the land is now in a crop of cotton. The climate is characterized by a well-marked dry and wet season. The rainfall distribution is indicated in the attached table. The monthly mean temperature reaches a high of 25 degrees Centigrade in April and a low in December and January of 22.2 degrees Centigrade. Climate and soil are suited to a wide range of tropical crops with the use of irrigation, for which a system is already installed, utilizing the water from ^{the} a lake pumped to the upper edge of the area by a State-owned electric pumping plant. The maximum lift is about 25 feet, and the system apparently has ample capacity for the probably needs of the property. The lake water is somewhat alkaline, containing, according to a local analysis, 200 parts per million of salts. There is some possibility, of course, that the continued application of this alkaline water might result in an undesirable cumulative effect on the soil. However, there is said to be an abundant supply of ground water of good quality at shallow depths which could be used

should the continued use of the lake water develop too much salt in the soil. Data covering the duty of water are not available, as the irrigation system has been in operation only a short time. It is thought that the irrigation season would cover the period November 1 to June 15, with the peak demand during December and January. Irrigation requirements will vary considerably with the crops grown. The electric rates are at 600 Bolivars (\$189) for 10,000 kwh. and 1/10 B. (\$0.03) per kwh. on all above 10,000.

The conditions at this site are satisfactory for investigation of a wide range of crops which are considered as being most important among those likely to be studied at the Institute. These would include:

1. The propagation, improvement and culture of coffee and cacao.
2. Livestock breeding and dairying, including the study of forage plants and pasture grasses.
3. Fiber plant investigations, including cotton, kapok, henequen and others.
4. Studies on the culture and improvement of corn and rice.
5. Certain indicated work on sugar cane culture and improvement.
6. Investigation of crops yielding industrial and edible oils, such as African oil palm, peanuts and sesame.
7. Work on cassava as a source of starch.
8. Improvement of such tropical fruits as citrus, avocados and mangoes.
9. Cultural studies and improvement of tropical vegetables for supplementing the diet and supplying local markets.
10. Studies of tropical timber trees in relation to reforestation and erosion control.
11. In connection with these crops and looking forward to the development of economic plants, it would be possible to form an extensive collection of tropical species, emphasizing the bringing together for study and trial varieties or strains

whose commercial value appears to merit exploitation.

12. The site offers excellent opportunities for investigation of the problems of tropical irrigation.

It should be pointed out that although the above discussion considers Tapa Tapa as the best potential building site, many of the crops could be somewhat more advantageously produced on the heavier and moister clay loams and marl soils of La Cuarta or at the higher altitudes of Guamita and Rancho Grande. The sites should be considered as potentially including these outlying sections, as indicated in the statement made to the Minister of Agriculture. The site does not include the opportunity of investigating rubber or abaca within a feasible distance. The nearest sierra region is at Merida, a distance of about 170 kilometers.

The town of Maraca~~y~~ presents excellent market possibilities and would be able to furnish all the supplies and services that the institute would require. The malaria situation is well in hand, with an extensive system of drainage ditches and canals apparently eliminating most of the breeding zones. Mosquitoes are somewhat prevalent, nevertheless. However, the local health authorities state that the incidence of malaria has dropped to almost zero level since sanitation work was initiated in the town by a Rockefeller Foundation program.

X
Maracay is the capital of the State of Argua and has a population of about 30,000. It is 106 kilometers from Caracas, 45 kilometers from Valencia, and 17 kilometers from Porto Cabello. All of these areas are connected both by railroad and concrete highway. Maracay also has airplane

facilities to the important cities of Venezuela.

While costs of living are comparatively high in Venezuela, this fact was not considered by the committee since the Venezuelan Government had offered to equalize these costs with that of other South American countries.

Belem do Pará, Brazil

The site offered by Brazil at Belem differed from all the others in that it presented a strictly specialized situation with a narrow range of agricultural possibilities. The altitude is 46 feet above sea level, and the latitude only 1° 27' south of the Equator, although the climate is tempered by the Eastern Trades sufficiently to present temperatures much more agreeable than would be expected. Agriculturally the area is suited only for crops of the wet, low-altitude tropics.

The site offered includes the extensive buildings of the Instituto Agronomico do Norte in the outskirts of the city of Belem. Practically any amount of land that would be desired is available. The Institute at the present time has an area of 4,000 hectares immediately surrounding the buildings. Aside from a narrow belt along the river banks, which are clay loams to light clays subject to flooding at certain times of the year, the soils are sands and sandy clays, leached and unsuitable for many crops. There are 1,000 hectares of these sandy soils round about the Institute building site. The city of Belem has a population of slightly over 300,000 and would supply all the services required.

The only shortage would be in such vegetables as peas, cabbage, carrots, and potatoes, which cannot be grown in the Amazon region and must be imported from over 2,000 miles south of Belen.

The survey Party considers this site to be admirably suited to the study of many of the problems of the Amazon Basin, but unsuited to study of the problems of Tropical America in general. The Instituto Agronomico do Norte has an excellent program under plan, backed by a substantial budget and with many able staff members already selected.

Ecuador

Since any land in the entire country that might be found suitable was offered by the Ecuadorean Government, the survey party found it necessary to study several areas. The first study was made along the Quito-Guayaquil Railway between Bucay and Conducto. A trip was then made up the Guayas River via Vinces to Quevedo. It was decided after extensive conferences with local experts and consideration of the studies made, that the area offering most possibilities was that in the region between Quevedo and the mountains. This is the only area offering reasonable altitudes combined with good soils and generally suitable conditions for the investigation of tropical crops.

