REPORT ON THE

MEETINGS OF THE IICA ADMINISTRATIVE COMMITTEE OF THE

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

HELD IN WASHINGTON, D. C.

NOVEMBER 11-15, 1948

Pan American Union
Washington, D. C.

Gentlemen of the Board of Directors:

I have the honor to submit herewith the report of the Administrative Committee of the Institute to the Board of Directors on the results of the Committee's deliberations at the Pan American Union from November 11 to 15, 1948. During the meetings of the Administrative Committee, I had the pleasure of discussing fully the problems and aims of the Institute and will not attempt to repeat my statements in this letter of transmittal, since they appear in the text of the report. However, the Committee feels that the Institute needs the help and the support of those republics of the Western Hemisphere which have not as yet joined the organization. At this time, I wish to emphasize two most important points for consideration by the Board of Directors: First, the Institute has, in a relatively short period of time, developed into an exceedingly valuable asset; and second, its financial support from official sources is so limited that the fiscal situation is becoming increasingly precarious.

Let us review the assets which the American States have in their central agricultural research and educational organization. The Institute owns 5,500 acres (2,250 hectares) of land, 68 permanent buildings, a library, laboratory equipment, farm and transportation equipment, and farm animals which could not be replaced for less than two and a half million dollars. Of much greater potential value, however, is an accumulating body of information on the problems of agriculture and rural life.

Many of the findings of the Institute are technical in nature and useful mainly to the technical workers of the member countries. An increasing amount of material is being published on plant breeding, diseases and pests of plants and animals and such. Several current developments are new strains of crops, such as sorghums, cowpeas, and peanuts; an improved method of drying rice and corn in sacks and small bins; the diagnosis of and steps toward the control of several coffee diseases; and a method of rooting cacao cuttings adapted to use by the small farmer. Work is progressing on various phases of cacao and coffee culture, corn improvement, potatoes and vegetables, the factors involved in soil and water run-off, control of animal parasites, the grading up of cattle, animal nutrition, the economic and social problems of rural communities, and methods of extension.

Thirty-one technically trained workers are employed by the Institute. These are assisted by eleven graduate assistants and a group of skilled laborers. Fifty-three young men from thirteen countries are enrolled as students.

The second point we feel must be emphasized, however, is that out of an expenditure of $413,117.05 for the fiscal year 1947-48, only $169,904.79 was supplied by the American States. Of this amount $159,773.00 came from

the quota of the United States of America. The remainder of the funds used was derived from farm and related income ($78,305.28) and private grants ($192,500.00).

Private foundations, such as the American Cocoa Research Institute, concerned with the general advance of science or with given crops have shown their confidence in the Institute. It is believed that further support from such sources can be anticipated. Nevertheless, the permanent nucleus of research and training resources must be supported by public funds from the member countries if we are to maintain a continuous program at the service of the American States. Grant funds, although they must contribute broadly to the welfare of agriculture in the member countries, are practically always given for specific enterprises. Such endeavors as cooperative projects with national agricultural experiment stations, consultation services, and much of the education of specialists must be supported by quota funds. It should be borne in mind that, since much of the inevitable overhead is now taken care of, additional funds can be applied directly to solving problems and training students.

It is beyond the scope of the Administrative Committee to attempt to discern the reasons why the Institute is not receiving more financial support. We do believe that, since the quota rate of the Institute is extremely modest, no country would find payment difficult because of lack of funds even under conditions of dollar shortage. No doubt there are various reasons why certain countries have failed to ratify the Convention and others have failed to pay their quotas. It is our earnest hope that the members of the Board of Directors will be able to treat successfully with their respective countries on this urgent problem.

Respectfully submitted,

H. Harold Hume, Chairman,
Administrative Committee

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MEETINGS OF THE ADMINISTRATIVE COMMITTEE OF THE INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES HELD IN WASHINGTON, D. C.

NOVEMBER 11-15, 1948

The November 1948 meetings of the Administrative Committee were attended by the following:

Members of the Board of Directors (present at a special session with the Committee)

Luis Quintanilla, Ambassador Representative of Mexico on the Council of the Organization of American States
Félix Nieto del Río, Ambassador of Chile to the United States
Joaquín E. Salazar, Ambassador Representative of the Dominican Republic on the Council
José Maria Bello, Ambassador Representative of Brazil on the Council
Silvio Villegas, Ambassador Representative of Colombia on the Council
Octavio Vallarino, Ambassador of Panama to the United States
Enrique Kempff M., Alternate Representative of Bolivia on the Council
Enrique Ferrer Vieyra, Counselor of the Argentine Delegation
Ricardo Sarabasa, Alternate Representative of Cuba on the Council
Jules Domond, Commercial Attaché of the Haitian Embassy
John C. Dreier, Alternate Representative of the United States on the Council

Officials of the Organization of American States (present at a special session with the Committee)

Alberto Lleras, Secretary General
William Manger, Assistant Secretary General
Lowell Curtiss, Director of the Department of Administrative Services, and Treasurer of the Institute
Amos E. Taylor, Director of the Department of Economic and Social Affairs

Members of the Administrative Committee (present at all sessions)

H. Harold Hume, Provost, College of Agriculture, University of Florida, Gainesville, Florida (Chairman)
Robert E. Buchanan, Research Professor, Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa
Ralph H. Allee, Director of the Institute
José L. Colom, Secretary of the Institute

Guests Invited to Attend Certain Sessions in a Consultative Capacity
(present as indicated in the Minutes of the Meetings)

J. Lossing Buck, Agriculture Division, Food and Agriculture Organization of the United Nations, Washington, D. C.
J. D. B. Harrison, Forestry Division, Food and Agriculture Organization
Horace Belshaw, Division of Rural Welfare, Food and Agriculture Organization

Elizabeth H. Armstrong, Division of Dependent Area Affairs, Department of State (representing James F. Green, United States Member on the Working Committee of the Caribbean Commission)

Gordon P. Peyton, Secretary-Treasurer, American Cocoa Research Institute, Washington, D. C.
Leonard Schwarz, Research Director, American Cocoa Research Institute

H. V. Geib, Technical Collaboration Branch, Office of Foreign Agricultural Relations, United States Department of Agriculture

Calvert L. Dedrick, Coordinator of International Statistics, Bureau of the Census (representing Halbert L. Dunn, Secretary General of the Inter-American Statistical Institute)

Knowles A. Ryerson, Dean, College of Agriculture, University of California, Davis, California
H. A. Wadsworth, Dean, College of Agriculture, University of Hawaii, Honolulu, Hawaii

GENERAL TOPICS OF DISCUSSION AND CONCLUSIONS REACHED BY THE ADMINISTRATIVE COMMITTEE AT ITS NOVEMBER 1948 MEETINGS

QUOTAS AND MEMBERSHIP

Situation:

At the present time, the following ten countries have ratified the Convention of the Institute and contribute to the support of the organization: Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, the United States, and Venezuela. However, on June 30, 1948 these ten countries were in arrears in their quota payments by $35,333.50, and by October 12, 1948 the arrears amounted to $72,249.85.

Besides the above-mentioned countries, the following seven have signed the treaty but have not ratified as yet: Bolivia, Chile, Colombia, Cuba, Ecuador, and Uruguay. Of the twenty-one American Republics, there are four that have not taken definite action with regard to the Convention, namely, Brazil, Haiti, Paraguay and Peru. The Convention has been ratified by the Argentine Sentate, but it has not been approved by the Chamber of Deputies.

The reports we have received from Port-au-Prince indicate that Haiti is taking the necessary steps to sign and ratify the Convention, and this should take place in the very near future.

Colombia signed the Convention on July 23, 1948, and at the present time the Colombian Congress is taking the necessary steps to ratify the treaty.

Agreed:

1. That accounts of quotas due be submitted to each member country early in July each year, or when each country prepares its budget, indicating the amount owed and supply information on activities of the Institute required by respective budget authorities. It is suggested that these accounts be prepared by the Treasurer, the attachments be prepared by the Institute, and that they be submitted in the manner most consistent with the policy of the American States.

2. That the Organization of American States be requested to consider the feasibility of an active program to bring about further ratifications and to collect quotas that are in arrears.

3. That steps be taken to determine if the Philippines might become associated with the Institute in some appropriate manner.

4. That the Canadian Ambassador or other appropriate person in Washington be sounded out as to means by which at least some semi-official affiliation might be arranged with Canada.

5. That further efforts be made to obtain grants. An office in the Pan American Union for this purpose would seem desirable.

6. That we emphasize increasing the effectiveness of publications, bulletins, and annual reports and that an attempt be made to collaborate with the Division of Agriculture and Conservation of the Pan American Union and with the American Society of Agricultural Sciences in publishing a journal.

BUDGETS

Situation:

The budget for 1948-49 has been somewhat improved. However, we still do not give the members of the Board of Directors and others a sufficiently clear picture of our expenditure plans.

Agreed:

1. The the 1949-50 budget be prepared in January 1949 for discussion at the March meeting of the Administrative Committee and for distribution in final form to Board members not later than April 30. That the schedule adopted by the Organization of American States be followed in the future.

2. That in addition to the status of the program as included in the current budget, a complete personnel list, by positions rather than names, be submitted which will show responsibilities of each position and salary.

3. That transfers between budget items to the extent of twenty-five percent of any item be made if necessary to promote the efficiency of the program, and that transfers above this amount be passed on by the Administrative Committee.

4. That a budget specialist of the Pan American Union make a study of the budget in Turrialba as soon as convenient to assist in its improvement and to assure that necessary correspondence is achieved with methods adopted by the Organization of American States.

5. That $7,500 of the cane income which should have accrued during 1947-48 but which was received in July and August of 1948-49 be allocated to the construction of an additional cottage to help relieve the critical housing shortage.

PERSONNEL

Situation:

The Cocoa Research Institute grant provides for two additional men.

Agreed:

1. That Dr. J. Harvey McLaughlin be employed as pathologist.

2. That Dr. Leslie Holdridge be employed as general field agent with member countries.

Brief accounts of the experience and background of Dr. McLaughlin and Dr. Holdridge follow:

Dr. J. Harvey McLaughlin

Date and Place of Birth - April 25, 1915, Idabel, Oklahoma

Marital Status - Married, four children

Education - B. S. - Oklahoma A & M College, 1938
M. S. - Oklahoma A & M College, 1940
Ph.D. - Iowa State College, 1946 (1940-42 & 1946)

Languages - Fair reading knowledge of German, French, and Spanish

Experience - 1936 - Summer; National Park Service, United States Department of Interior. Making vegetative type maps of state parks in southwestern United States

1938 - 8 months; Bureau of Agricultural Economics, United States Department of Agriculture. Range Examiner in dust bowl area of Texas, Oklahoma, Colorado, and Kansas. Correlating vegetative cover with soil type,

1939 - 5 months; High school teacher in public schools of Kennyville, Oklahoma. Teachin science,

1942-1945 - Plant Pathologist, Oklahoma A & M College, Agricultural Experiment Station, Stillwater, Oklahoma. Duties: Research on chemical seed treatment of vegetables and corn; on root rot diseases of cereal crops including corn and sorghum.

1947-1948 - Plant Pathologist, Oklahoma A & M College. Duties as immediately above plus teaching of senior and graduate courses in plant pathology.

Dr. Leslie R. Holdridge

Field of Work - Tropical Forestry

Present Position - Head of Cinchona Research at Finca El Naranjo, Guatemala

Date and Place of Birth - Approximately 40 years of age; born in Ledyard, Connecticut

Marital Status - Married; one child; three children by previous marriage

Education - Graduated in Forestry from the University of Maine, 1931. Registered as a graduate student at University of Michigan - Botany Department and assisted in teaching taxonomy - 1946, completing doctoral requirements around February 1947.

Languages - Speaks Spanish fluently; also speaks French; reads German and Portuguese

Experience - July 1934-September 1941 - United States Forest Service, Puerto Rico. Assignments on the Caribbean National Forest comprised survey work but were chiefly on reforestation.

1938 - Southern Experiment Station, Puerto - Research job on silvicultural problems.

September 1941 - Haiti, Manager of the Forestry, S/H.A.D.A. The administration and management of approximately 150,000 acres of pine forest.

October 1942-July 1943 - United States Forest Service. Head of survey parties for cinchona in Colombia and timber in Ecuador; rating at that period P-6.

Publications - Initiated and edited the first volume of the Caribbean Forester and prepared two booklets on the trees of Puerto Rico published by the Stations.

Field of Specialization - Ecology with special work on plant geography and soils. Correlation of tropical forest types with climatic areas.

Situation:

The Animal Industry Department has carried its program of providing facilities and initiating research to date with one senior staff member. The equipment and animals now available or to be provided during this year will demand at least an additional scientist.

Agreed:

That an attempt be made to arrange with one of the three candidates now under consideration or with any others who may be located in the near future for employment as of July 1, 1949, and that such adjustments as are necessary be made to permit this in the 1948-49 budget.

Situation:

Mr. Joseph Fennell has resigned effective December 31, 1948. There is a fair amount of plant breeding talent at the Institute. It is also believed that Solomon Horowitz will be obtained as consulting geneticist to reside in Turrialba two or three months per year by arrangement with the Ministry of Agriculture and the University of Venezuela.

Agreed:

That Mr. Fennell's position be filled by an agronomist with competence in soils sometime between January 1 and June 30, 1949, or as soon thereafter as possible.

Situation:

The extension training program originally indluded a trained assistant for Dr. D. Spencer Hatch to assist with the teaching of students accepted under the terms of the American International Association grant and others interested in extension and the improvement of rural education. This position was not filled because the unavailability of dairy equipment has held up the chief money-earning enterprise of the Pilot Farm. The equipment is now being received.

Agreed:

That an agriculturally trained, Spanish-speaking staff member with experience in vocational teaching be employed on July 1, 1949 if a competent individual can be located.

Agreed:

That efforts be made to continue the offering of facilities to visiting scientists in spite of the present limited space at the Institute.

HOUSING

Situation:

At least two, and probably three, new positions which will be budgeted for during 1948-49 will require additional residences. We have requests at

present from several able graduate students who had to be turned down because of lack of residence facilities for families. The cacao position and several of the fellowship funds can pay annual amounts sufficient to amortize the cost of housing. Indications are that a loan can be obtained from the National Bank of Costa Rica at six percent amortizable over five years.

Agreed:

That a loan be obtained amounting to $20,000 to construct one house and four cottages to be amortized from rent plus other income.

NEW ADMINISTRATIVE COMMITTEE MEMBERS

Situation:

Since Dr. Mariano Montealegre has been unable to attend the past two meetings, we have met with two members. Also it seems likely that Colombia and Argentina will have ratified the convention within the next six months.

Agreed:

That strenuous efforts be made to have two committee members, one from Mexico and one from Colombia or Argentina, appointed before the March 1949 meeting.

COOPERATIVE ENTERPRISES

Conservation

Situation:

The Inter-American Conference on Conservation of Renewable Natural Resources in Resolution No. 1 recommends that the Pan American Union, the Food and Agriculture Organization, and the Institute create means of carrying out the various functions indicated with the aid of an advisory committee. The report in general constitutes a practical design for the emphasis which should be given to this wise use of renewable resources in the inter-American agricultural and rural life program to which this Institute is dedicated. Most of our research, education, and extension projects underway or to be developed will to one extent or another contribute to the fulfilling of the Denver recommendations.

Agreed:

1. That a member of the Institute staff be appointed chairman of the Institute Committee on Development and Conservation and to serve with

representatives of the the other organizations concerned and the Advisory Committee in bringing about the action.

2. That the Institute make every effort possible within its budget provisions and attempt to obtain additional financial support for research and training along the lines of the Denver recommendations. Also that steps be taken to develop cooperative projects on land classification, soil and water run-off, the strengthening of college curricula, etc., with member countries.

3. That to the above ends there be considered by the interested organizations the possibility of establishing an appropriate center from which to attack these problems in equatorial America, and, that at an appropriate time the Institute facilities be offered for this purpose.

4. That the Director serve as the Institute representative on the Executive Committee on Conservation proposed by the Denver Conference, and that Manuel Elgueta serve as alternate.

Joint Operation of an Extension School by the Institute and the Food and Agriculture Organization

Situation:

We have been discussing a basis for an agreement with the Food and Agriculture Organization for some months. They now propose that, as the first item of joint action, we sponsor jointly and "Extension School". This would be a workshop type of conference on programs aimed at reaching the farmer and the rural community.

Agreed:

That we cooperate with the Food and Agriculture Organization by offering to have the conference staged at Turrialba.

Meeting of Those Engaged in Research and Education in Middle America

Situation:

There has been considerable demand for a meeting of those engaged in Research and Education in the Middle America area.

Agreed:

That attempts be made to call such a meeting during the spring of 1949 if funds can be made available.

Coffee Program

Situation:

A considerable increase in the amount of effort applied to coffee research is needed. To assist in this increase, the Institute's facilities should be expanded beyond those which can be provided by income from the coffee farm allocations from the quotas.

Agreed:

That a joint program be considered wherein other agencies of the American system, the producers' associations, and commercial concerns combine to place coffee research and training and the promotion of improvements on a more adequate footing.

Subsequent Action:

Since the Administrative Committee meetings, the Special Coffee Commission of the Inter-American Economic and Social Council has been studying the development of an Inter-American Coffee Improvement Program. A Special Committee, consisting of the Representatives of Brazil, Colombia, Ecuador and El Salvador, has been appointed by the Chairman of the Commission to cooperate with officials of the Institute in working out the details of the program and particularly the means of financing it.

The text of the agreement now under consideration, which has been modified only slightly from the original program considered by the Administrative Committee of the Institute, is as follows:

Inter-American Coffee Improvement Program

The Special Coffee Commission of the Inter-American Economic and Social Council of the Pan American Union is studying the possibilities of launching a research and training program for coffee improvement in the Americas. At the present time the Inter-American Institute of Agricultural Sciences is developing a coffee program as a part of its service to the American Republics. Research is also underway in several of the member countries. However, a much greater and more concerted effort is required if coffee is to continue to play its present role in supporting the economies of the producing countries and to furnish adequate supplies to world markets at prices which will promote consumption.

Situation:

The potential market is expanding, yet all signs point toward lower production per unit area. Diseases and pests are accumulating. Labor costs are increasing while traditional methods of cultivation and market pre-

paration remain unchanged. Unless the crop can receive the benefits which other crops have received from research, it will suffer an increasing disadvantage. Yet, it is apparent that a small percentage of the coffee trees produce a major portion of the crop. Much of this variation is genetic. Hence, selection and propagation of high producing trees can greatly increase yields in a given area without a corresponding increase in production costs. Improved cultural methods will augment the advantage of superior planting material. Therefore, a considerable increase in the rate of effort applied to coffee research is indicated. To assist in this increase, the Institute facilities should be expanded beyond those which can be provided by coffee income plus allocations from the quotas.

Objectives:

The program objective is to apply science to the coffee producing industry in the hemisphere in order to bring about a more economical production of high quality coffee for the benefit of both producers and consumers.

Procedure:

A. In order to develop more efficiently the proposed inter-American coffee program, the Inter-American Institute of Agricultural Sciences may establish within its Department of Plant Industry an Inter-American Coffee Center which will devote its efforts to carrying out the provisions and objectives of the coffee program, by providing consultation to the countries concerned, training more coffee technicians, and conducting a research program.

B. The Special Coffee Commission of the Inter-American Economic and Social Council may serve as the policy making body entrusted with the drafting of a coffee improvement program to be submitted to the Council for approval. It may make such recommendations to the Institute as it may see fit to discharge the program as efficiently as possible. It will also assist the Institute in securing the cooperation of those research and technical agencies of the producing and consuming countries as it may consider advisable. It may cooperate in securing the necessary financial assistance to carry out the program of work. The Commission may assist the Institute in studying the research projects now under way in some of the producing countries in order to avoid duplication of efforts. It may also aid the Institute in coordinating the research work in order to make it more effective.

C. The Special Coffee Commission may establish a Technical Coffee Committee which would serve in an advisory capacity to the Commission and to the other agencies participating in the inter-American coffee program, particularly the Inter-American Institute of Agricultural Sciences. The

Technical Coffee Committee may consist of:

1. One representative from each country having direct interest in coffee,

2. Representatives from national coffee producers' associations,

3. Representatives from coffee consumers' associations,

4. One representative from the Pan American Union,

5. One representative from the Special Coffee Commission of the Inter-American Economic and Social Council, and

6. One representative from the Inter-American Institute of Agricultural Sciences.

Specialists in the cultivation, processing, and marketing of coffee, as well as specialists in the disease and pests affecting the plant, might also be included.

Annual Budget Estimate:

Personnel		
Horticulturist (salary & expenses)		$ 6,000
Bio-chemist (salary & expenses)		6,000
Pathologist	" "	7,500 *
Economist	" "	6,000
Extension man	" "	6,000
Associates (2)		8,000
Assistant		2,500 *
Part time of Geneticist, Horticulturist, Economist, Soilsman, Botanist, Engineer		13,500 *
Fellows (5) at $1800 (14 months)		9,000
Supplies and Services		7,500
Special Equipment		4,000
Travel of Staff and Cooperators		5,000
Administrative Overhead		5,750
		$86,750
	Available items *	23,500
	Required	$63,250

The Institute laboratories, its 300 acre coffee plantation, library, and other facilities available have not been included in the above estimates.

Outline of Coffee Work

I. The hemisphere is in greatest need right now of production research. That is, we need investigations planned to solve the problems which the grower finds are limiting. This will have to involve a combination of controlled studies at experiment stations and widespread trials on plantations under varying conditions of soil, altitude, rainfall, and type of management. Some of this work will begin to pay off in one to three years. It involves:

A. Plant improvement

1) Selection
2) Propagation
3) Effects on costs and returns
4) Management adjustments involved
5) Extension

B. Cultural practices

1) Spacing
2) Pruning
3) Shade
4) Soil management
5) Pest and disease control
6) Management adjustments including diversification and financing
7) Effects on costs and returns
8) Extension and development

C. Market preparation

II. A series of basic studies beyond those already completed on the coffee plant and its culture is necessary if maximum gains are to be made throughout the future. These need not occupy more than a minor portion of the manpower and facilities available. They will pay big dividends in the long run. The should include:

1) Soil-plant relationships
2) Flowering and fruiting
3) Collection of species and varieties
4) Inter-specific breeding
5) Soil and water run-off
6) Pathological and entomological studies
7) Experimental design
8) Supply and demand relationships
9) Land use and classification
10) Processing and marketing
11) Extension and training methods

Cooperative Project in Applied Social Science between the Inter-American Institute of Agricultural Sciences and Michigan State College

Situation:

One the basis of an agreement between Michigan State College and the Institute previously accepted by the Administrative Committee, Michigan State College agreed to supply fellowships for study at Michigan State College and consultation up to one half the time of Dr. Charles P. Loomis, Head of its Department of Rural Sociology and Anthropology, on foreign projects. The Institute agreed to supply travel and maintenance for Dr. Loomis and graduate assistants while working on Institute projects.

Reed Powell, M.S., Michigan State College, has been serving as sociologist on the Community Study at Turrialba. Dr. Loomis has made one trip to Turrialba and two trips to Washington, D. C. for the Institute. Ing. Francisco Gómez, graduate student from Colombia at the Institute, is at Michigan State enrolled in economics. Michigan State College now expects to be able to make an additional fellowship available so as to enroll a sociologist from a Latin American country for basic work in social sciences connected with the Community Study.

Agreed:

1. That an attempt be made to initiate advance training in the applied sociological aspects of institutional management involving at least one graduate assistant from Turrialba to be enrolled for this basic training at Michigan State College.

2. That in addition to charting leadership in relation to extension programs and the many other factors included in the data gathered to date, survival and replacement data should be concentrated on to assist in describing the relationship between population pressure and renewable resources. Cooperation of others should be arranged to the end of developing a valid and reliable definition of this situation in various countries.

3. That the knowledge, attitudes, and opinions of the people toward the Institute programs be studied as bench marks and guidance for the orientation of these programs.

[illegible]

[illegible]

[illegible]

[illegible]

MINUTES OF THE

ADMINISTRATIVE COMMITTEE MEETINGS

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

November 11-15, 1948

FIRST SESSION

The Administrative Committee of the Inter-American Institute of Agricultural Sciences opened its fall sessions at 2:30 P.M. on Thursday, November 11 with the following in attendance:

H. Harold Hume, Provost, College of Agriculture, University of Florida, Gainesville, Florida (Chairman)
Robert E. Buchanan, Research Professor, Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa

Ralph H. Allee, Director of the Institute
J. L. Colom, Secretary of the Institute

Gordon P. Peyton, Secretary-Treasurer, American Cocoa Research Institute, Washington, D. C.
Leonard Schwarz, Research Director, American Cocoa Research Institute, Washington, D. C.
Knowles A. Ryerson, Dean, College of Agriculture, University of California, Davis, California
H. A. Wadsworth, Dean, College of Agriculture, University of Hawaii, Honolulu, Hawaii

Since Mr. Peyton and Dr. Schwarz were present, it was thought best to take up the matters pertaining to the Cacao Program first.

Status of Cacao Program

Dr. Allee stated that the Institute is now making a thorough review of all its projects in order to cut out those which are no longer useful and promote cooperation between the various departments on the respective projects. Of 128 projects under consideration, these have been trimmed down to fifty-two. Some of the main ones have been incorporated into others and some have been dropped. He then proceeded to give a brief description of the Cacao Project which was started in January of this year although it had been discussed since the spring of 1947 with the Administrative Committee and with Dr. Schwarz. George Bowman

took over the project in January 1948 and has been the only full-time staff member on the project although others have put part time on it, particularly Dr. Wellman and Dr. Newhall. For most of this period Bowman has had eight graduate assistants, mostly Latin Americans who will return to their cacao programs in their respective countries upon completion of their work in Turrialba. He now has fourteen men in this group, including four advanced students who are working for their Ph.D. degrees and serving as graduate assistants. The teaching program has occupied a great proportion of time. The first effort has been to train young cacao specialists. All of them have the equivalent of a B. A. degree and have had some experience on cacao or associated crops. Bowman doesn't assume anything with them; all start to learn the "personality" of the cacao plant. Each student has two groups of ten trees, each of which is handled in a different way; that is, one is pruned, another is left alone, another is fertilized completely, still another is given all the minor elements, etc., and the results are studied. Besides being a training medium, the Cacao Center will develop a basis for experimental projects. To date little experimental work has been done on cacao anywhere, although the botany, cytology, and propagation of the plant have been studied quite thoroughly, particularly in Trinidad. Work on pruning, shade management, and other factors affecting cacao production is almost in its infancy. The preliminary work done this year will be good orientation for the research projects to come.

Dr. Allee declared that he had two proposals to bring up on the Cacao Project, but he thought Dr. Schwarz might like to give a few of the results of the Conference on Cacao which he had attended in London.

International Cocoa Meeting Held in London--Dr. Leonard Schwarz

Dr. Schwarz started by saying that the cocoa trade is enormously pleased with the progress made at Turrialba by the Cacao Center. It has been, in a sense, almost spectacular. The effects are already manifested. Just about a month ago he attended an International Cocoa Meeting in London and presented a paper which, in a sense, outlined the work going on in Turrialba. I attempted, he said, to show what the cacao project is doing in the Western Hemisphere. Until a year ago cacao from British sources was relied upon almost entirely, and these trees were threatened by disease. Since that time, some work has been done on the diseases, but the government had to stop its program of cutting out the swollen shoot infested trees because of disturbances among the natives who complained at losing their trees. The number of diseased trees is in the neighborhood of 45 million. The output before World War II was 300,000 tons per year. Last year it was 200,000 tons, and it is now quite questionable as to whether or not some 50,000 tons will survive. It looks like an additional 50,000 tons will be killed off in the Gold Coast.

Dr. Schwarz said he injected into this sad picture what we are trying to do in the Western Hemisphere, and it was quite a shock to the Conference as a whole. He pointed out that Turrialba is a going concern and is really

doing something, issuing a Cacao Information Bulletin monthly and advising the American Republics on matters concerning cacao programs and cacao production. Harvard University, through the Atkins Gardens in Cuba, is establishing a germ plasm bank for cacao and developing a quarantine station. A Turrialba trained worker, he said, is also directing cacao work in Liberia. The fact that Turrialba is a going concern, he emphasized, and is really doing active things created quite a stir. Dr. Schwarz was asked at the Conference whether this Turrialba project would be a closed concern or whether people would be invited to attend its conferences. He assured them that they could indeed take part in its technical discussions. The work done in Turrialba, he said, has had a terrific effect, and he was glad to go to the Conference with a real program.

Dr. Wadsworth inquired as to whether swollen shoot is transferred by the mealy bug. Dr. Schwarz replied in the affirmative and indicated that although some of them are not lethal, others are killers within a year. The British Government's method of control was to cut out all the infected trees, but the Africans felt that there must be another way rather than cutting out the trees. This was the reason for sending the British Commission down there. He declared again his belief that the work in Turrialba will pay magnificent dividends to this entire region.

Limitations on Cacao Production in the Western Hemisphere

Dr. Hume asked whether or not the Institute had arrived at any understanding as to what are the limitations on cacao production in the Western Hemisphere as concerns land conditions, disease factors, etc. Mr. Allee replied that Mr. Robert Fowler's study pretty well covers the situation and will be published by the Institute in Spanish. In Ecuador it now takes eight trees to grow one pound of cocoa due to disease. There is no limitation as to land in the Western Hemisphere. It is estimated that there are a good 100,000 acres of cacao land in Costa Rica--including land from which bananas have been driven by the Panama disease. Honduras is said to be a large potential producer of cacao, and Nicaragua has a lot of good cacao area, especially the Escondido Valley. There are thousands of acres of land, but the big limitation is personnel. After some search, the Institute has finally found two men to work on cacao, neither of which has had any actual experience with the crop. The Institute wanted a man who could be an assistant to Bowman and extend his hand with contacts in the member countries. But there are only three good cacao men in the Western Hemisphere--Bowman, Fowler in Ecuador, and Pound in Trinidad. Fowler and Pound were not available. The Institute has felt, therefore, that its big job was to train cacao technicians for other countries and at the same time carry out research work. It now has 100 acres in cacao, and is getting 200 pounds of cocoa per acre.

Cacao Work of the Imperial College of Tropical Agriculture in Trinidad

Mr. Colom mentioned that when discussions on cacao come up at the Pan American Union, mention is made of what is taking place at Trinidad, and he

therefore asked Dr. Schwarz to explain what is being done there.

Dr. Schwarz replied that when Pound did his good work he was connected with the Imperial College of Tropical Agriculture in Trinidad. Since he has gone with the Department of Agriculture he has been specializing in vegetable crops like lettuce and tomatoes. The work on cacao, he said, has suffered since Pound and Cheesman are no longer working on it. However, he said, Dr. Page, the new headmaster at the College, is a very fine man and he believes the work may pick up again. The College has done a lot of work on developing high-yielding clones of cacao. Some of the better clones yield at the rate of one thousand pounds per acre. When they mature more, he estimated, they may yield up to 1500 per acre. In Trinidad there are something like seven acres of propagating bins for the propagation of cuttings. These are passed along to farmers at the rate of half a million per year. The program there is rather ambitious, and farmers who wish to rehabilitate their plantings can get $300 an acre to rehabilitate ten percent of their orchards. The sparkplug of this school, however, seems to have disappeared, and Dr. Schwarz believes the momentum has been taken up at Turrialba. Trinidad has a virus disease that affects cacao, but at the present time it is not a killer.

Survey of Cacao in the Western Hemisphere

Dr. Schwarz suggested that it might be useful to take a look at the cacao work in the Western Hemisphere before anything extensive is done to find out what way we are heading and what the limiting factors are. We have had some correspondence with the Brooklyn Botanical Garden on this matter, and it might be a good idea to have someone from there take a look at the cacao resources in the Hemisphere.

Dr. Allee suggested that the Institute would like to have one or two competent men trained on viruses, like Black or Wellman, look at the areas which are more or less suspicious of having virus. The Valley of the Cauca in Colombia apparently has some sort of virus, and the Amazon Valley may have some swollen sheet. It would be a good idea to check up on these suspicious situations once a year. It was also suggested that Dr. George S. Avery, Director of the Brooklyn Botanical Garden, had mentioned that one of the best thinge he could do for the Institute would be to train a man under Black in viruses.

Cacao Scholarships

Dr. Schwarz agreed that it would be a very sound idea to have someone go up and study with Black. Then he added that up to the present time some of the scholarships set up for Turrialba have not been taken up, and the Cocoa people have wondered if they were attractive enough or whether something could be done to increase them. One of these might be used for a man to study in Brooklyn, but his cost of living there would require more than the scholarship would pay.

Dr. Allee replied that all the scholarships were not taken, not because they were not attractive enough, but because the Institute has not been able to get competent men for them. However, they now have a larger group. Mr. Colom agreed that it is very hard to find students and very few of them have studied cacao technically. Most of these few are married men with families to take care of. Dr. Allee explained that most of the students at the Institute have families, and their governments are supporting the families for them while they are in Turrialba. The Institute has tried to get as many Latin American students as possible, but has put no requirements on them except that they have the necessary background. For the first group of four cacao students, they will take only men of outstanding abilities, and there is no requirement made that they continue to work with cacao when their studies are finished. (Maintenance, tuition, fees and $50.00 a month are provided.) The second group of eight students is supposed to continue working with cacao in their own countries for at least one year after completion of their work at the Institute. (Maintenance, tuition, fees, and $30.00 a month are provided.) No difficulty is anticipated in filling this group; in fact, it is practically filled now. The third group consists of eight "técnicos" who have less training. (Maintenance, tuition, fees, and $15.00 a month are provided.) There are several in this group now doing fine work, but it is expected that the number will diminish since they really should be trained in their own countries. It may be dispensed with entirely later on. The forecasts are that all twenty fellowships will be filled between now and the end of this next quarter, approximately in April. Pedrito Silva, he said, may come from Brazil, and Mr. Colom added that Mr. Barbossa is also interested in one of the fellowships. Dr. Schwarz said he had talked to the Dean at the University of Wisconsin about good material for Turrialba, and the Dean had indicated that most of the graduate students are ex-G.I.'s and not interested in going outside the United States now.

Dr. Wadsworth inquired as to whether there is any way young pathologists and soilsmen can work at Turrialba toward their doctorates, and Dr. Allee explained that we have two men doing just this. In some cases, institutions in this country are willing to give a certain amount of residence credit to such students, and right now a man from Florida, Mr. Neel, is working at the Institute on his advanced degree. Dr. Allee said the Liberians would like to send five students to the Institute to work on cacao, but he has tried to convince them two would be enough at present. The Institute trained one last year, and it is the policy of the organization to work cooperatively with institutions in other parts of the world.

Relationship with the Pacific Area

Dr. Allee indicated that it might be advantageous to offer one fellowship to the Philippine Republic as an interesting piece of cooperation with an area outside of this Hemisphere. The Republic might be glad to pay the transportation of such a student to and from the Institute since it has already raised the question as to whether or not it might have some informal

affiliation with the Institute. We have felt all along, he said, that there might be some closer relationship between the Pan American area and the Pan Pacific area. Dr. Wadsworth thought this a good idea, and Dr. Schwarz stated that he believes the Philippines are looking around very seriously for another crop, and cacao would be very suitable there since they have plenty of land and enough rainfall. The area in the East has never developed a great deal as a cacao growing area, but cacao might be very desirable in the Philippines and might even step up the tempo of life in some of the islands of Oceania.

Dr. Wadsworth pointed out that one of the great problems in that area is food. It is a very serious problem, and one of the principal things that must be done is build the people up to self subsistence before thinking about their exporting much. The islands are scattered over such a large area, and transportation is a tremendous problem. He therefore would play down the possibilities of growing cacao commercially on these islands for many years until the people can get on a subsistence basis. However, he thought it might be grown in the Philippines on this basis and asked Dr. Schwarz about the ecological requirements for the crop there and if it would grow almost anywhere in the tropics.

Dr. Schwarz replied that it grown between 20 degrees north and 20 degrees south of the equator and must have 60 inches of rainfall a year. However, it is not too sensitive a plant, though the soil does affect the output. He even indicated, in reply to a question from Dr. Wadsworth, that there is some irrigated cacao, although this is quite expensive.

Mr. Colom stated that, although the Institute was established to promote the agricultural sciences in the Western Hemisphere, we have felt that this is a little selfish and are not now making such strictly regional limitations.

Appointment of Two New Staff Members

Dr. Allee at this point discussed the two new appointments made by the Institute--Dr. J. Harvey McLaughlin, employed as a pathologist for the Cacao Center, and Dr. Leslie Holdridge, employed as general field agent with member countries. Neither of these has had any experience on cacao, but both are well trained and promising men. McLaughlin, a young man of thirty-four, took his studies at Iowa State College and was highly recommended for the persistence with which he carries through his projects. He has had some vocational agricultural training and has served as secretary to one of the committees of the Phytopathological Society. Holdridge, forty years old, has been Director of Research for Merck and Company in Guatemala for the last year and a half. He was formerly at the Río Piedras Station in Puerto Rico and developed the logging industry in the pine forests of Haiti. He did research on strategic materials during the war. Dr. Buchanan moved that these two appointments be approved, and such approval was given.

Cacao Disease Investigations

Dr. Allee suggested that the Institute proceed with some cacao disease investigations and stated that it had recommended that the man to do this work should have some familiarity with swollen shoot in its native habitat. Dr. Schwarz indicated that some of the forest trees in Africa are also subject to this virus disease. He first saw it there in 1936.

Dr. Wadsworth remarked that his work with pineapples affected by the mealy bug has shown that one system of control is by geometrical planting, that is spraying a barrier and keeping the main crop protected. He wondered if this system might not be applied to cacao. Dr. Schwarz said that spraying has been tried, but the scarcity of water in some places is a serious problem to spraying on the small peasant holdings which are often only an acre and a half in size. Dr. Ryerson suggested biological control of the mealy bug, and Mr. Colom said that some work has been done in Puerto Rico on this. Dr. Schwarz indicated that so far this has not been very successful.