Due to the difficulties of transportation, no specific site was chosen, but land in unlimited quantities is available in all this area. Since the Conducto and Quevedo sites were most seriously entertained as possibilities, they will be described in somewhat more detail. It was

found that Conducto has too little nonflooded, uniform land for the Institute, and there is little opportunity to find areas for higher-altitude crops in the steep mountain areas back of it. The altitude of Conducto is 80 meters. While it is located on the railroad, the probability is that it will be many years before it has good highway transportation. The drainage problem is of unknown proportions, but appears to present difficulties. Part of the area is at present drained by pumping. The soil is typical of the flood-plain region, with good soils only on narrow strips along the banks of the rivers.

The area between Quevedo and the sierras along the highway from Quevedo to Markuchi offers good deep volcanic clay loams to light clays of excellent character and fertility. The area is isolated at present except for the unsatisfactory river transportation. The highway planned from Quito to Guayaquil will pass through the region when completed. Taking Quevedo as a center, there are within a radius of 50 kilometers excellent areas for experimental work on rubber, coffee, cacao, abaca, cinchona, fiber plants, corn and rice, oil seeds such as palm nuts, peanuts and sesame; vegetables, and tropical timbers. The region is also suitable for work on fruit, livestock breeding and dairying under tropical conditions. Within a narrow range, there is a wide difference in rainfall. Conditions would be excellent for the establishment of a botanical garden such as described previously. The most likely site to propose for the Institute would be at about 2,000 feet, or 30 kilometers above Quevedo. An outlying station below Quevedo

would present good conditions for irrigation and drainage studies.

One of the great objections to the proposed site is the difficulty of communication and access under present conditions. The principal all-year-round communication from Guayaquil is at present by water transportation on the Babahoyo and Vinces Rivers to Quevedo and thence by an improved but not paved highway to the site. Transportation service is at all times slow and may be impeded by either low or high water, depending on the season. The improved highway from Quevedo extends eastward to the Cotapexi Exploration Company's mine and beyond that a few kilometers. It is ultimately to be extended to Latacungo on the Cajabamba-Quito highway and railway. Some 35 kilometers of the most difficult construction on this road remain to be completed. It is expected, however, that this road will be finished by September 1, 1942, and that by the end of the year 1944, the highway between Quito and Guayaquil will be completed if an anticipated loan from the United States of America is available. It is also anticipated that an airfield will be completed by 1942 near Quevedo. No railways are contemplated or likely in this region. The only reliable source of supplies and services would be Guayaquil.

Building materials, with the exception of steel and mechanical equipment, are available in the locality or at Guayaquil. Wage rates are much below those now common in the United States of America. In the coastal region, unskilled labor costs from 3-1/2 to 4-1/2 sucres (24 to 31 cents) per 8-hour day. Skilled labor costs up to 8 sucres

(55 cents). Careful supervision is required. There is an acute labor shortage on the coast, particularly during the wet season. Wage rates for Indians on the highlands are 2 to 3 sucres per day. However, they refuse to work on the coast except during the dry season. A new cement mill is being built at Guayaquil by a New York corporation. Native building woods of very good quality are available at comparatively low prices.

Costa Rica

Due to the narrow range within which so many climatic and soil conditions are found, it was difficult to choose between the various attractive sites offered by Costa Rica. In general, the choice was between the seasonal Western Coast, the wet Eastern Coast, and the high-altitude Sierra Region. These are all within about two hours' travel by car of each other.

The El Alto site originally proposed was studied and pronounced too high to be representative of tropical conditions. The choice then lay between the Alajuela region on the seasonal meseta but near the western coastal area and the Turrialba region just over on the wet Atlantic side of the Continental Divide.

A likely site was proposed 7 kilometers west of the town of Alajuela on the paved highway and at 2600 feet altitude. This is a well-developed coffee and cane region. The soils are friable, volcanic clays, varying from sandy to heavy, with stiff or heavy clay subsoils, which, however, are not plastic. In the valleys near this site, small

deposits of alluvial soil are found. This is an area of well-marked wet and dry seasons, as indicated by the accompanying tables. The region is suitable for investigational works on such crops as coffee, cacao, sugar cane, fruit trees, oil-yielding plants and vegetables, in addition to livestock and dairying. It is not suitable for rubber, abaca, bananas, and the other crops adapted to the wet lowlands. It would offer opportunities for study of irrigation practices. The area is handicapped by strong winds during the dry season, which might be injurious to some crops. It has good railroad and highway communications and is 30 kilometers from San Jose, the trade and transportation center of the country. The alternative site and the one which was finally chosen, is at Turrialba. The town of Turrialba is on the main railroad between San Jose and the chief port, Porto Limon, in what is called the Valley of the Reventazon, after the river by that name which passes through it. It is also on the highway from San Jose to Limon, which is at present partially completed. It is 112 kilometers from Limon and 75 from San Jose. The road to San Jose is normally negotiable in about 1-1/2 hours. About two-thirds of this road is paved, and work is progressing rapidly on the remainder. The specific site chosen known as "Cabiria" is 2 kilometers from the town of Turrialba on a paved highway and on a branch of the railroad to Pejevalle. It is at an altitude of 2,050 feet. The climate is typical of the wet tropics agriculturally, as indicated by the attached tables, but is healthful and pleasant. Two hundred and forty (240) hectares of land are available.

The soils are volcanic materials varying from clays to coarse gravels. In general, the surface soils are of good texture running down to coarser material at 2 to 3 feet. At present the area appears to suffer somewhat from lack of drainage, but there is ample outlet so that with adequate drains, it could be put in good condition. The farm is at present in mature coffee, which is in excellent condition. The terrain is attractive and desirable for building sites and experimental plots. The body of the property is on a level mesa overlooking the river, which lies at a considerably lower level.