Dr. Hume said he supposed that the approach against the disease conditions is the most important one in connection with the cacao crop and suggested that with modern transportation it shouldn't take too long to cover the focal areas. Dr. Allee indicated that in most of the regions the problem of getting into the areas is not too difficult.

Dr. Hume then inquired about the cacao plantings of cacao at the Institute. Dr. Allee indicated that the plantings on the United Fruit Company property on the West Coast are going right ahead. One thousand acres are being sprayed, and there is some rehabilitation work being carried on in the cacao grove. "Pajarito" (bird vine), a parasite, is quite a problem, though, and the only solution is to prune it away.

Attitude of the American Cocoa Research Institute twoard the Institute's Cacao Work

When asked to say a few words, Mr. Peyton added that the Chocolate Association and the American Cocoa Research Institute appreciate very much the cooperation received from Mr. Colom and Dr. Allee. The contributors to the project are very well pleased, he said. Dr. Hume hoped they might be even ~~better~~ pleased in the future and stated that it is very fine that in this early stage of the project, the cocoa people are convinced that we have the correct approach. Mr. Peyton added that, because the cocoa people are a hard-boiled group of businessmen, their approval of the project at this stage means more than normal approval, and Dr. Allee also agreed that this is unusual in a group of men who are mainly interested in buying cocoa. Dr. Schwarz stated that, with the exception of General Foods, he doubted that any of the chocolate companies are doing much research.

Proposed Cacao Pilot Farm

Dr. Schwarz and Mr. Peyton departed from the group, and Dr. Allee proceeded to discuss the proposed Cacao Pilot Farm. He gave first a brief history of the Cacao Center. He wanted, he said, an area in the lowlands and looked over a lot of property. The United Fruit Company gave us 100 acres of land producing cacao. Surrounding this is a rather large property owned by one man who is willing to sell it. We have submitted to the American Cocoa Research Institute a proposition that they may wish to purchase the property and use it as a cacao pilot plantation. If they should agree to bestow the property on us, it would support our whole program. It has several thousand acres of cacao now and the whole area includes nine thousand acres of land. The land planted to cacao produces perhaps 100 pounds to the acre and the trees vary from 15 to 30 years of age. It has two cacao cleaning and drying plants with hydroelectric plants and two big residences. The Cacao Institute is very much interested but hasn't found any place to get the $300,000 and feels that this is a lot money.

After this brief description of the situation, the matter was discussed considerably. Dr. Hume said the Institute would need some vacant land suitable for the growing not only of cacao but of other crops. Mr. Colom injected the idea that we are now getting a little concerned about how many grants we can feasibly accept, and Dr. Hume agreed that we must not get topheavy with them. However, it was considered that land is needed for testing, and a small planting should be made each year. Mr. Colom stated that much of the land at Turrialba is rocky and not too suitable and that we will eventually need more land. This seems like a good opporutnity to get it for the cacao project and other operations also. Dr. Hume added that even though this cacao plantation would be put on a production basis and the project would support itself, it would take some financing and time to get it started besides the purchase price. Dr. Allee agreed that the matter will require further study and that the Institute cannot go into the project without the cooperation of the Cocoa Institute or help from the World Bank.

Dr. Buchanan inquired as to what would be the reaction of the natives on such a project and whether it would compete with their plantations, but Dr. Allee said they would not object since we would have only four or five thousand acres altogether. Dr. Buchanan also inquired about the taxes on this additional property, but Dr. Allee said this would be no problem since there is no property tax in Costa Rica. Mr. Colom suggested that on an operation of this size, it would be a good idea to get the approval of the Board of Directors, and all agreed. Dr. Buchanan inquired as to the health conditions in the area, and Dr. Allee said it is a malarious region. Dr. Allee said if it was decided to enter the project, the Cocoa Institute would send a commission of two or three people to look over the property first.

It was agreed to await the decision of the American Cocoa Research Institute before proceeding further and to look into the matter again when the Administrative Committee meets in Turrialba next March.

The session was then adjourned at 5:30 P.M.

Upon the completion of the above description of the Institute's work by Dr. Allee, Dr. Hume suggested that those who had joined the group as guests this morning might wish to make some comments and suggestion on the program of work we are undertaking and give us some idea of the work being carried out by their own organizations.

Caribbean Commission

The first to be called on was Miss Elizabeth H. Armstrong who spoke as follows:

I am scarcely qualified, Miss Armstrong began, to comment very much on the extremely important work being done in Turrialba and the most interesting report Dr. Allee has just made. I would like to give a very short summary of the work being done in the research field by the Caribbean Commission. The Caribbean Commission is a four-power group, its members consisting of the United Kingdom, France, the Netherlands, and the United States. It grew out of the old Anglo-American Commission organized in 1942 and became a four-power group in 1946. The group is essentially an advisory body in the social and economic field and is divided into two working groups. The West Indian Conference's Third Session is about to meet at Guadeloupe in December of this year. It will consist of delegates for all the Caribbean colonies. Some thirty members will discuss the problems of the area in the fields that the Caribbean Commission is qualified to discuss. These include agriculture, fisheries, nutrition, etc. The second auxiliary of the Commission is the Caribbean Research Council which has been slow in getting started. Its first meeting was held in Trinidad in December 1947. The Council consists of not less than seven or more than twelve members, all of whom are chosen for their ability and their experience in the field of research. The main underlying point of the Research Council is that it must ascertain what research has already been done in the region and must not duplicate efforts already made. It has been suggested that one of the most useful projects would be the preparation on roster of people working in the field and the investigations already undertaken or being contemplated. A survey of existing research in the Caribbean region as a whole should be based on a questionnaire, visits to the area, conferences in special fields, and a classifying list to be compiled by the Secretariat of the Council.

Functions of the Caribbean Research Council

The functions of the Council are to recommend to the Commission the number of functions and technical research committees necessary to take care of Caribbean research problems. The Council will meet from time to time, perhaps once a year, but the state committees are unofficial and are supposed to meet when a chairman thinks there is a problem to be discussed. This method has not been too satisfactory, but it is hoped to concentrate on these committees in the future. In the interests of the Caribbean region the Council should ascertain what research has been done, arrange for and facilitate cooperative research, undertake research which no other agency is

willing to carry out, and collect and disseminate information on research. One of the recommendations for the coming conference will call for the organization of the following committees: (1) Agriculture, Nutrition, Fisheries, and Forestry, (2) Public Health and Medicine, (3) Industrial Health and Technology, (4) Building and Engineering Technique, (5) Social Sciences, and (6) Geology and Mineral Resources.

Our program of research, she said, is still in a rudimentary stage because one of the primary problems is that of transportation in the Caribbean. One big problem now is that of getting 300 people down to Guadeloupe. One of the great agricultural problems in the Caribbean area is sugar, and it is necessary to try to diversify the crops since the whole area is a sort of one-crop area. The Commission has set up a conference of specialists on sugar. This matter will probably be taken up in the near future. A conference on livestock and another on the growing of basic food crops have also been suggested. There is great need for uniform animal quarantine regulations throughout the area, and the necessity of a regional forest research center has also been recommended.

The last of the two West Indian Conferences (the first one was held in Barbados in 1944 and the second one at St. Thomas in the Virgin Islands in 1946) was a great success except that so many recommendations were made in so many different fields, including nutritional needs of children, studies of foodstuffs, dietary deficiencies, a conference of soil scientists, etc., that is is difficult to do much with any of them.

The Secretariat of the Caribbean Commission has been empowered to collaborate with the Food and Agriculture Organization, and Mr. Lawrence Cramer, the Secretary General, has been discussing the agricultural problems of the Caribbean with that organization. Miss Armstrong concluded by saying she herself is very much interested in increasing the collaboration with the Food and Agriculture Organization in the mutual exploration of their common problems.

In answer to Dr. Geib's question as to whether the Commission carries on research or just coordinates it, she replied that it does carry on research. Mr. Colom mentioned having seen the Caribbean's series of publications on sugar and other problems and received an affirmative answer to his inquiry as to whether the Commission planned to publish technical bulletings on its research. Dr. Buchanan asked what are the territorial delegates from the United States, and Miss Armstrong said they are from Puerto Rico and the Virgin Islands. She agreed with Mr. Colom that the Commission is more concerned with insular problems than with continental problems and said that along with the territorial delegates, observers from Cuba, the Dominican Republic, and Haiti are expected at the forthcoming conference. Mr. Belshaw asked what are the main fields covered by the Committee on Social Sciences, but Miss Armstrong could not give a complete answer.

Closer Relationship between the Caribbean Commission and the Institute

Mr. Colom stated that the Institute and the Pan American Union are concerned with coordinating the work in this area so as to avoid duplication of work and pointed out that Dr. Allee has also been concerned with closer relationships with the Commission. Efforts for such coordination might be continued here in Washington and in the field as concerns the question of research and the problems of distributing information. We might get together, he said, on special projects, such as coffee, sugar cane, and other fields in which the Commission is working. Miss Armstrong agreed and suggested that after the first of the year a committee of Institute and Commission representatives be set up to discuss these problems. Dr. Allee also suggested that the Commission might be a source of contact between the Institute and the various areas of the Caribbean--in the case of our Technical Cacao Committee, for instance. The Research Council might be interested in sending representatives to this meeting.

Dr. Hume remarked that apparently the Commission's plan had not progressed very far as yet. Miss Armstrong agreed but thought things would progress much faster now. Dr. Hume asked if a research center would be established or would a cooperative effort be made with the various islands. Miss Armstrong favored the latter and mentioned the existence of the Imperial College of Tropical Agriculture in Trinidad and a Station in Barbados. She pointed out that the headquarters of the Commission are in Trinidad. In response to Mr. Colom's inquiry as to how it is financed, she said the four member powers at present support the Commission, but it was her opinion that other countries in the area will eventually be brought in at least on a consultative basis. The Guianas, she said, are already included.

Rural Welfare Division of the Food and Agriculture Organization

Miss Armstrong took leave of the meeting, and Dr. Belshaw was asked to tell the group about the work of his division in the Food and Agriculture Organization. The Rural Welfare Division, he said, is the youngest division to be established and is only now becoming a going concern. Its central responsibility is the bettering of conditions of rural populations, but it is aware of the fact that this covers so many different problems that its approach has to be a cooperative project with other divisions of the Food and Agriculture Organization and other international organizations. It should be concerned with processes by which any aspect of welfare may be improved, particularly educational processes and the development of rural organizations. I am particularly interested, he said, in the approach of the Institute's Dr. Hatch to the problem of his rural community work.

Functions of the Division of Rural Welfare

The official definition of the functions of the Division states that its primary responsibility includes institutions, cultural and other problems

affecting environmental conditions, rural wages, economics, education, etc. It is not concerned with the technical aspects but with the social aspects of these problems. In relation to health it cooperates with the World Health Organization, in relation to rural industries and land tenure with the Agriculture Division of the Food and Agriculture Organization. The main kind of work which we should be required to do is the collection of information which is basic in order that we may become informed and make information available to other countries. Second, we are to make studies and these are of three main types: (1) Studies of significant achievements which might provide guidance to other countries placed on the same cultural level. We are nearing completion on a study of a school in a remote province of China. This school has adopted an integrated approach to the problem of rural education by the development of cooperative principles and the establishment of small industries as well as the development of farming. We hope to conduct other experiments of significant achievements which might be of interest. (2) More general analytical studies intended to elucidate the main problems of education. We plan to conduct next year an analysis of the problems involved in small-scale rural industries. (3) Surveys at the request of a government on a particular problem in its territories or more general surveys in relation to a problem of more general application. We hope next year to report on women's and youths' organizations in the various countries, to discover their relationships with other educational organizations, etc.

There are two other main types of approach: (1) Small conferences of experts on a regional basis. We would call together people who are face to face with the particular problems in particular areas. Next year we hope to have a small conference on cooperatives. It is better to get the people together to examine the problem as they see it and to report on where they have succeeded, where they have failed, where the main difficulties seem to be, where it is valuable to conduct further investigations, and where the Food and Agriculture Organization might help. It may be that similar small conferences of experts on other problems might be appropriate. (2) A further procedure is to organize small training schools. We believe that in many countries one of the basic impediments to improvement in rural conditions and to the improvement in production is the lack of trained personnel. Even in production programs it is necessary to pay particular attention to sociological aspects of the problem and show the people how to do things for themselves.

Rural Welfare Training Center--Possible Cooperation with the Institute

I am particularly interested, Dr. Belshaw continued, in this community approach Dr. Allee speaks of, since it places emphais on the fact that the people will have to do the job for themselves. We have in mind a small extension training school in Latin America or the Middle East. The word "extension" is an American word and is not understood in New Zealand where I come from. Many people do not know what it means. The concept is somewhat broader than is indicated by the word "extension". It is a school on

education designed to improve rural wellbeing. It may be a problem of fundamental education, relating general educational problem of fundamental education, relating general educational problems to improving material conditions. There are problems of literacy, community organization, those connected with the discovery and use of local leaders which cannot be separated from extension.

We hope to collect together a few people familiar with the problems to discuss the needs, the administrative problems, and specific problems with which people in the areas are concerned, and their needs in relation to the sociological basis. We had hoped that it might be possible to collaborate on the planning and organization of such a school in 1949. We have discussed it briefly with the Director General, and he is extremely interested in such cooperation. The budget of my division would be sufficient to provide for two experts. This cooperation might achieve a number of things: (1) It would strengthen the resources which could be made available for work; (2) It would demonstrate the possibilities for cooperation with other international organizations; (3) It would be exploratory in character and might point the way to very fruitful similar activities in other fields. The decision as to where this school will be located will be made by the Conference which meets next week (November 15). My own view is that it would be wiser to hold such a school in Latin America rather than in the Middle East, bearing in mind that there are closer possibilities for cooperation in Latin America and the present rather disturbing conditions in the Middle East. It might be indicative of other possibilities for collaboration.

Dr. Hume assured Dr. Belshaw that the suggestion he had made would receive very careful consideration. I believe, he continued, there is much in it not only as related to this particular problem but perhaps as serving as a pattern for similar undertakings.

Dr. Allee said he suspected that how to make resources most efficient by backing each other up is one of the most important fields for such organizations as ours. How do we establish liaison and reenforce each other?

Agriculture Division of the Food and Agriculture Organization

Dr. Buck was then requested by Dr. Hume to say a few words on the activities of the Agricultural Division of the Food and Agriculture Organization in Latin America. One of these is a conference of technical men and administrators on the infestation of stored grains. This conference is to be held in Colombia in February. Mr. Easter, specialist in that field, is now in Latin America visiting various countries and making contacts to be used at the Conference. FAO is cooperating with the Economic Commission of the United Nations, or rather of Latin America, on a working committee on fertilizers, farm equipment, insecticides, etc. The Economic Division has held a training school on the 1950 census in Mexico. These are active projects already under way. As this program develops in the field of soil

conservation, we can see real possibilities of cooperation with the Institute on that problem.

Mr. Colom declared that we are thinking of approaching this problem more from the angle of soil technology rather than from the promotional angle that we have done in the past five years. A soil technologist will be attached to the Division of Agriculture and Conservation of the Pan American Union, he said, and added that it is difficult to get the right kind of man unless you draw him from the federal departments of the United States Government.

Dr. Buck continued--in the fields of soils we would entertain a request from some country or countries for setting up a training station for men who have had some training in soils. The same is true in the field of land classification. We hope to do at least one of these things in some country or some region next year.

Dr. Allee said there has been a great deal of confusion in both of these fields. Such a program might get a lot more reason into the whole program when many countries are proceeding to expand that kind of work. An energetic land classification project might be the key to the approach of this conservation program.

Dr. Buchanan asked Dr. Allee if in speaking of land classification he referred to land uses, and Dr. Allee replied that he referred specifically to surveys to determine the best use for a given kind of land. Dr. Buchanan said that very little has been done on soil surveys in the tropical areas. Mr. Colom said a survey has been made in Cuba, and Dr. Allee added that Colombia now has a program under way and Venezuela has done some work in this field. Mexico has perhaps gone farthest in this respect.

Forestry Division of the Food and Agriculture Organization

Mr. Harrison then spoke as follows on the forestry work of the Food and Agriculture Organization:

He said the question of soil surveys is also important as far as forestry is concerned. A Latin American Conference on Forestry and Forest Products at the government level was held last spring at Teresópolis at the invitation of Brazil. It was a very useful conference. Latin America has one of the largest untouched forest reserves in the world and it also has about the most difficult kind of forest to handle. The possibility for the future in the line of industrialization of the forests is very great. An international approach to their development, however, seems to be essential. Several of the resolutions adopted by the conference were concerned with machinery for future cooperation. A pattern is already developing in Europe which might be applicable in other regions. Two things are being done by FAO: (1) It is participating in providing a secretariat and technical advice with the

Economic Commission of Europe known as the Timber Committee. It has worked out very well. An international agreement has been secured on the allocation of timber supplies. Steps have been taken to supply equipment to countries which could increase their production with such equipment. (2) It has aided in the establishment of a European Commission on Forestry which is designed to give governments an opportunity to get together regularly and discuss their problems on forestry. A resolution made at Teresópolis calls on FAO to establish a working party in Latin America, and this will be done if the Conference in the next two weeks approves (Fourth Session of the Conference of the Food and Agriculture Organization of the United Nations). Two men will help organize a Latin American Commission on Forest Products at the government level but to which technical men will be strongly recommended.

Forest Products Research Center

An important resolution calls for the establishment by the Food and Agriculture Organization of a Forest Products Research Center, and arrangements to centralize forestry research as such. This has to be done in the various forest regions, but the existence of a small group at a small center would be able to devise a methodology to bring together the results of various efforts would be very valuable. A forests products laboratory could best be done as a centralized project. It is probable that informal discussions will take place at our conference.

Another idea would be to start with a limited forestry products center to make surveys and a small forest research center to give instruction to people at the post graduate level. This is very close to the thinking Dr. Allee has been doing.

One other point was also made that the governments at Teresópolis demanded another conference in about two years time.

Mr. Colom asked what would be the type of cooperation to be given? Would this be in the form of aid to governments and technicians now carrying out programs of work?

Mr. Harrison said that the Food and Agriculture Organization's function generally, on account of the size of its budget and worldwide scope, is that of acting as a sort of catalytic agency to provide machinery by which governments can consult together and to give to a limited extent technical advice or tell governments where they can get such assistance. Work has been done in the last analysis by the governments. FAO acts as a medium for the interchange of technical information and can play an extremely useful part. The working party in Latin America would have as its duty keeping in closest contact with the various governments and assisting them in any way possible. If the governments set up this research center, a tremendous amount of overlapping can be avoided and costly mistakes in developing these resources can be prevented.