This property would be suitable for experimental cultivation of coffee, cacao, and sugar cane; corn and rice; fruit trees and vegetable crops; though the climate is somewhat wet for certain of these, such as mangoes and avocados; it could be used for experimental work on livestock and dairying, under tropical conditions. Rubber and abacá can be grown experimentally, although the elevation might prove slightly high for commercial production. The region also lends itself to investigation of tropical reforestation problems and erosion control. Due to the well distributed rainfall, there is no opportunity in Turrialba itself for irrigation studies, but it would be entirely suited to investigation and demonstration of drainage practices. As a location for an extensive collection of tropical economic plants, this site is excellent. The altitude is not too great for cultivating all species common to the tropical lowlands. There is ample opportunity to develop cinchona and other crops requiring high elevations within 2 to 3

kilometers on the slopes of the neighboring hills and still further opportunities within 10 kilometers on the slopes of the Turrialba volcano. Barley, wheat, potatoes, and other sierra crops are now grown commercially on the slopes of the Irazu volcano above Cartago and about 30 kilometers from the site. Toward the East Coast there are within 40 kilometers extensive areas of wet lowlands suitable for studying production of rubber, abacá, and oil palms. For studying production problems under the seasonal conditions of the intermediate elevations, excellent areas are available in the Alajuela region already described and 100 kilometers distant. The United States Department of Agriculture Bureau of Plant Industry Rubber Experiment Station adjoining proposed site and the extensive Goodyear plantation at Cairo 52 kilometers distant by railroad, offer excellent opportunity for collaboration on this important crop and in cooperative use of the facilities developed.

Turrialba thus offers within a distance of less than two hours by car or train an almost complete cross-section of Tropical American conditions. Furthermore, without being actually on the seacoast in an unhealthy climate, it represents the wet lowland regions that are so extensive in Tropical America. To a large degree the future development of Tropical American agriculture depends upon the solution of the problems of these wet lowland areas since the highlands are more fully developed.

The town of Turrialba could provide most of the supplies and

services required for the Institute, and also the city of Cartago, 35 kilometers distant, is the chief vegetable-growing and dairying section of Costa Rica. The permeable nature of the soil and the excellent natural drainage of the area serve to prevent the development of mosquito larvae, thus decreasing the likelihood of malarial infection.

Sources of electric power and water are available, but as developed at present, would probably not be sufficient for the needs of the Institute when it is in full operation. It has already been determined that the municipal power plant can in a short period of time expand its production to take care of the electricity needs of the Institute at extremely low cost. Ample sources of gravity water are available and can be made available in any quantity desired. Building materials, except steel and mechanical equipment, are available within the country and are of good quality. Labor in the Turrialba area runs from 2.25 colonias (56 cents) per hour per 8-hour day for common labor to as much as 30 (\$2) for plumbers and electricians. Carpenters, painters, and masons can be obtained for from 4 to 6 C (\$1 to \$1.50) per day. In a general way, the figure used in estimating the cost of reinforced concrete buildings is about 160 C (\$40) per square meter for the first floor and 190 C per square meter for the second floor. Earthquake-resistant construction is advisable. However, although Turrialba has experienced many small quakes, it has had none of serious proportions.

El Salvador

After studying proposed sites at Santa Tecla, Sonsonati, and Cuyagualo at the suggestion of the Government of El Salvador, a prospective site was chosen in the Cuyagualo region 28 kilometers from San Salvador on the Pan American Highway between San Salvador and Santa Ana.

The Santa Tecla site of the Coffee Institute experiment station was offered, including an excellent building. The site is 14 kilometers from San Salvador on the paved Pan American Highway and is in the outskirts of the town of Santa Tecla. The altitude is 3,000 feet. The soils are deep and rather coarse, black, volcanic loams of good fertility. The flat land is almost completely occupied by the present buildings, with very little opportunity for expansion.

The property of La Agronomia, near Sonsonati, is on the slopes of the Izalco volcano, sloping rather rapidly toward the town, which is 500 feet above sea level at 8 kilometers distance. The soils are excellent black volcanic loams in places, underlain by stiff clays, but are coarse sandy loams in others. The fields are badly cut up by deeply eroded streams, and no level plots of more than a few acres are available. The property has a building constructed in 1911 and used for five years as an agricultural school. Since then, it has been occupied only by tenant families. The roofs are in bad condition, and the walls have deteriorated badly. It seems unlikely that the building would be an asset. The property is off the main highway and has an inferior dirt road from Santa Ana, a distance of 35 kilometers, over the slopes

of the Izalco volcano and rising to about 5,000 feet. Another dirt road leads off from the Pan American Highway at the 22-kilometer mark from San Salvador. There is a railroad through Sonsonati.

There are extensive Government-owned properties in the broad valley known as Cuyaguala. After a general survey of the region, the two most likely sites were studied in detail. An area 2 kilometers along the road to Sonsonati from the Pan American Highway contains some good black, sandy loam soil and offers excellent opportunity for developing irrigation. However, much of the property was flooded and covered with from 15 to 30 inches of sand during the hurricane of 1934. It is now badly in need of drainage and much of it is covered with second growth. A high-tension electric power line passes the property.

The site presenting the best possibilities of all offered for consideration in El Salvador is that running from the 28-kilometer to the 32-kilometer marks, from San Salvador, on the west side of the Pan American Highway and bounded on the north by the Rio Sucio. The soil here is the typical black volcanic-silt loam overlaying a permeable strata of pumice to depths varying from 14 to 36 inches. This pumice layer, called "talpatate", locally can be broken up by subsoiling if desired and incorporated in the soil. The land is now either in cane or pasture and is uniformly smooth, sloping gently away from the road and lying at 1700 feet altitude along the highway. The Rio Sucio has ample water for irrigation during the dry season, with a lift varying from 15 to 20 feet.