Dr. Allee remarked that this idea is very much like the Institute's Cacao Center, and Mr. Harrison continued by saying that an angle which is not stressed enough is that functions of forests are two-fold--they are to be protective as well as useful for forest products. It would be a mistake to think that one is less important than the other. Disasters come from stripping the hillsides, and these always fall directly on agriculture. The Food and Agriculture Organization can play an important part in channeling in the experience acquired all over the world in this field and in the development of the forest industries. Some of the most successful work has been done--say in Sweden--because the approach here is a deliberate attempt to develop an area of forest for industry by getting better utilization of the forest and thus more money is made on it. If FAO helped to stir up efforts as to the possibilities for this sort of thing it would do a great service. We can secure practically all the up-to-date advice there is. A list is now being prepared of the various companies, the length of their experience and the typical work they have done. This will be given to governments who are thinking of undertaking forestry work. There is the technical side of the matter--of surveys that should be made, etc. FAO can secure competent advice on this. It has just completed and published a document on FOREST RESOURCES OF THE WORLD, which is based on a new type of questionnaire circulated to all the countries of the world on which a particular effort was made to get uniform replies. The resources of each country are given in the same report, and summaries are given by continent.

Dr. Taylor inquired as to whether this report is a pretty good inventory or a step toward something more comprehensive. Mr. Harrison replied that it is a step toward something else. There were five tables in the questionnaire. Some countries filled out only two. Only one country in Latin America--Chile--filled out all five.

Saving the Latin American Forests

Dr. Allee stated that it is certain that forestry is an urgent problem now, and Mr. Harrison said it is especially acute now in Latin America on account of soil and climatic conditions. The danger of wiping out forests in Latin America is extremely acute. When prices are high the whole forest is apt to become permanently degenerated, and you can never get it back. In Africa it was suggested that the forests be classified as to possible production and known production. The productive forest in Africa could be three times as large as it is today had it not been for shifting cultivation and use of fire. With the prospects that lie in Latin America for industrial expansion, it is felt that methods for forest conservation are very urgent.

Dr. Allee then questioned if it is still not too late in Latin America to save the forests. Mr. Harrison said no, since there are still vast forests due to the fact that lack of transportation in many areas has prevented drawing on their resources very greatly. Dr. Allee indicated that the bulldozer would change all this, and Mr. Harrison agreed and further

stated that in Latin America it may be of indispensable help but it can also be a great danger.

Dr. Buchanan inquired as to the differences between the problems of the forests in the temperate and tropical zones. He said he understood that there is a good deal of scattering of useful trees and inquired as to the reproduction of such trees if they were destroyed. Are there plenty of small ones coming up or are certain types of trees being exterminated? Has forest management in tropical countries been seriously considered?

Mr. Harrison replied that very little has been done in Latin America. Success has been achieved in certain kinds of tropical forests in Burma--mahogany. The great problem is to find a way in which the forest can be worked as a whole--to find out what to do with the trees and where they can be marketed. The proportion of conifers is trifling, and the need for enormous quantities of soft woods has developed in the temperate zones. However, if there is to be great industrialization if forest products in Latin America, it must bring with it an adaptation of uses for hard woods.

Dr. Buchanan said he supposed there has been no adequate survey of the uses of the different species.

Mr. Harrison said there is a lot of information on tropical species at the University of Wisconsin, Yale University, and other places, but actually the surface of the problem has just been scratched.

Dr. Taylor said he thought that in the case of tropical forests the same methods cannot be used for starting regrowth as those used for Douglas fir trees. Mr. Harrison said that in many cases this is not known.

Dr. Allee remarked that a lot of farming is essentially dependent on the forests--coffee and cacao require shade. We may have to come to growing tree rotation with our crops. You cannot separate the two in the tropics since the cropping program is so closely related to forestry.

Dr. Buchanan remarked that in some sections of the tropics we know that soil simply does not grow. Mr. Harrison said that the great forest resource in Latin America is the Amazon Basin, which has a tropical rain forest. There, precipitation at some times of the year is so varied that leaching takes place and soil degenerates very rapidly when it has no tree cover over it. Dr. Buchanan agreed that the question of soils is extremely important.

Technical Collaboration Branch, Office of Foreign Agricultural Relations Relations, United States Department of Agriculture

At this point, Dr. Hume asked Dr. H. V. Geib, of the Office of Foreign Agricultural Relations, to speak on the work of his branch of the United States Department of Agriculture. Dr. Geib said the Technical Collaboration

program of the Department of Agriculture has been cooperating in this hemisphere only with the other American Republics to date, although with new legislation, the cooperation will be extended to other areas of the world. The work has been largely through participation in the agricultural work of experiment stations in the other countries. The other countries have furnished the sites and local technicians; the United States sends in technical men as advisors to the local technicians whose duties are to develop projects needed in the regions and to train local technicians. The work is not limited to research, and in very few cases is the research fundamental. It is more of a practical type applicable to the needs of the region. He cited the station at Tingo María in Perú as an example. The Director of the Station is an American;the Vice Director is a Peruvian. Local technicians have taken over soil chemistry work, the Peruvian pathologist is at present carrying on by himself, and a great number of Peruvian technicians are working there.

The work of the Technical Collaboration Branch, he continued, covers pretty much the whole field of agriculture in the region, but we specialize on crops complementary to those of the United States--those that have to be imported here. This became especially important when our source of these supplies was cut off in the Far East and we were practically without them here. We have found tremendous areas of very fertile soils in Latin America--in rain forest areas. Some, as the forests are taken off, leach very rapidly and their elements are washed out. In some places, by letting vegetation come up for four or five years, a relatively good crop can be grown for a year or two. This has resulted in the milpa type of cropping. One of the greatest problems is to find out how such areas can be farmed. In some cases there is sufficient good soil so those areas can be put back into forests, but usually the areas do not have sufficient means of protecting new forests even if they are established. The demand for land would be too great.

In recent years the extension or farm supervisor part of our program has been developing more rapidly; that is, getting information out to the farmers. Tingo María was first opened as a colonization area, and it was not until new crops were brought in and tested that this progressed much. When you go into a new area, you are immediately beset with insects which have not been a problem before and you don't know how to control them. They have to be identified and means worked out for controlling them. Usually with a disease the best control method is to develop resistance. Sometimes we work out resistance to diseases which can be brought to this country. The problem differs in each country.

Perú has quite a number of good schools where they turn our fairly well trained technicians. Colombia also has some, but many other countries have almost no technical training in agriculture at all, and the most promising boys must be brought to this country and then returned to their own countries. This is paying dividends, especially in those countries where they don't

have training themselves. In Ecuador little progress was made at the start because they didn't have any locally trained men, but much has now been done, and a very fertile area, hitherto unknown, has been found at the foot of the mountains. There is a long dry season, but there are clouds and consequently there is not too great a loss of moisture. Cacao plantings there were almost abandoned, but they are coming back now that the price of cacao is so high. One of our studies has been how to rehabilitate this cacao.

Our programs are coordinated with other programs in Latin America through the Department of State from which the appropriations come. This is worked out through an interdepartmental committee so as to prevent duplication of efforts. Most of our work in those countries is under cooperative agreements for ten years or so.

Dr. Geib then indicated that Dr. Allee was in on this program before he became Director of the Institute and asked him to speak further. Dr. Allee said the main objectives of the program were to develop a more complementary economy in the hemisphere and to strengthen the resources by not ignoring the tropical farming. Dr. Geib then continued by saying that what has to be done is to stabilize the regions, give the people food, etc., in order to make them stay there. They have to have better health. Malaria, dysentery, etc., are present in the regions. They have to have schools, churches, provisions for protecting private property, etc., and we have to help develop these things in order to protect the community.

Dr. Allee added that the aim of the series of bilateral programs is to strengthen the work in the national stations. Some of the personnel of the United States Department of Agriculture are stationed at the Institute in Turrialba from time to time, utilizing its facilities for carrying out part of their programs.

Mr. Colom said he understood that an agreement is being proposed to formalize some of these programs with the Pan American Union. The plan was to coordinate most of this work through the Institute in Turrialba when it reaches a point where it can do more of that kind of work. Some of these arrangements might be formalized through the Organization of American States since some of these agencies are doing work of a similar nature; therefore, greater coordination ofefforts seems desirable. We have hoped, he continued, that the Institute in Turrialba will develop to the point where its influence will be felt by all the governments, including Argentina and Brazil, and these will look toward it as a forceful organization in the field of research and education.

Application of Agricultural Training Received in the United States to Latin American Conditions

Dr. Geib indicated that one of the difficulties with the boys who come to the United States from Latin America to receive technical training is that

they go back to their countries and try to put the same methods into effect there that they have found here. Often it doesn't work out that way in their countries since conditions are different, and they don't have trained people to work with them. Therefore, it would be very valuable to have an Institute like the one at Turrialba, which is in the tropics and all the work is carried out under tropical conditions. If the students could spend some time at the Institute after receiving their training in the States, perhaps work out their theses at the Institute, they might learn to apply their knowledge to tropical areas.

Dr. Allee said he thought this would come about. As a matter of fact, the Institute has one such student now. Mr. Colom agreed on this point. He said a good botanist in New York, for example, might not be a good botanist in Ecuador, and there must be a seasoning period. The Institute seems to be the answer to this question.

Mr. Harrison commented that this is a very real problem; the men must be taught to adapt technical information learned in the United States to conditions in the tropics.

Mr. Colom continued by saying that they must learn how to work with their hands. The Department of Agriculture, he said, has been helpful in this. The need is for specialists to do the work and not sit down to desk jobs.

Mr. Harrison said that in the field of forestry we feel that we must encourage the establishment of a properly organized government service and help the officials plan a proper kind of organization putting stress on those aspects which experience has shown elsewhere must be stressed. This could probably be applied to an agricultural service as well.

Dr. Allee agreed to a certain extent but said that most of the countries do have some kind of an agricultural office, but not all of them have a forestry office.

Dr. Belshaw indicated that it is of great importance to make the technical information of one country available to another. The fact that men go back to their countries and want desk jobs may be due in part to the sociological aspects involved. That is why the work at Turrialba is so important--to change the outlook of society on such work.

Dr. Geib added that the Latin American men who come to the United States to go to school are brilliant, but they have had no experience with their hands. When given a chance to suggest projects, a great wealth of them are suggested, and as a result nothing is ever done on any of them. A Department of Agricultural Engineering was set up recently in one of the Latin American Ministries of Agriculture. Over a hundred projects have been proposed, but there are not enough trained men to carry them out and none is very likely to progress very far. However, Dr. Geib cautioned, we

forget that it has taken us so many years to get where we are in our agriculture, and we can send bulletins to our farmers. Down in Latin America we are discouraged if we don't see results in two years. We must remember that seventy-five percent of the farmers can't read and write and we have to have demonstrations for them. It takes a long time to bring about a change, since the average peon does his work just as his father and grandfather did it before him. We are now getting some thought into the problem and it is improving. We must do it slowly, use the most primitive methods, and send men there who have understanding and great patience. It is a long-time program.

Dr. Hume concluded by saying that this is all the more reason why we should start and asked Dr. Taylor to say a few words. Dr. Taylor indicated that the Department of Economic and Social Affairs has a direct interest in this type of work because it is one of our economic and social problems. At present, he said, however, his office was more directly concerned with matters pertaining to the Inter-American Economic and Social Conference scheduled for March in Buenos Aires. Even there, he said, some of these specialized problems would be discussed.

Financial Support of the Institute

Mr. Curtiss, Treasurer of the Institute, was then asked to report. He reminded those present that the basic instrument on which the Institute operates is the Convention which sets forth that the Pan American Union shall be the fiscal agent for the Institute and will be in charge of its pay roll, expenditures, selection of personnel, requests for purchases, etc. Most of this work, he said, is done at Turrialba, although the nucleus of its funds is kept in Washington and its accounts are centralized here. The control rests with the Director of the Institute, however. At Bogotá the idea was set forth that the Council of the Organization of American States should make agreements with the specialized organizations, and he indicated one will be proposed to show what the relations between the Institute and the Pan American Union shall be.

Last year we had the unfortunate experience of adding to our deficit, partly because of over-estimating our income. The reason it wasn't worse is because Dr. Allee economized and spent less than the budget provided. The income was derived mostly from the participating governments, although other items came from the operation of the farm and special projects. These should not be considered as part of the permanent program, however, because they come and go. The deficit for last year looks worse than it is. The sugar cane crop, which normally would have sold during the fiscal year, wasn't sold until after the end of the fiscal year. The failure of some of the countries to pay promptly is another item that causes considerable concern. The United States is a big contributor, and even if all of the Central American countries paid their quotas, the United States would still predominate. What is really needed is to get some of the bigger countries

of South America to ratify the Convention and contribute to the support of the Institute so it won't be mainly a United States operation. Most of the money is not spent here, but we maintain a payroll for the higher paid people for the purpose of paying them in dollars.

Dr. Allee said the Pan American Union has been most helpful in aiding the Institute, particularly with a retirement system which the small group of Institute employees could not finance alone but can do it very well by joining the parent system.

Need for More Countries to Ratify the Institute's Convention

Mr: Colom said there were five countries behind with their payments; three of these have now paid. One country, the biggest outside of the United States, owes for two years, totaling an amount of something over $44,000 and another owes for four years amounting to $12,000. This deficit is money which has been included in the budget for the last few years. The problem facing us now is not quota collecting as much as it is securing added income. Seventeen countries have signed the Convention; Argentina has been on the verge of ratifying for two years now. Colombia has just signed and may ratify in the next few months. We have told the directors of the Union that the Board must take more interest and more action on this question of contributions of participating nations so that the institution will not continue to be supported mainly by the United States Government and by grants for special projects made by private institutions. I am sure the Secretary General here understands this, and on Monday this will be discussed with a Special Committee of the Board that handles specialized organizations. This is the only specialized organization that the Union has now of importance in dollars and cents, since the status of the others has not as yet been defined. We should define the status of the Institute and make a definite attempt to aid it by ratifications on the part of those countries that have not as yet joined the institution. Some of the countries that have not contributed have been greatly benefited by the worked of the Institute and the direct help of our technicians. It has reached a point where the Board has to take action. It is no longer a purely administrative problem now.

Dr. Geib suggested that something should be included in the agenda of the Buenos Aires Conference regarding this matter even if no more than to get the countries to give a voice of approval to the Institute. Dr. Taylor said there is no final agenda as yet, and when Dr. Hume asked if he thought it possible to do this, Dr. Taylor said it might very well be done. He assumed that problems of this kind would be considered before the final agenda is drawn up. He added that note should be taken of material which should be included in the supporting documents for the Buenos Aires Conference. Definite steps, he added, must be taken to raise the economic level of the people in these countries, and anything which this body would wish to include in the documents for consideration by the Conference might be added to the agenda. The work of the Institute from the long-range standpoint should not be overlooked.

Dr. Hume then adjourned the meeting at 12:30.

THIRD SESSION

The business session of the Administrative Committee meeting was resumed at 2:30 on the afternoon of Friday, November 12. Also present were Dr. Buck and Mr. Harrison of the Food and Agriculture Organization and Mr. Calvert L. Dedrick, Coordinator of International Statistics, Bureau of the Census, who represented Dr. Halbert L. Dunn, Secretary General of the Inter-American Statistical Institute.

Inter-American Statistical Laboratory

The first matter to be taken up was the proposal for establishing an Inter-American Statistical Laboratory at the Institute. This project had been originally proposed by the late Dr. Otis Pope of the Office of Foreign Agricultural Relations, United States Department of Agriculture. In discussing the matter Dr. Buchanan asked if there are any Latin Americans trained in this particular field, and Dr. Allee replied that there are a few thoroughly qualified men in this field. However, there is a general need for statistics on these countries; they need to have a center to keep lasting statistics for all the countries. It was hoped that the Food and Agriculture Organization might do this for us. Dr. Buchanan asked if the Institute has statistical reports of the International Institute of Agriculture. Dr. Allee replied that the Institute has some, but not a complete set, and Mr. Harrison added that the last report was finished before FAO took over. He indicated, however, that some of their personnel have remained. He then indicated that if the Institute undertook the machine compilation of statistics at Turrialba, it seemed to him that it would be a tremendous job for the institution. Dr. Allee agreed that there would be many problems, especially if the other countries wanted the Institute to do this work for them. Mr. Harrison said, however, the Institute would probably want a set of machines in order to do biometric work, and Dr. Buck agreed that this would be a good idea to have a set of them for training students.

Inter-American Statistical Institute

Dr. Dedrick arrived at this moment and spoke about the training program of the Inter-American Statistical Institute. Trainees are selected in the different countries and brought here for a year. They spend four months in the Bureau of the Census under a bilingual staff and eight months in their own specialization work. At the present time there are eight Bureau of the Census students in New York enrolled in Columbia University. The Bureau of Labor Statistics has four people here and seven in New York. The Bureau of Agricultural Economics has six in Wisconsin and perhaps four elsewhere throughout the United States. The Statistical Institute has a consultant in Perú and one in Haiti who is taking a trial census in 1949.

The history of census of population in some of the Latin American countries is very sad. Ecuador has never had one; Perú in a sense has never had one; Bolivia not since 1902; Uruguay had a very good one in 1908; Argentina,

untina, until last year, had not had one since 1914. Other countries go back into the twenties for their last censuses. In relation to agriculture quite a number of the countries are planning to take censuses before or after the population census of 1950. In Mexico City fifteen countries are represented with fifty-six students preparing for this census. The United States has trained over 150 people in the last year. The Ministers of Foreign Relations and men who have been on international missions from time to time demonstrate the most interest in censuses because they have had no statistics to present at such meetings. The pressure now is to get the first real censuses of agriculture in most of these countries. We are pushing the Congress of the United States in every way and have worked the budget up to around $350,000 this year. Other countries are participating by paying salaries of their people while they are here and sending some up entirely at their own expense. Such cooperation would increase more if we did not have such a severe dollar exchange.

The Inter-American Ststistical Institute is trying to work out an affiliation with the Organization of American States and the Pan American Union as its secretariat. This will be discussed at the Board meeting next week. It is proposed that the Inter-American Statistical Institute and the Pan American Union consolidate their forces on statistics.

Mr. Colom asked if it wasn't the intention of the Pan American Union to create a statistical service itself. Dr. Dedrick replied that this was true and the Statistical Institute would furnish the staff. The work would fiscally be under one roof. Dr. Allee said the Institute was thinking of combining social and economic statistics and biometrics.

Dr. Dedrick continued by saying that undertaking biometrics would require you to staff yourself with a "subject matter" man which would be outside your field. Studies of the distribution of goods, labor, cost of living, prices, employment, and unemployment would also require subject matter men in those particular fields. My advice, he added, and I believe it would be the advice of Dr. Dunn, the Secretary General of the Inter-American Statistical Institute, would be to specialize in the development of sampling techniques, gathering of statistical data and analyses in the general field of agriculture and agricultural production, including estimating of production, etc. We are looking for people to undertake other aspects such as sampling human populations, but unless you can get the staff for it, I don't believe it should be written into your project. Dr. Buchanan agreed, and Dr. Dedrick concluded by saying I believe I have explained our view and a warning against spreading to fields other than that of agriculture. Good men in your field are very scarce. You can count them on two hands and most of these are not available. However, most of the experts on sampling are in the field of agriculture, whereas in the field of population they are not available.