This area would be suitable for experimental work with coffee, cacao, and cane; livestock and dairying, forage plants and pasture

grasses; breeding and cultural studies with corn and rice; oil-bearing seeds such as oil palms, peanuts, and sesame; varietal studies with practically all tropical fruits; tropical vegetables and experimental work with tropical timber trees, especially those suited to relatively dry climates. The area would also be suited to cotton and several other fiber plants. The area would not be satisfactory for experimental work with rubber, abacá, or cinchona, but the latter probably could be grown on the slopes of neighboring volcanoes, with the possible limitation that the mountain area might be too dry in certain years for this crop. The adaptation of the area for a collection of tropical species would be the same as that already described for Venezuela.

Building materials, with the exception of structural steel and mechanical equipment, are available. Labor is plentiful and cheap, starting at \$0.20 a day for common labor, with somewhat higher rates for skilled artisans, of whom there is an ample supply. There are a number of contractors in the country accustomed to doing the quality of work required for the Institute. A striking feature of the city of San Salvador is the number of fine new buildings, both residential and industrial

Recommendation

Having studied all the facts obtainable concerning the best site offered by each country, it remained for the committee to evaluate those facts and to arrive at a decision as to which of all the sites offered seemed best adapted to the needs of the proposed Institute. To this end, the following comparative analysis of the data collected for one site in each country was prepared, in which each of the factors heretofore discussed was broken down and the most favorable site in respect to each factor was rated 1, and the least favorable 5. It will be noted that the Costa Rica site ranks considerably above all others and it is the considered judgment of the committee that the site of Finca Cabiria, near Turrialba, Costa Rica, be selected from all the sites offered as being the one best adapted to the needs of the Institute.

COUNTRIES	Factor 1	Factor 2	Factor 3	Factor 4	Score
Venezuela	2	3	3	3	11
Brazil	5	1	5	5	16
Ecuador	4	5	4	2	15
Costa Rica	1	2	1	1	5
El Salvador	3	4	2	4	13

Caracas, August 28, 1941

MEMORANDUM FOR THE MINISTER OF AGRICULTURE

The North American Commission plans to include in its report to Washington in reference to the Inter-American Institute of Tropical Agriculture and the possibility of establishing the center of its investigations in Venezuela, the following points:

- First. The possibility of utilizing the facilities available in the Practical Agricultural School of Turmero while the buildings of the projected Institute are in construction.
- Second. It appears that the property called Tapatapa, located in the region of Maracay, is the best we have seen in Venezuela. It is believed that an area of about 200 hectares would be sufficient and this area would be that which lies between the Rio Tapatapa and the quebrada Buey from west to east and between Maracay-Valencia highway and the lake from north to south.
- Third. In addition to the land mentioned, it would be advisable to count upon 200 hectares in the La Cuarta area for crops not adapted to the sandy soils of Tapatapa.
- Fourth. It would also be advisable to have available about 20 hectares in the mountainous region of Guanito and Rancho Grande, where the altitude would permit growing certain crops of the temperate zone.
- Fifth. It would be desirable to use small areas of land in other parts of the country for crops not adapted to the Valencia basin, such as rubber.

Annual Precipitation
 In Santa Lucia, Nearest Station
 to Cuyagualo, El Salvador
 1936-1941

	1936	1937	1938	1939	1940	1941
Jan.	---	1.5	---	---	---	---
Feb.	---	0.1	---	---	---	---
Mar.	0.5	0.1	1.1	1.0	1.0	---
Aprl.	4.0	1.7	0.2	---	0.40	4.60
May	9.2	13.6	9.2	9.3	11.35	10.21
June	21.4	16.8	17.18	10.2	11.0	13.45
July	18.3	9.4	7.4	9.3	9.61	15.79
Aug.	16.1	14.7	8.9	10.5	14.50	14.80
Sept.	13.3	23.75	9.8	15.3	18.05	
Oct.	12.3	8.99	4.2	7.95	5.85	
Nov.	0.1	---	0.7	---	3.30	
Dec.	---	---	---	---	1.0	
TOTAL	95.20	90.64	58.68	63.55	76.06	58.85

*In Inches

Notes Concerning the Climate of Costa Rica
(Pertinent excerpts translated by R. H. Allee)
By Prof. J. Merino y Coronado, Jefe del Instituto
Físico-Geográfico, San José

Temperature: The mean temperature (of Costa Rica) is about 27°C. on the coasts; it is 19.5°C. at 1200 meters and in the neighborhood of 14.5°C. at 2500 meters of elevation. The heat gradient is approximately one degree centigrade for each 180 meters (of change in altitude). Great oscillations in temperature are unknown in Costa Rica, the respective regions having a uniform temperature throughout the day and during all months of the year. There is no snow. Frost is encountered only in the mountains above 2500 meters.

The Relative Humidity is always very high. In the Meseta Central it rarely descends below 50 or 60%. The regions near the coast are generally still more humid.

Climate of the Turrialba Region: This region is situated in zone of the Reventazon Valley. The altitude varies from 580 meters to 3,300 meters reached on the slopes of the Turrialba volcano. One finds, here, therefore, a complete range of temperatures. Nevertheless, the cultivated part is not so high and is suitable for lowland coffee. It rains sufficiently throughout the year and irrigation is, thus, unnecessary. The topography makes it possible to construct electrical plants in many places, using the volume of the many rivers and streams, which flow throughout the year.

*Turrialba has a mean temperature of 23.5°C. (74°F.)

The prevailing winds in this region come from the Atlantic, and on occasion from other directions in case of Meteorological disturbances (e.g., Caribbean cyclones) but never reach hurrican velocities. The influence of the Northerners which sometimes occurs inthe months from December to March occasionally attain the force of a high breeze, ("gran fresco").