Conservation

Introducing this topic of discussion, at the request of Dr. Hume, Mr. Colom spoke briefly on the Inter-American Conference on Conservation of

Renewable Natural Resources held in Denver in September. The Denver Conference recommended that the Pan American Union, Food and Agriculture Organization, and Inter-American Institute of Agricultural Sciences unite to promote the conservation work in the American Republics. Since the Denver Conference, he continued, I have talked to certain officials of the Food and Agriculture Organization as to how to put this resolution into effect. The result was a letter from FAO making suggestions as to how it should be set up and the type of representative it should have from each organization, particularly FAO and the Pan American Union. I brought this matter to the attention of the Secretary General and Assistant Secretary General of the Pan American Union, and a decision was left in abeyance pending the meeting of this committee to get more concrete ideas as to what the committee would suggest before the Pan American Union representative should be appointed and the Conservation Committee actually put into operation.

We have a Conservation Section in the Division of Agriculture of the Pan American Union which has been functioning for four or five years. Mr. Vogt, Secretary General of the Denver Conference, heads this work and has made surveys in several different countries in Latin America at the requests of the governments. He has visited Mexico, Venezuela, and several Central American countries. We are not too sure of the type of person it would be advantageous to have on this Committee, however.

Mr. Harrison expressed FAO's view on the matter by saying we rather felt that the emphasis should be on the immediate job of cooperating and stopping the overlapping in this work. The arrangements about which FAO worte to Mr. Colom had been agreed upon mutually. The Executive Committee would presumably consist of three men. FAO believes the members of this Committee should be very senior people in their respective organizations, men who could speak with a good deal of authority rather than technical men or strictly conservation men as such. They would have to be men with a broad view of the whole field and considerable administrative ability. It is a very important job, and the selection of the individual is an extremely important problem, and he should have some sense of relative stability.

Dr. Buchanan remarked that one would thing that there is a great deal of conservation work going on. Mr. Harrison said there is a great deal of activity by the PAU, the IAIAS, OFAR, and the Institute of Inter-American Affairs, but he emphasized the fact that coordination is what is lacking at the moment. There are a lot of means but no coordination.

Dr. Buchanan said what is needed in the whole of America is some good fundamental basic research in science and not propaganda or any superficial type of work at this time.

Mr. Harrison agreed and went on to say that FAO is an organization of the larger part of the governments of the world, and as related to Latin

America, it should aid the work being done at Turrialba and by the Pan American Union and not by overlapping. Sir Herbert Broadley, he said, hoped to make sure that the work was done and that the food and agriculture situation included a forestry and fisheries section with a head who would see the field as a whole and have the authority to see that a considerable degree of coordination would come about.

Dr. Allee expressed the view that there is so much to be done that there is little danger of overlapping and no question of jurisdiction. However, sociologically, that is a different matter.

Mr. Harrison said that surely it is true that the problems are so vast and the means so small that the existence of this committee should insure that the means are used to the best advantage.

Mr. Colom said the work the Pan American Union is doing is the offspring of the Eighth American Scientific Congress which drafted a Convention for the protection of certain species of plants and animals as well as forests to prevent the reckless use of land, water, and other renewable natural resources. We had no intention of creating a division or department strictly for conservation. What we have done and plan to do in the near future is the creation of a technical unit that will be able to coordinate the technical features of the work that FAO, the IAIAS, and other organizations do. The theory of conservation is fine, but in actual practice we want any program we may develop to have behind it land utilization, water utilization, and forest utilization. The technicians should be educated to work towards that end and disseminate this information among the various countries. Mr. Harrison commented that one thing that came out very clearly in Denver and in the planning for the forthcoming United Nations Conservation Conference is the absolute necessity of working on the conservation angle as a whole and getting into the minds of the specialist the fact that this is a part of the whole picture and doesn't exist separately.

Mr. Colom asked if it might be feasible to have the suggestions of FAO as to who the representative from the Union might be. We have thought, he continued, of an educator or a man known in the field of conservation. It should be a man acceptable to the two other organizations and to the governments.

Mr. Harrison replied that FAO feels that it doesn't matter very much whether or not the man is a conservationist, but he must have a broad view and be capable of discussing the problem in an objective light. He should be a man who knows what is going on in Latin America. The representative of FAO would not necessarily know anything about soil science, but he would know what work is being done by FAO in the field and what is going on in Latin America. This Committee will have an advisory committee of technical men to assist it. The Executive Committee, he emphasized again, is to be a coordinating committee.

All were agreed on this, and Mr. Harrison stated that FAO is now waiting for a reply from the Pan American Union. Dr. Buchanan remarked that no suggestion has been made as to the advisory group and asked if it would be made up of technical men appointed by the Executive Committee. Mr. Harrison indicated that FAO would like suggestions from the Pan American Union on this, and Dr. Buchanan expressed the view that the Executive Committee is to be set up.

Mr. Colom recalled the fact that when meetings of the Inter-American Soil Conservation Commission, an inter-American committee to protect soil and water resources, were called, the governments were in no position to send delegates to them, and he emphasized the fact that in this instance responsible officials should be appointed to the Executive Committee and the advisory group who would be able to go to the meetings.

Mr. Harrison and Dr. Buck departed, and the Administrative Committee got down to the serious business of considering the agenda laid out for it. The proposal stating (a)"that a member of the Institute staff be appointed chairman of the Institute Committee on Development and Conservation and to serve with representatives of the other organizations concerned and the Executive Committee in bringing about action on the Denver report, (b) that the Institute make every effort possible within its budget provision and attempt to obtain additional financial support for research and training along the lines of the Denver recommendations and also that steps be taken to develop cooperative projects on land classification, soil and water run-off, the strengthening of college curricula, etc., with member countries, and (c) that to the above ends there be considered by the interested organizations the possibility of establishing an appropriate center from which to attack these problem in equatorial America, and that since it is one of the functions of the Institute to do this work, its facilities will be offered for that purpose as they become available" was approved unanimously. Dr. Allee was appointed to represent the Institute on this Conservation Executive Committee, with Dr. Manuel Elgueta as alternate. Dr. Hume remarked that although our facilities in this field may not be much at the present moment, we may have more to offer than other sources and we are better located.

Dr. Buchanan brought up the question as to where support might be obtained for the whole conservation program. With financial help it could then handle basic soils, forestry, and wildlife. Dr. Hume said this is a very difficult thing to get support for, and Mr. Colom recalled that for the Denver Conference some $12,000 was raised without much effort from various organizations. Dr. Hume wondered if some private support for these projects might not be obtained in the Latin American countries. Dr. Buchanan said this had been tried in connection with wildlife preservation without success, and Dr. Allee indicated that the wealthy people in Latin America are for the most part only moderately wealthy and not usually philantropic. Mr. Colom thought there would be a better chance of obtaining assistance from some of the same groups in the United States as have helped before as well as from international societies interested in conservation and bird and wildlife preservation.

Quotas and Membership

It was recalled that ten countries have signed and ratified the Convention of the Institute and seven more have merely signed. The ratifying countries were in arrears in paying their quotas on June 30, 1948 by $35,333.50 and on October 12, 1948 by $72,249.85. Argentina, Colombia, and Cuba are supposedly engaged in the process of ratifying the treaty, and Ecuador and Haiti have indicated their intention to do so.

The following proposals were approved: "(1) that accounts be submitted to each member country in early July each year, or when each country prepares its budget, indicating the amount owed and supplying information on the activities of the Institute required by respective budget authorities. The accounts are to be prepared by the Treasurer and the the attachments by the Institute, and they are to be submitted in the manner most consistent with the policy of the Organization of American States; (2) that the Organization of American States be requested to consider the feasibility of an active program to bring about further ratifications and to collect quotas that are in arrears."

Philippine Participation in the Institute

The matter of Philippine participation in the Institute then came up for discussion. Dr. Allee stated that at the present time they cannot become members but indicated that some kind of association with the Republic might be feasible. We could, at least, offer them one of our cacao fellowships. Dr. Hume asked what value such an association would be to the Philippine Republic and to us. Dr. Allee replied that the Republic would derive approximately the same advantages as any tropical American country, and it would be advantageous to the Institute to have some connection with the Philippine Bureau of Science, which is one of the most reliable sources of publications on the tropics in existence. Something might be worked out whereby the Philippine Republic could become an associate member of the Institute and contribute to the support of the organization. Dr. Hume suggested that an informal discussion on the matter might be had with someone connected with the Philippines, and Mr. Colom indicated that the Department of State felt that any cooperation with the Philippines should be established through the Food and Agriculture Organization. Dr. Allee stated that Dr. Irizalde of the Philippines had already spoken to him about the matter, and he thought it might be brought up again by mentioning cooperation as to the exchange of publications and keeping in touch with the Republic. We know, he continued, the Republic is interested in cacao, and if they would send a properly qualified student to the Institute, we would be glad to give him training. It was finally agreed that there should be no hurry about the matter but its advantages might be considered later on.

Canadian Participation in the Institute

The matter of Canadian participation in the Institute was then taken up, and all agreed that it is impossible under present circumstances for Canada

to become a full-fledged member of the Institute. Dr. Hume commented that Canada's main interest in tropical products would be in their manufacturing processes. Mr. Colom said the Canadian view on the matter had been felt out, and it might be a good idea to review the situation now. Canada could participate in some way if the country felt that it would be benefited enough by doing so. He suggested that we might go through Mr. Dodd of the Food and Agriculture Organization and perhaps get some kind of informal exchange-of-letters type of agreement with Canada. It was agreed that the possibility of a semi-official affiliation might be sounded out with some Canadian official.

Efforts to Obtain Further Grants

Dr. Hume mentioned the fact that Dr. Buchanan had discussed the possibility of obtaining a grant with Ford Foundation officials, but for the present this is not likely. Dr. Allee said the National Coffee Association has a definite interest in coffee research, and there might be a possibility of getting a grant from them since there is a definite possibility that there might be a critical coffee situation in the United States in the next few years. Machado and Company in Cuba is also interested in a cacao farm in Mexico. Dr. Allee concluded that he thought it might be advisable to sound out this sort of thing particularly with the National Coffee Association (roasters and grinders) and the Green Coffee Association (brokers). Dr. Buchanan commented that coffee would be one of the most desirable programs for the immediate future. Fats and oils and fibers are also being considered. In connection with the agricultural engineering program, for which Dr. Buchanan had sought aid from the Ford Foundation, Dr. Hume complimented him on a good job and said he understood the final decision rests in the hands of Mr. Ford.

Publications

All agreed that the publications, bulletins, and annual reports are very important. Dr. Allee stated that there had never actually been an item in the budget for these as such, and Dr. Buchanan asked if the Pan American Union doesn't have a fund on which the Institute could draw for its publications. Mr. Colom advised the group that a fund has been created in the Department of Information, but the type of publications to be issued has not been decided upon as yet. It is proposed to issue the "Annals of the Pan American Union" and a lighter monthly publication. He though the matter might at least be brought up. Dr. Buchanan asked if the technical publications of the Institute could be put out as one of the regular series of the Pan American Union. Mr. Colom said perhaps the Journal of the Institute could be substituted for the agricultural series, and Dr. Buchanan said there is a need for a publication in which tropical material can be issued with some degree of beauty and good presentation. Mr. Colom estimated that the Journal could cost between eight and ten thousand dollars a year to issue.

The meeting was then adjourned at 6:10 P.M. until Saturday morning.

FOURTH SESSION

The Administrative Committee resumed its session at 9:30 A.M. on Saturday, November 13.

Replacement for Joseph L. Fennell

The resignation of Joseph L. Fennell as Horticulturist, effective the first of the year, was considered. It was decided that the work he is doing on cowpeas, sorghum, peanuts, and tomatoes will be carried on. Jorge León has been doing plant introductions and will continue to do this. Dr. Allee said he would ask Mr. Casseres and Dr. Thompson to get in touch with Dr. Hoover, Regional Coordinator for Plant Introductions Work at Iowa State College in Ames, Iowa, for information on this kind of work being done in Ohio where the tomato disease problem has been attacked and certain material discarded. Dr. Hume mentioned the work in Florida on strains of tomatoes and indicated that the Institute should be informed about this. It was decided that Mr. Fennell will be replaced by a soilsman, but not until the end of the fiscal year.

Other Personnel

In connection with the Animal Industry Department it was agreed that the equipment and animals now available or to be provided during this year will demand at least an additional scientist, since the Department has only one senior staff member. It was also agreed that attempts should be made to locate such a man for employment as of July 1, 1949 and that necessary adjustments be made in the budget to permit this.

The extension training program originally included a trained assistant for Dr. D. Spencer Hatch to assist with the teaching of students accepted under the terms of the American International Association grant and others interested in extension and the improvement of rural education. This position was not filled because the unavailability of dairy equipment has held up the chief money-earning enterprise of the Pilot Farm. This is now being received, and it was agreed that, if possible, a Spanish-speaking assistant should be obtained for Dr. Hatch as of July 1, 1949.

The Committee also considered it most important to take care of visiting scientists.

Housing

At least two and probably three new positions which will be budgeted for during 1948-49 will require additional residences. We have requests at present from several able graduate students who have had to be turned down because of lack of residence facilities for families. The cacao position and several of the fellowship funds can pay annual amounts sufficient to

amortize the cost of housing. Indications are that a loan can be obtained from the National Bank of Costa Rica at six percent amortizable over five years. Dr. Hume inquired as to what arrangements would be made for security for such a loan, and Dr. Allee explained that the security would be the income from the housing. One house will be built for Holdridge, the new general field agent, and $1,000 a year would then be taken from his fund for supplying these facilities. Many G.I.'s would be happy to pay rent if they could bring their families down to Turrialba with them. Dr. Hume indicated that it would be highly desirable to have one or two unoccupied cottages for emergencies. Mr. Colom indicated that it is not out of line to ask the American Cocoa Research Institute to aid in providing living facilities for the cacao people. In reply to a question from Dr. Hume about the situation at La Lola, Dr. Allee said there is a large bachelors' quarters on the property. Mr. Bowman expects $5,000 income this year from the cacao plantings, and he will build a house this year.

The plan to attempt to obtain a loan from the National Bank of Costa Rica amounting to $20,000 to construct one house and four cottages to be amortized from rent plus other income was approved in principle with the stipulation that details are to be presented at the next Committee meeting. Dr. Allee said a definite attempt would be made to get the loan, then, and details would be sent to the members of the Administrative Committee before actually entering into the contract.

Members for the Administrative Committee and Technical Advisory Council

Dr. Allee mentioned the fact that since Dr. Mariano Montealegre, for personal reasons, has been unable to attend the past two Administrative Committee meetings, the Committee has met with only two members. Since Dr. Montealegre is filling a two-year term, he will be off the Committee next year. Dr. Hume warned against having the Latin Americans feel that the United States is running the Institute from the advisory angle, and Mr. Colom stated that attempts to secure the appointment of a Mexican representative have still had no tangible results. He suggested that the Special Committee of the Council on International Organizations should be requested to recommend to the Mexican Government that it make suggestions of likely candidates so that a Mexican could be appointed by the Council. Or, he said, the Administrative Committee might make recommendations itself as to the names of good candidates. We might send the Board a list of three names and ask them which they prefer. Dr. Buchanan suggested that this whole matter be brought up to the Specialized Committee emphasizing the fact that the Administrative Committee is very anxious to have the countries adequately represented. Mr. Colom indicated that the United States Department of Agriculture is anxious for someone from Guatemala to be included on the Committee. Dr. Hume suggested that some sort of arrangement should be made to have a permanent member from Costa Rica on the Committee. Dr. Allee mentioned the fact that since Dr. Montealegre was unable to attend the last two meetings, there have actually been only two members represented,

and there should be at least two more. Dr. Hume suggested that members from Chile, Mexico and Argentina might be desirable, and Dr. Buchanan agreed that men from these countries would give prestige to the Committee. Dr. Allee indicated that it would be a good thing to talk to Ambassador Quintanilla about getting a member from Mexico, and the other member could come from Argentina or Colombia, whichever country ratifies the convention first.

With this discussion, it was agreed that strenuous efforts should be made to secure a member from Mexico and one from Argentina or Colombia before the March 1949 meeting of the Committee.

Coffee Improvement Program

The possibilities of launching a coffee improvement program similar to the cacao program were then discussed. Dr. Allee strongly recommended a considerable increase in the amount of effort to be applied to coffee research. Toward this end, he said, the Institute facilities should be expanded with the help of additional funds outside those provided by the quotas. He proposed that a joint program be considered wherein other agencies of the American system, the producers' associations and commercial concerns combine to place coffee research and training and the promotion of improvements on a more adequate footing. As possible sources of help in connection with this program, Dr. Allee suggested the various coffee associations of the hemisphere, and Mr. Colom remarked that the Inter-American Coffee Board has ceased its activities, but some of its work has been taken over by the Inter-American Coffee Commission. Dr. Allee said it is a similar body to the Inter-American Cacao Committee, and the Institute might work through it. Dr. Hume suggested that someone in the field of coffee like Dr. Schwarz is needed to get the program started. Mr. Colom suggested Dr. Emilio Toro to fill the bill. Dr. Toro is Chairman of the Coffee Commission and also a member of the World Bank; in fact, he represents Costa Rica on the Bank. Dr. Allee said Dr. Schwarz had agreed to look into this matter and might get a copy of the proposed coffee program into the hands of some of the people who are jointly interested in coffee and cacao. One of these people is with General Foods. Dr. Hume agreed that this is one of the most likely sources of financial assistance. Dr. Allee suggested that the matter be brought up with the Special Committee of the Board on Monday.

Mr. Colom further explained that the Inter-American Coffee Commission had been in existence only about three weeks and it plans to appoint a technical man in the field of coffee who would have the same functions as Dr. Schwarz has in the field of cacao--coordinating the research efforts in this connection. He is likely to be a man in New York who is now serving with the Coffee Bureau and will have offices in the Division of Agriculture and Conservation of the Pan American Union. He is to be a top man in his field, and we might be able to secure the necessary help through him. He would be the man to approach the National Coffee Association in New York. Mr. Colom suggested that the matter be discussed with Dr. Toro and Dr. Taylor.

. Dr. Allee suggested that the proposed program be brought to the attention of the President of the National Coffee Association of the United States. All agreed on this.

Dr. Buchanan inquired as to whether the Institute has a coffee "beneficio" or processing plant and as to whether a pilot plant could not be operated in connection with the agricultural engineering work of the Institute.

Preparation for Meeting with Special Committee of the Board of Directors

The matters to be brought to the attention of the Special Committee of the Board were then discussed briefly. Dr. Buchanan suggested that Dr. Allee should give a brief resume of the work of the Institute. Dr. Allee agreed and further stated that emphasis should be placed on the fact that only $10,000 was received from the American countries, with the exception of the United States which contributes $150,000 a year, and since the Institute is an inter-American organization, all the countries should support the organization. Mr. Colom pointed out that Dr. William Manger, Assistant Secretary General of the Organization of American States, has recently been appointed Secretary of the Council and in this position he must promote the Institute in the Council. Dr. Hume said particular attention must be given to the fact that the Institute needs the support of the members of its Board of Directors. Mr. Colom added that strong measures should be taken to bring more countries into the Institute--countries like Brazil, Argentina, Colombia, etc. Dr. Allee proposed that Dr. Hume should give a brief talk on the duties of the Administrative Committee to determine the scope of the activities of the Institute. Dr. Hume indicated that the interest of United States scientists in the work of the Institute should be stressed. Dr. Allee suggested that the large number of visitors and students at the Institute should be mentioned. There are forty-three students in residence now; twenty-five of these will go to the Rural Demonstration Center.

Joint Publication of AGRO AMERICA with the American Society of Agricultural Sciences

Dr. Hume said the Institute is interested in what the Society is doing and what it would do. Mr. Colom mentioned the fact that Ernest Holt is ready to resign as president of the Society and might appoint Dr. Allee as temporary president until an election can be held. Dr. Allee wondered if this would be of any particular advantage to the Society, which, he said, is an independent thing and not an agency of an international organization. He estimated that about $10,000 would be needed to hire an editor and publish AGRO AMERICA. He suggested Armando Samper as a likely candidate for this job. Mr. Samper is a graduate of Cornell University, the editor of AGRICULTURA TECNICA published in Bogotá, Colombia, and a former head of the Economics Section of the Ministry of Agriculture of Colombia. He also remarked that some of the Latin American countries have pretty inclusive agricultural societies, and if these could be affiliated with the American Society of Agricultural Sciences, this might be a good way to set up chapters in the different countries. What is needed is a good organizer, like

Samper, who could turn out a good journal two or three times a year.

Mr. Colom said if the Society had a publication, it could collect dues from the various countries which are necessary to support an international organization. Dr. Buchanan asked if the editor might not be on the staff of the Pan American Union. Mr. Colom suggested that this person be designated as editor of the Journal of the Institute to be issued jointly with that of the American Society of Agricultural Sciences. The editor should spend part of his time in Turrialba and part of his time in Washington and would need a salary of at least $5,000 a year. However, the most important thing now is to publish one issue of the Journal.

Dr. Allee said it would take $2,000 to publish one issue of the Journal. We hope, however, to make it a quarterly this year or perhaps a semi-annual publication to come out in the spring and again in December. Mr. Colom suggested that eventually it might substitute for the monthly Information Bulletin put out by the Institute. Dr. Allee said the Journal should contain at least one or two good technical articles, the results of research done, a series of sections covering the various crop interests, a few carefully chosen book reviews, and news notes on the agricultural work of the Institute, the Division of Agriculture of the Pan American Union, the Food and Agriculture Organization, the Inter-American Economic and Social Council and the United Nations Educational, Scientific and Cultural Organization. Reprints could be made of the articles for distribution to interested persons.

Mr. Colom pointed out that until one issue of the Journal is published, we won't be able to get subscriptions for a consolidation of efforts. Dr. Hume agreed that it is much easier to get support for something that has already been initiated, and Mr. Colom added that if we can get an editor and start issuing the Journal we will have something to go on.

It was agreed that the first task is to look for an editor and get some material together even though it may have to be changed later. In seeking funds for this purpose, Dr. Allee indicated that we might ask the Rockefeller Foundation for financial assistance.

Study of Library Reference Materials Being Carried out by Dr. Ralph R. Shaw

Dr. Allee reported to the Committee on the study of reference materials in the agri cultural institutions of Latin America which is being made by Dr. Ralph R. Shaw, Librarian of the United States Department of Agriculture. The survey is being financed by the Rockefeller Foundation, and Dr. Shaw proposed to spend several months making his study in Latin America. It is hoped that when he issued his report, further financial support will follow in securing documentary and reference material for the Institute.

Survey Being Made by the Experiment Stations Section of the Land-Grant College Association of the Distribution of Publications in Latin America

Dr. Buchanan mentioned the fact that the Experiment Station Section of the Land-Grant Colleges Association has authorized a committee of seven to develop a handbook to be used by the Experiment Stations in the distribution of station publications in foreign countries. The committee consists of one person from each of the four agricultural regions of the United States and three members from the United States Department of Agriculture--one representing the Office of Experiment Stations, one the Library, and one the Office of Foreign Agricultural Relations. It has been suggested that liaison be developed where advisable with several international organizations, one being the Inter-American Institute of Agricultural Sciences for the Latin American countries. If we are asked whom we should designate to cooperate, to what extent could the Institute assist in getting the information needed. Some institutions will be designated to get all the publications of the experiment stations, some to receive selections, others to receive publications which they specifically request. Is there any opportunity, he asked, to center the attention of all agricultural institutions in Latin America upon the Institute?

Dr. Buchanan said he hoped the Institute could serve in some capacity or other for getting this information. The committee needs to know the names and essential characteristics of all of the research and educational institutions that have libraries where they can use and handle such material. It is hoped that the handbook will be a list of these institutions including enough of a characterization so that the Experiment Stations will know where to send their material and what material to send. The committee wants a list of any series of publications or bulletins issued by these institutions in order that our stations may set up a system for the exchange of publications with them. Someone will be designated as an Executive Secretary of the committee, and it might be useful to the Institute to aid in channeling this information back and forth.

Dr. Allee thought this might be a good idea since some of the Latin American institutions don't know what publications to ask for, and the Institute might indicate where they could get good material. Dr. Buchanan said one of the things the committee hopes to find out is whether the material is useful or is merely thrown out. Furthermore, he said that he was anxious for the Institute to come more into the consciousness of the Experiment Stations of the United States. Dr. Hume agreed that these things are very important, and a complete and up-to-date list of the institutions and scientific people in Latin America would be most useful. Dr. Allee mentioned the fact that the Institute is making a detailed study of all the recommendations of the American Agricultural Conferences in order to get out a list of the things the Institute has been asked to do, the progress made on the recommendations of those conferences, and the implications imposed on us as regards certain things that ought to be done. Mr. Colom mentioned the fact that the Division of Agriculture of the Pan American

Union has issued a report on the work done and institutions established in accordance with the recommendations of the various agricultural conferences.

Recommendation for a Meeting of the Ministers of Agriculture and the Directors of the Various Experiment Stations in Central America and the Caribbean Countries

Dr. Allee mentioned the fact that it would be advisable to hold a series of meetings at Turrialba of all the Ministers of Agriculture and Directors of Experiment Stations from Central America, the Antilles, Colombia, Venezuela, Haiti, the Dominican Republic, and Cuba. We have thought, he said, of asking the governments to send their people to Turrialba and the Institute would take care of their living expenses while there. It is estimated that the Conference could be held for around $500. Dr. Hume suggested that this meeting be scheduled for the coming March or April in connection with the Administrative Committee meeting. Dr. Allee agreed and indicated that a group of twenty-five might be called together this coming year.

It was agreed that plans should be made for this meeting, to be held in March or April if possible, and that the Technical Cacao Committee meeting should also be held in the early part of the year.

The session adjourned at 12:00 noon.

FIFTH SESSION

The Administrative Committee held a joint meeting with a Special Committee of its Board of Directors at 10:50 A.M. on November 15 under the chairmanship of Sr. Luis Quintanilla, Ambassador Representative of Mexico. The following were in attendance:

Members of the Special Committee of the Board of Directors (Committee on Specialized Inter-American Organizations of the Council of the Organization of American States)

Luis Quintanilla, Ambassador Representative of Mexico on the Council
Félix Nieto del Río, Ambassador of Chile to the United States
Joaquín E. Salazar, Ambassador Representative of the Dominican Republic on the Council
José Maria Bello, Ambassador Representative of Brazil on the Council
Silvio Villegas, Ambassador Representative of Colombia on the Council
Enrique Ferrer Vieyra, Counselor of the Argentine Delegation
Ricardo Sarabasa, Alternate Representative of Cuba on the Council
Jules Domond, Commercial Attaché of the Haitian Embassy
John C. Dreier, Alternate Representative of the United States on the Council

Other members of the Board of Directors:

Octavio Vallarino, Ambassador of Panama to the United States
Enrique Kempff M., Alternate Representative of Bolivia on the Council

Officials of the Organization of American States:

Alberto Lleras, Secretary General
William Manger, Assistant Secretary General

Members of the Administrative Committee of the Institute:

H. Harold Hume, Provost, College of Agriculture, University of Florida (Chairman of the Administrative Committee)
Robert E. Buchanan, Research Professor, Iowa State College of Agriculture and Mechanic Arts

Ralph H. Allee, Director of the Institute
José L. Colom, Secretary of the Institute and Chief of the Division of Agriculture and Conservation, Organization of American States

Ambassador Quintanilla opened the meeting by saying that we (the members of the Board) are very much interested in the work the Institute is doing, since perhaps the most important problem in the American Republics is the agricultural one. Among the seventy-odd inter-American organizations, we have only one which is designated entirely to that problem in which we are so interested, so anything we can do to help that organization and anything the members of your Administrative Committee can do to help us understand this problem will always be welcomed by this committee. The last time we considered your budget, he continued, we expressed certain views on different phases of your work, and Mr. Colom was very kind and helpful in explaining to us most of the points on which we wanted to know more details, and we are most delighted to meet with you today. We want to open the meeting with an invitation for you to tell us something in connection with the remarks we made on your budget and whatever else you think we should know and might be of particular interest on the work of the Institute, the results of its work, your plans for the future, and what you expect of us in order to be able to carry out your very important work.

Upon the invitation of Ambassador Quintanilla to speak on the work of the Institute, Dr. Allee suggested that the Chairman of the Administrative Committee first give a brief report on the present status of the Institute. Dr. Hume proceeded by stating that he wanted to express, on behalf of the Administrative Committee, their deep appreciation for this opportunity to discuss the problems of the Institute in which we and the members of the members of the Board are mutually interested. He said that it might be best to begin by indicating the objectives of the Institute. These have been stated as follows, and he quoted from the Convention of the organization: "The purposes of the Institute are to encourage and advance the development of agricultural sciences in the American Republics through research, teaching and extension activities in the theory and practice of agriculture and related arts and sciences." I have the feeling, he continued, that this Institute may do much for Pan American agriculture. I need not go into the details of why that is so, but I would like to point to just one example. This year the United States will have the largest corn crop in its history. It will also have a wheat crop that approaches the largest in its history, and the grain crop of the United States is possibly the largest that we have ever had. Why is that so? In part it is due to the greatness of God for sending us favorable weather, but beyond that, a large element in the production with which we are blessed is education in agriculture, and when I say that, he continued, I am summing up all of those societies that have made for the development of our agriculture. It is the application of education to the problems of that great field which in the United States began formally and actively in 1888 so that now we have the accumulated force of sixty years of educational processes and research applied to the field of agriculture. I am stating this, he said, only as indicating what may come out of agricultural education and agricultural research, and we are very much interested in applying these to all the problems of American agriculture--north, south, central, and Caribbean. That is the aim and objective of the Institute.

The Administrative Committee, he explained, was set up as a small group to assist the Institute in an advisory capacity, and we, the members of the Committee, have given our best thought, education, and time to the end that this great project might come into fruition in its application of science and education to agriculture that will mean so much. I have been with this organization, he continued, ever since its inception, as a part of the old advisory committee that put forth the plan of the Institute, and I am happy to say that very definite progress has been made. He quoted from the minutes of the Board meeting which organized the Administrative Committee in 1945 which state that "The Administrative Committee should be responsible, under the Board of Directors, for the Institute's general plan of development and the scope of its activities. The Institute shall integrate its program of research and education with those of national agricultural institutions with similar purposes so that it may not compete with these organizations, but rather conduct its activities so as to supplement the work they do and to exchange information of mutual benefit with them." That Administrative Committee has been very active.

He then directed the attention of the Board members to some of the things that appear to the Administrative Committee to be most necessary. We have had, he pointed out, technical assistance from the different Latin American countries. We have had assistance from many different directions and many different individuals in Latin America to the end that our problems might be easier of solution. We have had the help, the interest, and the definite assistance of the institutions in the United States, of which we have several or, may I say, many also interested in agriculture, so that we may draw from all these sources the best thought for the development of the work of the Institute. This cooperation has been definite and helpful in organizing the things we are trying to do for American agriculture in its broadest sense. One phase, he reported, has not been so happy. There are twenty-one American Republics, and of that number, up to the present time only ten have given their support financially by ratifying the Convention of this undertaking. I do not know how the others are to be brought into the support of the Convention, but this is one of the things in which we hope we may have the best thought and assistance of the Board to the end that the whole group of nations may be organized as a family in the support of the Institute. We have made progress at Turrialba in the five years that we have been operating. Because of the assistance that we have been given in the scientific way in those five years, we have made more progress than was made in agricultural institutions in the United States in two or three times that length of time. This has been possible because we have been able to take the things that have already been accomplished and use them as a guide and make them apply to the undertaking in which we are engaged. But we do need that assistance from all the republics, and that is one of the problems with which the Administrative Committee is concerned.

There is another phase of this to which I would like to invite your attention, he continued. So far there have been only four members in your

Administrative Committee. One member from Chile was a man of such excellent parts that he was engaged to become a member of the staff of the Institute, and we have had no one to replace him on the Committee. At this particular meeting, the representative from Costa Rica, Dr. Mariano Montealegre, was unable to join us for personal reasons. Thus we actually have only two members present for this meeting, besides the Director and Secretary of the Institute. We have sounded this thing out in several discussions so that we might indicate someone who would be interested in our work and would have the proper scientific attainments who could joing our Administrative Committee in this advisory capacity, and so far we have not been in a position to recommend anyone. We are very much interested, he continued, in augmenting this Committee from the Latin American side. We could draw upon men from the United States; many would be glad to serve, and probably the opportunities for getting someone from the United States are greater than from Latin America, because we have more trained scientists, but we do want representatives from Latin America on this Committee, and your assistance to that end would be very much appreciated.

I am going to indicate very briefly, Dr. Hume continued, some of the programs we have planned for the future. Very satisfactory arrangements have been made for investigations on the cultivation of cacao. Developments will follow that will be of tremendous importance to the tropical areas and to the chocolate trade as a whole. We are sounding out the situation with respect to a coffee program similar to the one on cacao. Coffee is a very important crop in many of these countries. Of course, Brazil is the dominating factor in coffee production, but many other areas are interested, and having looked into the possibilities of production in that field, I think there is no question that we might have just as much coffee from less land with improvements in cultivation, thus reducing the costs of production, with the exception of harvesting. We are very much interested in working out a program on coffee.

We are thinking of publishing a Journal; possibly this could be done jointly with the American Society of Agricultural Sciences. There are several ways in which we could advance interest in agriculture in the different countries; one is by the education of students. We can advance agriculture by getting a community of interest so that we may be able to pool the knowledge that is already available and we may make Turrialba a center to which the scientific workers in the various fields of agriculture would come from time to time to discuss the problems, see what is being accomplished and make plans for further developments.

We are proposing that a Statistical Service Laboratory be set up in Turrialba and have done one good piece of work in this connection by helping to make plans for the approaching 1950 census.

It was proposed at the Denver Conference that there should be cooperation in the general field of conservation, and this is a very important phase of

our agriculture--the conservation of soils so that it may be used by the present generation and passed on to future generations in as good shape as it was when the present generation took over. There is no question about the seriousness or the necessity for a proper approach to this whole conservation problem. Take the forests for example; we have done a terrible job in the United States in the handling of our forests. This mistake should not be duplicated in your countries to the end that forests should be a producing piece of land and remain as an area that is cropped. In the United States we have regarded our natural forests as something to be cut out as though it were a mining operation. We should conserve the forests, make our trees grow, and have forestry as a continuing operation. These are very serious matters in the field of American agriculture, and I hope we may proceed in such a way that the mistakes we have made in the United States will not be duplicated in many of your countries. The forest supplies of the world are taking on a new and greater importance. These are some of the things concerned with the whole problem of conservation--wise handling of the land so that it is preserved and handed down from generation to generation in good condition.

At the present time we are undertaking a study of the library facilities of the Latin American countries in the general field of agriculture. The Librarian of the United States Department of Agriculture, Dr. Ralph R. Shaw, is undertaking this for us so that we will know what are the sources of literature and what are the library possibilities so that these may be brought together eventually for the use of all.

I want to leave you, Dr. Hume concluded, with one thought in regard to your Administrative Committee. We have been to Turrialba a number of times. We have studied the situation and been in contact with the staff. The members of the staff are deeply interested in their work. They are competent in their fields, and one of the things that impressed me is that the staff is at work at 7:00 in the morning--much earlier than you gentlemen got together this morning--and they are at work until after the sun goes down. If ability promises anything, it promises tremendous success at Turrialba.

Ambassador Quintanilla expressed the appreciation of the members of the Board present for Dr. Hume's "very interesting and moving presentation of the subject". We are, he said, satisfied to know that the affairs of the Institute are in such good hands and such good brains. He enumerated the three main points on which Dr. Hume requested the assistance of the Board, and suggested that perhaps the members of the special committee of the Board might have something to say about them. First, you mention the number of countries which have given their support to the Institute, he said. This is an organization which is doing something for the good of agriculture and, if agriculture is the basic problem of our economies, then this Institute should be supported by all of our American Republics. Personally, he said, I agree with you completely. I think that when an organization is working for the benefit of all, all should work for the support and the good of that

organization. Fortunately, in our efforts to secure the support of those republics which today are not members of the Institute, we can point out the excellent job that the Institute has already done. The Institute has passed the experimental stage. It is a working outfit, and it is doing a fine job. That should be an argument in favor of bringing the rest of the American Republics to the support of the Institute. We shall have to discuss how to do this. We can do something; the special committee can perhaps make a recommendation which we will submit to the Council (Board of Directors) in such a way that it would finally bring all of the American Republics into line for the support of the Institute.

Second, he continued, there are only four members on the Administrative Committee, which, I understand, meets twice a year, once in Washington and once in Turrialba. Four members are definitely not enough since according to the regulations setting up the Committee it can have eight members. Since two of the four members are Americans, one is a Costa Rican, and the other position is vacant, your wish is that the extra members should belong to the other American Republics so that it may have as wide representation as possible. When the Committee meets, I understand, the Institute pays for the expenses of the trip, but the members serve without salaries.

At this point Dr. Hume interrupted to say that the members of the Committee need not be government officials; they might even be good farmers. He also indicated that it has been the policy of the Committee members to keep their expenses to the barest minimum--merely traveling expenses so that the finances of the Institute may go as far as possible. The members of the Committee, he reminded those present, are appointed by the Board, and Dr. Manger added that action may be taken by the Board of Directors at any time, and the last official appointments were made when the Committee was organized in 1945. Dr. Hume pointed out that the members are appointed for four years and may not succeed themselves.

Ambassador Quintanilla expressed the hope that the next time the Board met it might proceed to elect more members to the Committee, and Dr. Hume said that if the Committee itself could be of any assistance in suggesting names of possible members, it would be glad to do so. Ambassador Quintanilla indicated that although sometimes governments resent being told what to do, certain suggestions might be helpful.

The Chilean Ambassador, Dr. Félix Nieto del Río, said he could not understand how it was possible that Chile, having had a representative on the Administrative Committee, had not ratified the Convention and was not paying its quota.

Dr. Allee explained that the members of the Administrative Committee are chosen because of their ability to assist regardless of whether their countries have ratified the Convention or not.

The Ambassador from Chile stated that one difficulty, as far as ratification on the part of his country is concerned, is that the Institute devotes itself mainly to tropical agriculture.