Annual Precipitation
 In Alajuela, Costa Rica, by Months
 1937-1940

	1937	1938	1939	1940
Jan.	0.4	7.8	---	1.2
Feb.	1.6	---	---	---
Mar.	---	32.8	---	2.5
Apr.	86.7	14.6	32.5	15
May	209.5	282.7	178	184
June	368.4	245.4	354.7	362.2
July	225.4	240	151.9	104.6
Aug.	215.1	293	168	101.3
Sept.	378.2	337.3	274.1	357.4
Oct.	364.5	492.1	346.1	235.8
Nov.	225.5	246.9	212.3	106.7
Dec.	51.8	20	53.4	4
TOTAL	2127.1	2212.6	1771.0	1474.7

**In mm.

Annual Precipitation
Turrialba, Costa Rica, by Months
1936 to 1939 and Average for 25 Yrs.

	1936	1937	1938	1939	Av. 25 Yrs.
Jan.	39.6	108.5	379.5	23.6	220
Feb.	24.9	68.8	124.0	9.7	50
Mar.	71.6	50.6	99.6	51.6	80
Apr.	154.9	68.6	151.1	82.8	200
May	279.9	157.0	424.4	183.1	210
June	410.2	451.9	435.1	457.7	310
July	284.7	421.4	392.7	368.6	240
Aug.	380.5	352.0	414.5	212.6	250
Sept.	493.0	561.3	466.9	599.2	240
Oct.	360.2	219.5	322.8	412.8	240
Nov.	342.1	184.4	338.6	708.7	210
Dec.	97.3	348.0	583.2	293.1	450
TOTAL	2938.9	2992	4162.4	3403.5	2700

**In mm.

Mean Temperature ($^{\circ}$ c.) and Precipitation
(mm.) by Months in Belem do Pará

	<u>Mean Temperature</u> 1937	<u>Precipitation</u> 1928-1937
Jan.	25.8 $^{\circ}$	360 mm.
Feb.	25.2	458
March	25.4	436
April	25.4	305
May	25.6	276
June	25.5	174
July	25.5	144
Aug.	25.9	128
Sept.	26.2	123
Oct.	26.2	93
Nov.	26.2	83
Dec.	<u>26.0</u> 25.7	<u>270</u>

Annual Precipitation
 In Maracay, by Months
 1934-1937

	1934	1935	1936	1937
Jan.	14,9	0,0	0,0	26,5
Feb.	1,2	5,9	0,0	0,0
Mar.	0,0	0,0	8,0	0,0
Apr.	5,0	38,8	7,0	37,0
May	107,6	107,7	200,0	148,7
June	32,6	128,9	197,0	152,2
July	56,0	96,5	118,0	60,3
Aug.	146,4	216,0	221,0	188,5
Sept.	97,8	32,7	150,0	159,2
Oct.	197,4	179,1	186,0	122,7
Nov.	17,5	49,0	85,0	182,1
Dec.	44,3	22,7	2,8	72,0
TOTAL	720,7	877,3	1.174,8	1.149,2

**In mm.

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF FOREIGN AGRICULTURAL RELATIONS
WASHINGTON, D. C.

November 3, 1941

Dr. Wilson Popenoe
Calle de la Nobleza
Antigua, Guatemala

Estimado Señor:

Out of the conversations and observations at the Imperial College and our subsequent discussions, I have made up the attached report. I should appreciate corrections or additions when you have time.

Sincerely,

R. H. Allee
R. H. Allee
Agriculturist

Enclosure

October 31, 1941

To: Mr. G. Laguardia, In charge, Division of
Latin American Agriculture

From: R. H. Allee, In charge, U. S. Department
of Agriculture, Party for the Study of
Proposed Sites for the Institute of Trop-
ical Agriculture

Subject: Incidental Report on the Imperial College
of Tropical Agriculture, Trinidad, B. W. I.

Although the Committee did not have a study of the
Trinidad College as one of its assignments, the sit-
uation there seems of sufficient importance to merit
a separate report.

RHAllee:NFM

CC: Dr. E. N. Bressman - 2

Report of the Agricultural Department Committee for
the Study of Proposed Sites for the Inter-American Institute
of Tropical Agriculture on an Incidental Visit to the
Imperial College of Tropical Agriculture, Trinidad, B.W.I.

The Survey Committee stopped in Trinidad on the afternoon of September 2, 1941 en route from Belem do Pará to Panama. It was planned to take advantage of this opportunity to visit the Imperial College of Tropical Agriculture and they were informed ahead of time.

Principal O. T. Faulkner of the Imperial College met the committee at the airport. En route to the College he explained that he had heard of the proposed Institute and desired to suggest the possibility of its being organized as a joint Anglo-American project centered at the Imperial College. Principal Faulkner gave the following arguments in favor of this plan:

1. The Institute could capitalize the 20 years of work carried out at the Imperial College and "save about 10 years in the development of the new program."
2. We could add to the financial stability of the proposed Institute by availing ourselves of a collaborative agreement between the United States and Great Britain. It would be difficult for funds appropriating agencies of either Government to abrogate such an agreement by unilateral action.
3. We could thus avoid favoring one Latin American country over the rest by establishing the Institute on neutral ground.

BY WAY OF COMMENT:

It appears that the College is doing an excellent job on tropical agricultural research--probably the most successful in many respects in the Western Hemisphere. It is well staffed with more or less permanent men of high standing. The Principal is of the opinion that their library is the best reference collection on tropical agriculture in the Americas.

It is completely indexed and appeared to be well managed.

The College is relatively strong in Economic Botany, Plant Pathology, Entomology, Mycology, Tropical Soils, Sugar Technology, Economics of Production and Land Economics. Special enterprises of importance are the cacao investigations, the teaching and research setup for sugar refining, and the installation for the study of refrigeration and the problems of fruit transportation in general.