Dr. Hume was quick to explain that this is not altogether true. One example, he stated, is that anything pertaining to animal industry, cattle, dairying, beef, poultry or swine has a wide application, and in that way the Institute touches the interests of practically every country. Also, he continued, we have a temperate area at Turrialba. The Institute proper is at 2,000 feet, and at the Irazú volcano we are up to 11,000 feet where our potato work is now being carried on.

The Chilean Ambassador declared that he would be very much interested in seeing the Institute carry out research in the fields in which Chile and other temperate zone countries are interested. Wheat, for instance, he said is not mentioned in connection with the work of the Institute.

Dr. Hume, in reply, said that we cannot get all of those things started at once. Your suggestion, Mr. Ambassador, is very appropriate, however, but we must get ourselves organized before we spread out. We are still very young.

The Ambassador said he should like to recommend that his country join the membership of the Institute.

Ambassador Quintanilla, at this point, resumed his discussion of the points brought up by Dr. Hume in his brief talk. We would, he said, recommend the journal. That would be very interesting to all of us and it would be one way to show us what you are doing and what are the practical advantages of maintaining such an organization. As to your appeal for the preservation of our forests, he added, we all agree that this is very important.

The Counselor of the Argentine Delegation, Dr. Enrique Ferrer Vieyra declared that although Argentina has not ratified the Convention as yet, it is very much interested in the work being carried out by the Institute. The ratification of the Convention has, he explained, been approved by the Senate and has been received favorably in the Chamber of Deputies.

The Representative of Haiti, Mr. Jules Domond, said he noticed that the budget of the Institute amounts to approximately $400,000, and he asked what the expenses of the institution are.

Dr. Allee said that for this year the budget is $418,000 and the expenses are approximately the same. About $154,000 of the funds come from the quotas--$144,000 from the United States, and $10,000 from all the rest of the American Republics. The remainder of our income, he added, comes from the farm, so generously given to the Institute by the Government of Costa Rica, and from grants from certain foundations.

The Haitian representative asked how the Institute planned to publish its Journal, if it was to be bilingual, and if it was to come out in French.

Dr. Allee explained that it would be published in the four official languages. The technical articles would appear in the language of their author with a resume in at least one of the other languages. The Journal would be open to subscription by those who do not merit it officially.

The Haitian representative said he was concerned about its value for Haiti since his country is the only American Republic that speaks French. However, he said he was sure that Haiti will join the Institute.

Dr. Allee said there would be resumes of the articles in French even if they didn't appear in French.

At this point, Dr. Alberto Lleras said he would like to take this opportunity to present for the consideration of the Committee an idea that he had discussed with Dr. Allee, that is, the possibility that the Board of Directors of the Institute might delegate its functions in regard to the Institute to the Inter-American Economic and Social Council which, because of its very nature, is actually in closer contact with the work of the Institute. The members of the Board, which is the same as the Council of the Organization of American States, are not always qualified to take care of the problems of the Institute, and their functions have been more or less limited to formal approval of the Institute's budget. There should be, he said, a body of a technical character to study the problems of the Institute. The members of the Administrative Committee could be integrated with some members of the Social and Economic Council who are agricultural and economic experts and might have greater interest in the problems of the Institute. I would suggest, he added, that in the contract between the Institute and the Council (Board of Directors) the Council should delegate a commission in the Economic and Social Council to be concerned with the affairs of the Institute. He then asked for the opinion of the Administrative Committee and the Special Committee of the Board on this matter.

The Haitian representative was the first to speak. I am, he said, quite in agreement with what the Secretary General has said. The Economic Council has already dealt with the Institute in regard to cacao and even held a meeting on cacao at Turrialba. It prepared a report on cacao which has been sent to all the governments. I am sure that the Economic and Social Council would be the body to deal with the work at Turrialba since agriculture is so closely related to economics, and the Economic Council would be greatly interested in its affairs.

The Ambassador of Panama, Dr. Octavio Vallarino, said that the Economic and Social Council, because of its technical interests, is much closer to the problems of the Institute than the Council of the Organization of American States.

The Argentine representative said the only doubt he had was how this might be possible according to the Convention. It would seem to me, he added, that this would impose a difficulty.

Dr. Lleras then proceeded to read Article III of the Convention which states the main responsibilities of the Board of Directors as follows: "The representatives of the twenty-one American Republics on the Governing Board of the Pan American Union shall serve as members of the Institute, and shall be considered as members of the Board of Directors thereof. In the event that any member is unable to attend a meeting of the Board of Directors the said member or his government may designate an alternate for that purpose. The decisions of the Board shall be adopted by a majority vote of its members, which majority vote shall include the votes of a majority of the members representing Contracting States. The Board shall have, among others, the following functions:

To elect the Director of the Institute and to approve the appointment of the Secretary made by the Director.
To remove both the Director and the Secretary.
To determine the compensation of the Director, who shall be responsible for carrying out all orders and resolutions of said Board.
To appoint and define the duties and compensation of an administrative committee consisting of not more than eight persons, of whom one shall be the Director of the Institute ex officio. The members of this administrative committee need not be members of the Board of Directors.
To approve the budget for the administration of the Institute to be submitted annually by the Director.
To fix the annual quotas of the Institute.
The Board shall receive an annual report from the Director upon the activities of the Institute as well as upon its general condition and financial status."

The Ambassador Representative of the Dominican Republic, Dr. Joaquín E. Salazar, agreed that the Secretary General's suggestion was appropriate, but according to the Convention, he was not sure that it was possible for the Council to take over the functioning of the Board. He was not sure that this function belonged to the Economic and Social Council, and in order to solve such problems, he suggested that the Special Committee consider the project and ascertain whether or not this purely technical problem could be worked out. The Committee, he said, could make concrete suggestions for the adoption of a new system in regard to the Institute. We must consider, he concluded, the competence of the group that is to deal with the Institute.

The Argentine representative suggested that the Special Committee might recommend to the Council the formation of a committee to deal with the Institute. Its members should be interested in economic and social affairs and in agriculture.

Ambassador Quintanilla said he was very much impressed with the suggestion made by Dr. Lleras. I believe, he said, we are all agreed that this would be desirable. The doubts are of a juridical character. Perhaps we could name a subcommittee of three persons to examine this problem. I would like to appoint the Ambassador of the Dominican Republic to such a subcommittee. He pointed out that now the Board of Directors of the Institute is no longer the Governing Board of the Pan American Union but the Council of the Organization of American States. Those who are better prepared to follow the work of the Institute are members of the Economic and Social Council who are more expert in economics and agricultural affairs. Several of these matters, as the Delegate from Haiti has said, have already been dealt with by the Economic and Social Council. It is dangerous for the Institute to have its administration handled by an entity that is not a technical body. We should find, he added, a legal manner of reconciling this matter. I would like therefore to appoint a subcommittee whose duty it would be to study the possibility of carrying out the suggestion of the Secretary General--that the Economic and Social Council should have the direct responsibility for the Institute.

The Alternate Representative of Cuba, Dr. Ricardo Sarabasa, suggested that the Special Committee should proceed slowly in this matter.

The Ambassador of Chile said he was not inclined to accept the suggestion that the Economic and Social Council should be the Board of Directors of the Institute, but since the Governing Board of the Pan American Union has actually been extinguished, it is a difficult problem as to what is the actual Board of Directors.

Ambassador Quintanilla agreed, since what actually exists today is a Council of the Organization of American States, which constitutes a change not only in name but in functions from those of the Governing Board of the Pan American Union. Juridically, there is a question as to what is the Board of Directors of the Institute today on the basis of the Convention. He then asked the Director of the Institute for his opinion on the matter.

For the benefit of the members of the Administrative Committee, Dr. Allee explained that the suggestion is that the Economic and Social Council of the Organization of American States should serve as the Board of Directors of the Institute as delegated by the Council of the Organization of American States. That would seem to me, he continued, like it has the advantages mentioned by the various members of the Special Committee. I feel that the Institute should serve as the instrument for research, graduate education, and extension for the Organization of American States. Its problems would be discussed by the Economic and Social Council, and since its members have a more direct connection with the Institute this arrangement might be more advantageous. On the other hand, I see the legal difficulties involved, but I trust that these might be settled so that the Institute might not lose its connection with the Council of the Organization of American States in any respect.

Ambassador Quintanilla then said he would like to appoint the Ambassador of the Dominican Republic, the Representative of the Argentine, and the Ambassador of Chile as a subcommittee of three to study the feasibility of the proposal made by the Secretary General of the Organization of American States.

The Ambassador of Chile declined to accept the appointment because of other pressing duties, and the Representative of the United States was then appointed in his place.

Ambassador Quintanilla then said he would like to call attention to a problem not only in connection with the Institute but will all the institutions receiving support from the American Governments. I feel, he continued, that the private grants detract from the work of an organization that is governmental. The receipt of these grants should in no way determine the work of the Institute. He called particular attention to the grant of $20,000 made to the Institute for the development of facilities for study in the field of animal climatology and quoted as follows from the agreement between the Institute and the King Ranch:

> "A further Memorandum of Agreement between the two organizations provides for the King Ranch's furnishing from fifty to seventy-five head of first-cross Santa Gertrudis Hereford-Brahma heifers over a period of three years and sufficient Santa Gertrudis bulls to go with them, and necessary bulls for replacement needed during a period of ten years. These animals are to become a part of a mutually agreed breeding program, the object of which is to use the Santa Gertrudis breed to grade-up and develop a uniform and suitable breed of beef cattle for tropical climatic conditions.
>
> "The King Ranch also agrees to furnish one stallion and five mares of the Quarter Horse breed of the type developed by King Ranch to be used in a horse improvement program mutually agreed upon. These animals are to be used (1) to increase the number of purebred Quarter Horses, (2) to crossbreed to Criolla mares of the Argentine or of Chile, and (3) to crossbreed to local Costa Rican type mares."

The donors of the cacao grant, he continued, have taken the same precaution of stating exactly what their funds are to be used for. These grants are useful, he said, but they should not in any way, either directly or indirectly, force the Institute to focus so much attention on these projects that they might eclipse the regular program of work of the Institute which should be for the common good of all the member countries.

Dr. Allee agreed that this is a real problem. The Chairman, he said, has made a very significant comment. It is, of course, an accepted principle that public institutions such as our own, do receive funds from foundations and other private sources, but it is also true that, these funds must be accepted only under certain conditions, and they are under the control of

the Institute and not under the control of the donor. To be sure, they are given to us under certain conditions, but aside from that, the choice of personnel and direction of the work must remain always under the direction of the Institute. The funds received must be used for a part of the work of the institution; otherwise, they would divert us from the regular work of the Institute. These two main things have been set up in the policy of the Institute. Even following these two safeguards, however, if the time should come that a larger part of our funds should come from extra-official sources, there is the possibility that we would be influenced by these sources. I trust that this will not be so, since I was appointed by this Board to run this organization for the American Republics. Last year's expenditures were $418,000. $144,000 came to us from the United States, $10,000 from all other American Republics, and the remainder from private sources and our farm. That proportion, he concluded, to me is dangerous, although I assure you that we will not allow ourselves to be diverted from our purpose--however, as a matter of principle, he repeated, that is a dangerous proportion.

Ambassador Quintanilla said that this year the proportion will not be that bad, since we assume that all the countries will pay their quotas. According to this, the Latin American portion is $40,000.

Mr. Colom clarified the matter by stating that next year the Institute will not receive as large a sum of money from the American International Association as is included in the budget for this year. The income from the private sources will be reduced next year so that the income from the governments will be proportionately higher.

Dr. Hume then suggested that the members of the Special Committee might like to hear something about the educational work of the Institute.

Dr. Allee said that since he had reported to the group at rather great length last year, he proposed now to mention only a few of the changes that have taken place since that time. We have greatly increased our work on cacao, he said, and have been very fortunate in employing Mr. George F. Bowman as director of the cacao research program. Dr. J. Harvey McLaughlin has been accepted as a pathologist in that program, and Dr. Leslie Holdridge, a forester with many years of experience in the tropics, has also been employed. Mario Gutiérrez, who has been studying corn breeding at Iowa State College for the past two years, will take up that work at the Institute. The total staff amounts to thirty-six people--twelve in the Plant Industry Department, three in cacao work, five in Animal Industry, three in Agricultural Engineering, and seven in Agricultural Economics and Rural Life. Dr. D. Spencer Hatch has been appointed to direct our Extension Service and he is assisted by Mr. Carlos Valle. We have at present fifteen graduate assistants--young men trained in agriculture at least to the Ingeniero Agrónomo degree and in most cases to the Master's degree who are part-time members of the staff. Most of them come from the Latin American countries.

The physical plant of the Institute has been increased. At the last meeting I stated that we had fifty buildings which cost something over a million dollars. During the last year we have completed most of the Animal Industry Department buildings, including a creamery, etc.

We have increased the laboratory somewhat and have today in the fields it covers as good a functioning laboratory as exists anywhere. We have in the past two years managed to invest about $30,000 in our laboratory equipment. We have made increases in our transportation equipment and other items. Of the 1,000 hectares in our central plant, 185 are in cane, 135 in coffee, 105 in various kinds of experimental plots and other uses. We have a cacao substation in the lowlands consisting of fifty hectares of which forty are in producing cacao. That farm was made available by the United Fruit Company. The projects to which we are going to give increased emphasis in the immediate future include coffe, which we feel is extremely strategic and should be expanded in the next year, basic food crops, and increasing efficiency in dairy and beef production. In the field of engineering our chief emphasis now is on the drying and storage of grains. It is progressing satisfactorily and we will have significant results to report to the republics by the end of this year. That department is also working on conservation, construction, and the properties of tropical woods. The rural life program has expanded its program in the integrated approach to the study of rural communities. This program will produce results of great interest to all concerned this year and will make some fundamental contributions to social science itself.

Dr. Buchanan then proceeded to make a brief report. I think you all recognize, he began, that from the time of the Renaissance the great duties of educational centers have been subdivided under three headings. These centers should add to human knowledge through research. They should train students, and they should be able to channel the information which they secure to all the people. Education is for the advancement of standards of living for all people. At Turrialba we have a unique institution designed to carry on this kind of work. We are already doing a significent job in the field of research. The Institute embraces all of agriculture and the sciences which are basic to and important in the field of agriculture. By our very name we are directed not only to do the practical things but to go to the root as much as possible.

I am interested in the significance of the Institute to the temperate areas, he continued. The United States, Brazil, and Chile have large areas which are not tropical. It would be unfortunate to think of Turrialba as being only a tropical agricultural institute. Because of its location there should be a very great emphasis on the tropics which include that area of land which is going to be most significant for the development of an adequate food supply for the world since it is still our greatest undeveloped area. To the extent that it is able to do fundamental research it will profit all of the Americas, all of the world as a fact. This will have repercussions from Patagonia to Alaska in this hemisphere. There are many things which

can be contributed through a station such as Turrialba which are basic. There is a building under construction for the study of animal climatology. Anything that comes out of the Institute as to the effect of climate, temperature, etc., on animals will be of interest to the whole hemisphere. In Central America we have the home from which many of our plants have come. In one sense tropical agriculture was the origin of corn. Today we have the greatest crop of corn grown in a temperate climate. Three hundred million bushels of this tropical plant are being grown in the United States this year. We in the temperate zones have a direct interest in a tropical institute of this kind.

There are three types of students that come to us. We have the job of training a certain group on a most advanced plane. We must have individuals who are well trained in the basic sciences and are able to apply them in particular fields. Many of these are primary fields for the tropics, but others affect all of us. We have quite a program for the training of these individuals. The Institute is not a university where you can get instruction in all of the basic sciences. It is not in competition with the great universities which are found in all the American countries. It supplements them in some ways in that students come to us for special training in particular fields. We can give that and are giving it in a very fine way. The students, as well as the staff, get up early and work late, not because they are forced to do it, but because they are so deeply immersed in their problems and so much interested in the things they are doing.

There are fifty-three students enrolled in the Institute this year, and the walls are bulging in taking care of that number. The Institute is an isolated organization and must take care of them. Until we can enlarge our facilities we must limit the number of students we can accept. The second group of students are those who wish to make the Institute the end of their education. They are graduates of colleges and universities in the various countries and have a particular interest in agriculture. They come as candidates for a degree which is granted by the Institute--Master of Agriculture. We have quite a number of students working towards this degree. (Dr. Buchanan passed around a draft of the diploma to be granted by the Institute, and the Special Committee members seemed favorably impressed.)

We have a third group of students who are being trained primarily to help get information out into the field--the training of students for the extension field. This is not a duplication of the very fine work being done at Zamorano in Honduras. These students come to us on a somewhat higher level, but they are being trained in a practical and significant way to go back to their countries with a knowledge of the techniques developed in all of these countries. They will go back to what we in the United States, for the lack of a better phrase, call extension work--anything that has to do with the getting of scientific information actually into operation in the field. What we are endeavoring to do is to help raise the standards of living among all of the people. The students are from eleven different countries.

We have developed a very creditable library which is growing rapidly. It must be a center in any educational and research institution. We have some 15,000 volumes at the present time, and the number is going up. We much need not only English material but a better collection of material from the Latin American countries. The Librarian of the United States Department of Agriculture is now endeavoring to set up a system of appropriate exchanges in the United States with those libraries in the rest of the world. We are looking to the Institute to evaluate the publications which the institutions in Latin America should receive from us.

The work of the Institute centers around four main divisions or departments--Plant Industry, Animal Industry, Engineering, and the economic and social sciences, and all of these function in research, in teaching, and in extension. We also are becoming increasingly an institution in which there are many visiting scientists. We have a long list of distinguished individuals who have come to the Institute in the past year. Here is an excellent place for them to pursue a hobby which fits directly into the program of the Institute. These have been most valuable to us. We have had a man interested in potato breeding. We are very much interested in the development of a center in Central America in which we can maintain a center of all the species of potatoes. We need a laboratory for germ plasm of the various varieties.

The Institute is a going concern. It has a fine group of excellent students, individuals who are getting excellent instruction and will be a great advantage to the countries in the Americas from which they have come.

At the conclusion of Dr. Buchanan's talk, the Haitian representative said he would like to say a few words on soil reclamation. This should be, he declared, a particular point which Turrialba should take up, since this is something that is badly needed and would be a good thing for all the American countries. Haiti, he said, has a lot of alkaline soils, and it would be an advantage for all the students to know about the different crops grown in all the American countries.

Dr. Buchanan said the Institute has a course in the basic agricultural sciences, but we don't know how it applies to particular localities. We get at certain basic truths in the laboratories but don't know whether they will fit in the field or not. It will be necessary for the Institute, in cooperation with the various agricultural experiment stations and the various countries to instruct local areas or experts where particular subjects can be studied. With reference to the transfer of the information we have accumulated in the temperate climates to the tropical countries, it has been said that there is no reason why soils in the tropics are so different that technology can be transferred only to a limited extent.

The Brazilian Ambassador inquired as to whether the Institute makes studies of the pests that attack plants and animals.