They plan to expand their work in dairying and truck crops. The present setup and activities along these lines are obviously inadequate

Some of the outstanding men at the College at present are Professor E. E. Cheesman, Economic Botany and Genetics; Professor F. Hardy, Chemistry and Soils; Professor C. Y. Shepard, Agricultural Economics. Professor C. W. Wardlaw, Pathologist and Physiologist, has returned to England, but this department is still strong.

The College emphasizes research and work on the graduate level with its principal aim being the training of government functionaries, specialists, and estate managers for the various British Tropical areas. The undergraduate or "diploma course" is an experiment in utilizing the facilities available for this type of educational service to the Caribbean Zone and Latin America. Principal Faulkner says the students available for this course are not adequately trained and the results have, consequently, not been satisfactory. Only four Latin American students are registered at present.

It should be noted that the College, organized as it is for British Colonials, has apparently made no effort to develop a Latin American

constituency. It is mainly free from control by the colonial authorities and is chartered by the Crown with a board of trustees and head office in London. The board is made up of various members appointed by the Colonial Office, one each by several of the British Universities, and several elected by members thus appointed.

The funds for the College come 40% from annual grants (reviewed at 10-year intervals) by the British Treasury, 40% from the Colonies using the services, and 20% from industrial and commercial concerns profiting from the program. The Principal did not mention a tuition charge, but we are of the opinion that the Institute is relatively expensive. One Latin American student estimated that his expenses for one year amounted to \$1,500. The students live in dormitories with private rooms and eat in a common dining room. The charge for board and room is two dollars per day.

No color-line is drawn. Blacks, Browns, and Whites live together. The present student body is made up of English, Malayans, Chinese, Negroes, and Latins.

The members of the Department of Agriculture Committee were of the opinion that after the inter-American character of the program planned had been explained to him, Principal Faulkner appreciated that his previous suggestion of/^{an} Anglo-American Institute might not be suitable. However, aside from the many resources of the Imperial College which the Institute will want to capitalize, Principal Faulkner has indicated a genuine interest in collaboration that should be recognized by appropriate action on the part of those responsible for the develop-

ment of the Inter-American Institute of Tropical Agriculture. It would, however, seem to be inadvisable to relate the proposed Institute too closely to an Institution the main purpose of which is to serve extra-hemisphere areas and interests.

We would further strongly recommend that in any special plans for the Caribbean Zone, the Imperial College at Trinidad should play an important role. Its position, personnel and equipment, and the outstanding work accomplished place the Institute in a unique position for service to that area if the scope of its influence can be broadened.

Antigua, Guatemala, 6 Nov. 1941

Mr R H Allee,
U S Dept of Agriculture,
Washington D C.

Dear Ralph:

Your letter of 28 October with copy of the report on proposed sites for the Interamerican Institute of Tropical Agriculture reached me yesterday. I feel that you have done a fine job in putting the report in concise form and I do not see that there is anything to be added. The only thing I might suggest would be reiteration on page 22 of the nature of the four factors used in evaluating the sites. These are fully explained on pages 2-3, but it might be a little easier for readers if you enumerated them briefly again, as for example:

1. Accessibility from interested countries.
2. Accessibility from nearest town of good size.
3. Suitability from standpoint of health and efficiency.
4. Suitability from the agricultural standpoint.

As you will note, this is a matter of very minor importance. In fact, I hope the report has already been passed upon by the Committee in the Pan American Union and a resolution approved to the effect that work be commenced at once.

Thanks for sending me copies of letters you have written several of our friends who took particularly good care of us on the trip. I have sent publications to some of these, as promised, as also Cinchona seeds to Dr Camargo, Ernesto Molestina, and one or two others. I am also following up several of our contacts in Costa Rica and Salvador in various ways.

Since you left, I have spent a week in Honduras working on our school project, but we are still negotiating with the government

for a site and it will probably be some weeks yet before we are able to go ahead. In the meantime, we are studying the general problem of buildings and I miss the friendly counsel of Mr. Boyd. When the site is secured and our building plans are ready in preliminary form, I understand I am to run up to Boston to talk them over with the Powers that Be. On that occasion - which I do not suppose will be until sometime early in 1942 - I shall run down to Washington to have a chat with you fellows if nothing more. With your experience in agricultural education there will be some matters on which I will ask your advice, if you will be good enough to give me the opportunity.

It is with regret that I report, for information of yourself and Mr. Boyd, that the Mexican Lemon crop is about to terminate itself, as we would put it in Spanish.

Muller is pushing ahead with work at the Chimaltenango school in fine fashion. Right now he is building a dairy barn, and a new laboratory.

Do keep me informed of progress on the Institute, and remember that I shall be glad to be of service in connection therewith if the opportunity offers.

With best regards, in which Mrs. Popenoe joins,

Sincerely yours

Antigua, Guatemala, 19 Nov 1941

Mr R H Allee,
U S Dept of Agriculture,
Washington D C

Dear Rafael:

Many thanks for yours of the 3rd with copy of the report covering Imperial College of Tropical Agriculture. I think you have done a fine job of setting for the arguments pro and con and vice versa - as they say in Jamaica. I feel about the matter just as you do: that the objectives of the Imperial College are so different from those of the proposed Institute it would not be satisfacory to combine the two, but at the same time there simply must very close cooperation between them. Probably we have more to gain by this than the British have.

Next Sunday I plan to leave for Tegucigalpa to start work on our own school - which the folks in Boston have decided to call the "Escuela Agricola Panamericana". We have purchased 1500 acres of land 35 kms from Tegucigalpa, one hour by auto over a fine road, with water for irrigation (of the farm, not the road). I hear that the jefes in Boston have appropriated a very handsome sum for buildings and equipment. We are going to want some advice from you on many aspects. I'll probably come up north in late winter or early spring to attend to this personally.

I have finished the article on Cinchona for "Agriculture in the Americas" but want to put a few finishing touches on it before sending it up, which will be soon.

Best regards to all the brethren and sistern.

Ever yours

Antigua, Guatemala, 2 January 1942

Mr R H Allee,
U S Dept of Agriculture,
Washington D C

Dear Ralph:

The purpose of the present is solely to express the hope that this finds you enjoying good health in union with your estimable family, but afterwards, please drop me a line and tell me the following:

1. Did my manuscript "The Story of Quinine" reach the office safely, and if so, when will it appear in print?

2. Did my expense account arrive safely? I dont ask when will it be paid, for I probably know as much about that as you do, which is precisely nil.

further ~~item~~: We leave for Honduras tomorrow and my address from now on will be Tela Railroad Co., Tegucigalpa, Honduras, C.A. Please advise your staff of secretaries.

We have been working on plans for our school buildings and now have only to find out if we are going to be able to get certain essential materials such as water pipe, sewer pipe, and electrical equipment from the States. Ojalá.

Helen and I wished that you and Condor Boyd were with us for Christmas. Lots of firecrackers, lots of Mexican lemons.

Please give my regards to Dr. Laguardia, Hon. Moore, Don Felipe and all the rest. I wish I could drop in on you for a few days.

Sincerely,

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF FOREIGN AGRICULTURAL RELATIONS
WASHINGTON, D. C.

AIR MAIL

December 2, 1941

Dr. Wilson Popenoe
Tela Railroad Company
La Lima, Honduras

Dear Doctor Popenoe:

The "Escuela Agrícola Panamericana" sounds like a fortunate name for your school in Honduras. It should serve to fill a need which will apparently be only indirectly served by the proposed Institute of Tropical Agriculture. I have harbored the hunch for some time that rural programs have been so wrapped up in the primary problems of supplying information and training personnel that they have failed to reach the groups that are most educable. We shall probably discover some day that there are certain strategic periods in the development of individuals during which they can profit most by the public provision of planned learning situations. My guess is that, given a limited amount of funds and human ability to apply toward desirable modifications of behaviour, there are two periods when the resources available are likely to achieve relatively great results; (1) during the period from birth (or somewhat before) to 5 or 6 years of age, when the essential character traits are being formed; (2) during the period from about 15 to 25 years of age when physiological development is becoming relatively less significant and the individual requires assistance in assuming social responsibilities--professional and otherwise.

The Honduras school, as I understand your plans, could develop into a demonstration of one means of reaching the older group. I am very much interested in following developments and will be ready to help out in any way you suggest.

The Ryerson committee has just met with some significant work accomplished. The report on the meeting will be out soon. I hear that several new offers of sites for the new Institute have come which may have to be considered before construction work can start.

The offer of the Lindo estate at Turrialba may be of considerable significance. I often wonder if we should not have made somewhat more definite plans for increasing the amount of land available to the proposed Institute. This estate would seem to offer a fairly good opportunity for expansion if part of it could be acquired at

2--Wilson Popenoe-December 2, 1941

a cost somewhat more reasonable than that now offered.

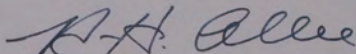
I have enjoyed reading through the note from Doctor Kevorkian. He seems to be following fairly closely the same pattern of difficulties that he was in during our visit. It is to be hoped that the presence of Doctor Holt and the other members of the Ecuadoran Economic Resources Mission will give Kevorkian some of the support he has so much needed. It is fortunate that the desires of the Ecuadorans to emphasize research on cacao problems has come to the front. My opinion all along has been that if the Ecuadoran Experiment Station can establish itself through a constructive contribution to the cacao problem, the other strategic commodities can be developed by the impetus so regained.

In answer to the request in your recent letter to Mr. Laguardia, Dr. Ross E. Moore is now a member of this Division. He is familiarizing himself with the program and making plans for an extended trip to visit areas of interest in Latin America and bring himself up-to-date on the situation down there. He is a valuable addition to our group.

As you requested, a subscription to "Agriculture in the Americas" is being sent to Pedro G. Cofiño in Antigua, Guatemala.

With best regards to yourself and Mrs. Popenoe,

Sincerely yours,



R. H. Allee
Agriculturist

21 Avenida Roosevelt, San Salvador
23 July 1957

Dr Ralph H Allee
Turrialba, Costa Rica.

Dear Ralph:

You of course know that the American Society for Horticultural Science meets in Pale Alto, California, toward the end of the coming month, and you of course also know that each Regional Group is supposed to be represented on the Executive Committee, to take part in making the big decisions. Now, the Chairman of our Caribbean group is not likely to be there, and in any case, the guy to take part in the making of the big decisions is our Secretary-Treasurer, none other than Ernest Casseres.

Can' you dig down into that Reserve Fund of yours and help make it possible for Ernest to go to Pale Alto? I suspect he is in a position similar to that of our old mason Arturo in Antigua, who rebuilt our house. He came to me one day and said, "Patrón, I am buying a house, and I find myself, unfortunately, somewhat lacking in material resources; could you by any chance help me out?" "Sure", I replied, "how much do you lack?" "Well", he replied, "the house is going to cost \$125, and I have saved \$3 toward that amount, but perhaps with \$100 from you I could stand off the sheriff."

But seriously, please help Ernest find some way to finance the trip to Pale Alto. Our Caribbean group has really made progress these past three years; we want to keep it up, we want to have recognition as an active element in the Society. We must not drop out of sight.

Ever yours,

Wilson Peñence

I am sure you were mighty sorry to learn of Bob Penclsten's death. But he has left his mark on tropical agriculture and 25 yrs from now everyone will be saying how right he was about tropical soils.

Antigua Guatemala, 10 Sept 1957

Dr Ralph H Allee, Director
Instituto Interamericano
Turrialba, Costa Rica.

Dear Ralph:

In connection with the program which has recently been set on foot by the Ministerio de Agricultura of El Salvador, "Mas Fruta y Mejor Fruta", we want to make a serious effort to find out whether or not we ~~can~~ there are better pineapples for local consumption than either of the two varieties which are now commonly grown in that country. Everyone who has been to Turrialba - and his name is Legion- talks about the fine pineapples of that town. Could you possibly help us by sending up, by air express, a hundred or two nice little ~~ratoons~~? They should be shipped to Dr Mario Lewy van Severen, Director, Centro Nacional de Aeronomia, Santa Tecla, and express charges can be collect. If there are charges for the ratoons, let me know and I will handle. Sorry I dont know how to spell ratoons - it really is retoños, I think you will know what I mean. Anyway, send them along and spell it slips if you prefer, but dont send slips, send something that will produce fruit in a year.

Anticipándole mis profundos agradecimientos,

Ever yours,

Wilson Popenoe
Director Emeritus

*File under
R. H. Allee*

14

ANEXO "A"
CTG/IV/Doc. #19
3/12/59

CUARTA REUNION CONSEJO TECNICO CONSULTIVO
Marzo 9-12, 1959
San José, Costa Rica

CUADRO GENERAL DE LOS EGRESOS PRESUPUESTADOS O ESTIMADOS
EN PROGRAMAS, PROYECTOS ESPECIALES, SERVICIO DE LA DEUDA Y ADMINISTRACION
PARA EL PERIODO FISCAL 1958-1959

		Porcentaje al presupuesto <u>del Instituto</u>
<u>Fondo General</u>		
Comité Administrativo	2,300	
Consejo Técnico Consultivo	2,000	
Oficina en Washington	1,800	
Oficina del Director	32,330	
Fitotecnia	65,415	
Zootecnia	54,300	
Recursos Renovables	8,435	
Economía y Bienestar Rural	38,451	
Biblioteca	18,120	
Servicio de Intercambio Científico	34,580	
Servicios Administrativos	75,450	
Oficina del Registrador	11,335	
Interés en Préstamo a Largo Plazo	4,400	
	<u>348,916</u>	20.64
<u>Operaciones Comerciales</u>		
Cremería	19,000	
Multígrafo y Fotocopia	10,400	
Comedor	42,730	
Finca	117,198	
	<u>189,328</u>	11.20
<u>Donativos y Fondos para Fines Especiales</u>		
Centro Interamericano de Cacao	78,942	
Centro Interamericano de Cacao - Resiembra	4,000	
Investigaciones Merck Sharp & Dhome International	250	
Oficina del Café de Costa Rica	1,350	
Publicaciones: Fundación W. K. Kellogg	32,980	
Rockefeller 52109 - Comunicaciones Científicas Agrí- colas	7,000	
Rockefeller 56196 - Zootecnia	10,000	
Rockefeller 57172 - Inv. Cooperativa en Horticultura	13,250	
	<u>147,772</u>	8.74
<u>Programas y Contratos</u>		
Programa de Información Popular	65,000	
Comisión de Energía Atómica (AEC)	111,000	
Administración Cooperativa Internacional (ICA)	331,959	
Cooperación Técnica - Proyecto 39 (TCP)	496,358	
	<u>1,004,317</u>	59.42
GRAN TOTAL	<u>1,690,333</u>	<u>100.00</u>

Antigua, Guatemala, 6 August 1959

Dr Ralph H Allee, Director,
Instituto Interamericano de Ciencias Agrícolas,
Turrialba, Costa Rica.

Dear Ralph:

With the assistance of Paul Standley, I am working up a brief note for publication on the present generation of Central American systematic or taxonomic botanists. So far, we only have in mind Jorge Leon and Antonio Molino of Zamorano, both of whom have studied in St Louis. Now will you tell me if you think there are other young men in this field who definitely are coming along, and will you give me the following information about Jorge Leon, for whom I have great admiration because I think he will contribute much to Central American botany:

His secondary education, his University education, and any academic degrees. Titles of published papers in the field of Central American taxonomic botany.

I don't have much time left, but along with Dr Merrill whose time has already run out, I would like to see a few more young men - and I mean Central Americans - get into this taxonomic field.

Sincerely,

Wilson Popenoe

Antigua, Guatemala, 6 August 1959

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Instituto Interamericano de Ciencias Agrícolas,
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Sincerely,

Wilson Popenoe

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES OF THE OAS
Turrialba, Costa Rica

September 15, 1959

I take pleasure in enclosing copy of the first issue of SYMPOSIA INTERAMERICANA, a new publication of this Institute issued by the Scientific Communications Service.

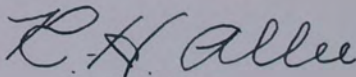
This first issue is dedicated to a discussion of the need for a new approach to tropical land use, centered around a paper prepared by Dr. Leslie R. Holdridge, chief ecologist and forester of this Institute. The second issue will be devoted to a discussion of the role of extension in agricultural development; Dr. Fernando del Río, our chief extensionist, is preparing the lead paper, to be published in Spanish.

The contents and characteristics of SYMPOSIA INTERAMERICANA are described in the cover.

Since circulation of this new publication will be limited to persons directly concerned with the diffusion, on an interdisciplinary basis, of basic ideas pertaining to the broad problems affecting the development of agriculture and rural life in the Americas, I would appreciate your returning to us the attached form with the names and mailing addresses of persons whom you think might be interested in receiving this publication regularly. There is no charge for it.

Also, I would appreciate your sending in to the moderator of SYMPOSIA INTERAMERICANA, Ing. Armando Samper, your suggestions concerning lead topics for coming issues as well as the names of the authorities proposed to handle the lead papers and the comments in each case.

Sincerely yours,



Ralph H. Allee,
Director

Encl.