Dr. Buchanan replied that in the Plant Industry Department we have a very competent plant pathologist who will be able to recognize and diagnose the specific difficulties and to find out if possible the weak link in the growth stages of the particular parasites which will make it possible for us to attack them satisfactorily. One of the problems that is of important concern at the lower altitudes in much of the Caribbean area is the tórsalo in cattle. We have a very active program on this, and the new assistant to the chief of our Animal Industry Department is to concentrate on studying the diseases of animals. Dr. Buchanan pointed out that on his own staff at Iowa State College he has over 300 staff members including specialists in rather finely divided fields, but the Institute does not have a large enough staff, and it is up to Dr. Allee to see that we attack the most important problems and produce cattle and milk for the tropics--the necessities of life so to speak.

Ambassador Quintanilla said that it is to be hoped that the Institute will have some regional areas to do work so that it may be carried on in other countries as well as in Costa Rica.

The Chilean Ambassador asked the Administrative Committee if, as technicians, they were optimistic regarding Latin America in the field of agriculture.

Dr. Hume emphasized strongly the fact that the possibilities are unlimited. Two American plants, he illustrated--rubber and quinine--were taken away from the Americas where they originated. What was done with them in the Far East was done because of research--knowledge and education applied. This can be done to the whole field of agriculture in Latin America. We can simply lift it up and the people along with it.

The Alternate Representative of the United States, Mr. John Dreier, declared that for many years he has had an interest in agriculture and has followed the work that the Institute is doing. I am also extremely interested, he continued, in inter-American cooperation as a subject in itself. I was extremely interested to note the many times the speakers at this meeting have spoken about the contributions of the people and the plants of the American Republics to the solution of problems. In every field you get the dramatic picture of the drawing together with the plant and soil resources of the whole continent to accomplish things which cannot be done by any one country alone. Here we have an extremely stimulating and impressive example of the countries working together to do something they cannot do alone.

Ambassador Quintanilla then thanked the members of the Administrative Committee for their interesting comments on the work of the Institute, expressed the great interest of the Board in the organization, and adjourned the meeting at 1:00 P.M.

PROGRESS REPORT

PLANT INDUSTRY DEPARTMENT

Manuel Elgueta

PERSONNEL CHANGES

There are several changes of personnel to report since the last meeting of the Administrative Committee:

Mr. Mario Gutiérez is back after two years absence. He is initiating his program in corn.

Mr. Napoleón Murillo resigned to accept a government position. His loss has left us without a man to carry on the sugar cane program. Up to now we have not been able to replace him, and we will have to abandon the program for the present, maintaining only the trials underway.

Dr. H. C. Thompson, Head of the Department of Vegetable Crops, Cornell University, arrived in September to spend a sabbatical leave of six months with us. He will help us very much in developing the vegetable program underway.

Mr. Joseph L. Fennell has unfortunately resigned. His resignation becomes effective as of January first. He will, however, leave the Institute the first part of November, taking advantage of accumulated annual leave.

Dr. J. Harvey McLaughlin has been appointed to work under Mr. George F. Bowman in the cacao program. Dr. McLaughlin is a pathologist, and this addition to the staff means much to the development of the program.

Still another worker will be added to this program, and it is possible that Dr. L. R. Holdridge will accept a position. Dr. Holdridge has had wide experience in tropical research, and his addition to the staff will also be very important.

Definite arrangements have been made also to transfer Mr. Jorge León to serve full time in the Department. With this it will be possible to give definite form to the work of the Introduction Section and begin the herbarium work.

Members of the staff have traveled during this period. The Head of the Department. accompanied the Director to the Forestry Conference at Teresópolis, Brazil, and to the Hylean Amazon Conference at Iquitos, Perú. To take complete advantage of the trip he visited the research work in Perú, including the Tingo María Experiment Station. This trip was extended to Argentina and Chile in order to visit and get acquainted with the work being done in these countries.

Mr. Manuel Elgueta and Mr. Jorge León received invitations to attend the Inter-American Conference on Conservation of Renewable Natural Resources held at Denver, Colorado, from September 7 to 20. Advantage was taken of this trip by both attendants to visit some work of special interest for the Institute programs. Mr. Elgueta visited the College of Agriculture of Louisiana State University, the Rice Experiment Station at Crowley, and the Sugar Experiment Station at Houma. He had the privilege also of visiting the College of Agriculture and Experiment Station at Ames, Iowa, some sections of the Plant Industry Department at Beltsville, and the College of Agriculture of the University of Florida.

Mr. León visited the herbarium of the Chicago National Museum to establish contact for his future work, the Smithsonian Institution, and the Forest Service in Washington.

Mr. Ernest H. Casseres attended the annual meetings of the Horticulture Society at Cincinnati, Ohio, and has taken advantage of this trip to make arrangements for completing his University work for his Doctor's degree.

Mr. George F. Bowman has been requested by the American Cocoa Research Institute to inspect the Liberia project and is ready to go to Africa the first of November. He will take advantage of this trip to visit the work at Trinidad and at Belem, Brazil.

The work of the different sections has been reported in the Annual Report, which covers up to June 30 of this year. Short comments on the actual working being carried on in the different projects follows:

INTRODUCTION AND FORAGE PLANTS
Jorge León

This section will be completely reorganized taking advantage of the full time work of Mr. León for the Department. Importance will be given to the completion of the arboretum giving emphasis to adaptation studies of varieties of fruit trees. One of the foremen is a competent practical horticulturist, and we are trying to train him in pruning, grafting, propagation and the care of fruit trees.

The forage plants collection will be increased and transferred to the field where the arboretum is located so as to make a unit of the whole section. Work on the herbarium has already begun but will be intensified. Mr. León is giving a course in taxonomy, and we will take advantage of this to develop the herbarium.

FERTILIZATION TRIALS

All of the trials on annual plants are finished, and the results are very interesting and quite coordinated. The effect of phosphorous is out-

standing in almost all of them. We must complete this series to get definite results. However, we have a shortage of personnel which will make it difficult to get on with this program.

GENERAL HORTICULTURE
Joseph L. Fennell

With the regrettable departure of Mr. Fennell in November, we will be obliged to reorganize this section. The tomato work will be turned over to Mr. Casseres' section. A complete inventory of the material has already been made, and a project has been prepared revising the objectives of the work. One of the students of the vocational program is already working on this material, and Dr. Thompson is willing to help develop the new project. The sorghum and cowpea work will go to Mr. Mario Gutiérrez' section. As soon as an inventory is made of the material a project will be prepared to redefine the work to be done. All the other material of Mr. Fennell's work will go over to the Introduction Section to be maintained as a collection under observation.

VEGETABLE CROPS
E. H. Casseres

Importance will be given to the testing of potato breeding material from Dr. Stevenson of the United States Department of Agriculture and from Cornell University.

During the trip to the United States, both Mr. Elgueta and Mr. Casseres came to an agreement with Dr. Stevenson to receive breeding material periodically. Much of this material does not show adaptation to the conditions there but can be of value for our conditions. Besides, they have at their disposal parent material that will be difficult for us to get and we can take advantage of their work for our own breeding.

The vegetable variety work is underway and is giving interesting results in finding varieties adapted to our conditions. This work is being complemented with a commercial garden under Mr. Victor Morua. In this garden, special emphasis is being given to the continuous production of vegetables which are sold to the dormitory and to the staff.

CORN
Mario Gutiérrez

Work on corn has just started. Several large plots are being grown covering a total acreage of about 2 hectares. Selfing is just beginning, and the whole program of testing different breeding methods is underway. Emphasis will also be given to solve some of the main problems of corn growing in these regions. One is lodging which is universally prevalent. A study will be made of its main causes, and an attempt to transfer the characters for better root growth to our adapted material will make it possible for us to take a step toward the solution of this problem.

CACAO
George F. Bowman

The cacao program is being developed actively. During this period, emphasis has been given to student training, especially because the whole program with twelve students is under the direction of Mr. George F. Bowman with only the part-time assistance of Dr. Wellman on disease investigations. Each student has his own project and is working on it. The research program of the Center will be given great impetus by the arrival of the new workers who will be added to the program, as mentioned in the beginning of this report.

The house at Finca La Lola is already completed, and its use has facilitated the work of the students who go there every week. Now they are able to do a full day's work in the finca because the house is located near their work, and they do not have to spend time traveling by train.

SUGAR CANE

The loss of Mr. Murillo has left this program without a leader. The trials underway are, however, in very good condition and we will be able to get interesting results from them. The harvest of the variety and fertilization trial is, however, very complicated, and we will have to have some extra help when the time comes in November. Some discussion has been going on to get a worker from the Ministry of Agriculture on loan for this work as a start of a cooperative program.

COFFEE
Guillermo Bonilla

We have been fortunate in having the visit of Dr. W. H. Cowgill, who has been devoting several years to coffee work in Guatemala for the Office of Foreign Agricultural Relations. We reviewed the whole program with him, and even if we disagreed on some technical aspects, the discussions were of much importance in raising many points of interest.

At this time we are harvesting all the trails on old plantations. The harvest will not be finished until the first part of January.

Six hectares were cleared to begin new trials. There we will begin the collection of shade trees of which we have plant material of about twenty-five species. This collection will be established in the form of observation plots of nine shade trees each and twenty-seven coffee trees under them.

We have also a trial of planting distances which will be started in the same locality. Work has begun in the nursery which will be artificially shaded. The graduate student Mr. McFarlane is studying the performance of selected trees. We have also selected thirty trees on our finca and more will

be selected on fincas around San José. We will take advantage of all these selected trees to collect some seed and start with these progeny studies. As far as we know, coffee accepts self pollination, and, on the basis of his observations, Dr. Cowgill believes that it is autogamous, fertilization being effected the moment the bud opens. We will have to investigate this assertion, but if this is the case, pure line selection will be the best possibility for coffee. With this in mind we will grow the seed of the selected trees to be able to start a pure line selection program with an ample basis if the autogamous condition of coffee is proved.

The work in Cabiria Finca has progressed satisfactorily. The whole finca has been cleaned, the trees have been pruned of old branches, and the replanting of lost trees is actively in process. This year harvest will be low, because of the abandoned condition in which the finca was maintained until now, but we believe that regeneration will take place as has been the case in the part of the finca where the agronomic trials are located.

PHYTOPATHOLOGICAL PROGRAM

Dr. Frederick L. Wellman has been advancing his program actively. He has contacted the Minister of Agriculture under instructions from his office to help them in their program. One student has just been designated by the Ministry to be trained under him.

USE OF CHEMICALS IN CROP PRODUCTION

One of the students under this program, Mr. Milton Gertsch, finished his work and left to continue his studies in the United States. He was replaced by Mr. Joseph R. Orsenigo. Many trials have been made in different crops, including coffee. There are some very definite results of weed control in corn, with pre-emergence treatments. Deformation effects on leaves of coffee have been observed with the use of 2-4,D.

November 3, 1948

PROGRESS REPORT

ANIMAL INDUSTRY DEPARTMENT

A. O. Rhoad

CONSTRUCTION PROGRAM

In the seven-month interval since March 1948 the Animal Industry Department has been actively engaged in several fields. The greater portion of the time of the Head of the Department has been taken in the construction program from actually designing new structures to general supervision of construction underway. In this interval an eight-room frame residence for the head herdsman has been built, the slaughter house started and about eighty percent completed; a farm implement shed started and completed, a sub-foreman's frame residence started and completed; construction of a quonset hut completed, and plans drawn up for and construction started on a horse barn. Also, plans have been drawn up for a climatological laboratory. The horse unit and the laboratory are being constructed under the King Ranch grant.

EXPERIMENTAL PROGRAM

In the experimental program of the Department a considerable expansion in the investigations on the control of Dermatobia hominis (tórsalo) has been possible through the cooperation of Dr. John T. Creighton of the University of Florida. Dr. Creighton, an eminent entomologist, was at the Institute from June 15 to August 16. In this short time he initiated various experiments and has since sent one of his graduate students, Mr. William Neel, to carry out these and other experiments. Mr. Neel is at the Institute under the Esso fellowship program. Dr. Julio Mesa Salazar, parasitologist of the Ministry of Agriculture of Colombia, is a visiting scientist studying and assisting in the tórsalo control project.

In August, Mr. Dale E. Madden, graduate student, completed his work for the degree of Master of Agriculture. For his research project Mr. Madden conducted a feeding trial on the use of coffee pulp silage as a food for cattle. A summary of this is attached.

In the experimental program, two studies have been completed and another is underway. The Head of the Department completed a study on the development of the Santa Gertrudis cattle and another on heat tolerance in livestock. The latter study was read under the title "Breed Differences in Heat Tolerance", by invitation at the First International Congress of Physiology and Pathology of Animal Reproduction held in Milan, Italy from June 21 to 30, and the former was read by invitation under the title "The Genesis and Genetics of the Santa Gertrudis Breed of Cattle", at the Eighth International Congress of Genetics held in Stockholm, Sweden from July 7 to 14. These congresses were attended by the Head of the Department at no cost to the Institute.

Another study is under way on the records obtained from the Mindi Dairy Farms, Cristóbal, Canal Zone, Panama. This study is made possible through the cooperation of the Quartermaster Department, Canal Zone authorities. This study is also a research project of Sr. Guillermo Narváez, a graduate student in the Department from Mexico.

TRAVEL

Considerable travel by the Head of the Department to member and other countries was necessary. In March he was in Panama to judge livestock at the Exposición Nacional de Agricultura in David. In April he went to Havana, Cuba, for the same purpose and also visited Texas and Florida during the same month. While in Texas, he addressed the agricultural student body of the Texas Technicology College at Kingsville. At the invitation of the State of Florida he addressed the Annual Cattlemen's Field Day at the Range Livestock Experiment Station, Ona, Florida. These official trips were made at no cost to the Institute. During the two weeks of June and all of July the Head of the Department was in Europe attending various international congresses (see above). In September he visited Panama in a private capacity, but while there he addressed the graduating class of the Agricultural College at Divisa and also obtained the cooperation and data from the Canal Zone authorities for the study mentioned above.

PERSONNEL

There are three possiblities at present for filling the position of project leader in animal nutrition and climatology and assistant to the Head of the Department. They are as follows:

Dr. Jorge de Alba, Mexico. B. S., Maryland, M. S. and Ph. D., Cornell, 1945. Since 1945 to the present he has been managing a large ranch in Mexico. He is now desirous of obtaining a position with research or educational institution in Latin America. He has a family.

We have on file, letters of recommendation from Professor Asdell under whom he worked and from Professor Turk, Head of the Animal Husbandry Department, Cornell University. He has published at least one scientific paper as co-author with Dr. Asdell. We have recently contacted Dr. de Alba concerning this position. To date we have no reply.

Sr. Jorge Rojas Puccini, Venezuela. B. S. in Agriculture, Puerto Rico, 1941; M. S. in Dairy Husbandry, Texas A & M, 1947. Experience: 1941-42, Assistant, Animal Husbandry, Agricultural Experiment Station, El Valle, Venezuela; 1942-44, Superintendent, Livestock Experiment Farm, Las Delicias, Maracay, Venezuela; 1947 to present, Animal Husbandman, Ministry of Agriculture, Caracas. He has not been contacted regarding this position. He has a family.

Sr. Einar Alberto Kok, Brazil. Ing. Agron., Brazil, 1937. Took graduate courses at Texas A & M, 1940, and California on a visiting fellowship. He has published more in animal nutrition than any other worker in Latin America. He is now with a private agricultural industrial concern, and he has a family. We have contacted Sr. Kok on this matter.

The position of creamery foreman is also open, and the following candidate is under consideration:

Hernán Sobrado Hurtado, Costa Rica. B. S., Wisconsin - Dairy Manufacturing. He has had summertime experience with butter and cheese manufacturers and with several milk plants in Madison. He is presently employed by the Institute of Inter-American Affairs, and is a consultant with several firms in San José on ice cream manufacturing. He is the best qualified person for this position that has been interviewed to date.

LIVESTOCK

During this seven-month interval, a nucleus herd of pure-bred Brown Swiss and Jersey cattle has been added to the Department herds. These cattle were purchased within Costa Rica at a considerable saving to the Institute. Additions to the pure-bred Holstein Freisian and native "Mysol" cattle are being sought at the present writing.

November 3, 1948

PROGRESS REPORT

AGRICULTURAL ENGINEERING DEPARTMENT

Norton C. Ives

PROJECT NO. 50 TILE DRAINAGE

Another section of drain tile was installed in the remaining half of the twenty-five acre experimental drainage field, and the area is now ready to plant to a good cover crop in an effort to renew this apparently dead soil. Plans are being developed to move the cover crop plots to one end of this area A crop of about 200 bushels of corn was harvested from about eleven acres of this area in July. This corn was put in a temporary crib to study ear corn storage and to preserve it for later use in drying studies. This is discussed under Project No. 58. No more run-off data are to be taken until the automatic recorders arrive and are installed.

PROJECT NO. 53 SOIL EROSION CONTROL PLOTS

Run-off data and cropping are being carried on according to plan. Recent data are yet to be analyzed, but all that has been analyzed indicate that there is no run-off of either water or soil on these slopes up to 45 percent. Soil profile samples were collected from both the drainage field and erosion plots and were sent via air express to Dr. Buckman of Cornell University for complete physical and chemical analysis, which he offered to make by way of cooperation with the Institute. The results have not yet been received.

PROJECT NO. 57 LUMBER STUDY

All laboratory work has been completed for the some thirty odd commercial species of lumber in Costa Rica. A final write-up of the work to date awaits only the time to do it.

PROJECT NO. 58 GRAIN DRYING AND STORAGE

This project has received major attention in the past few months. Quite detailed studies and plans were made during the summer, and immediately after the beginning of the new fiscal year materials and equipment were purchased and ordered. A temporary 200-bushel corn crib was built in July. A 1000-bushel grain bin with special provision for drying was designed and built in July and August. A sack-type drying unit was designed and built in September. A forced-heated-air drying unit, ordered from the American Crop Drying Equipment Company, arrived on October 21, and on October 27, 28, and 29 the first test run was made with sixty-four sacks (approximately 200 bushels) of long-grained

Rexoro rice, which was trucked from the San Carlos Valley through the wholehearted cooperation of the Rojas brothers, who are vitally interested in a rice drying setup for their two (and more to come) combines. This first run went surprisingly well, considering the usual difficulties encountered in attempting to do such work on schedule in this remote place. According to sack weights before and after, 1,666 pounds of water were removed from 9,878.5 pounds of what checked to be about 24 percent wet basis rice at a fuel consumption of thirty-two gallons and fourteen hours of operation. According to preliminary figures the rice was dried from 31.5 percent to 9.3 percent dry basis. This is 24 percent to 8.5 percent wet basis. It was intentionally dried to this unnecessarily low moisture content for study purposes. Data are yet to be analyzed, and arrangements have been made for another truck load to come on October 30 or November 1. This will make 400 bushels available to do experimental work with the 400-bushel bins. It is planned to recondition this rice several times for experimental purposes by simply blowing night air through it for the necessary number of consecutive nights. Germination, milling quality, and moisture tests will be made in all phases of the study.

A 1000-bushel Butler steel bin, which was furnished gratis to the Institute by the Butler Manufacturing Company, arrived about a week ago and will be erected next to the seed house. It has a special false floor designed for forced-heated-air drying.

A wagon type drier is to be constructed and tested for forage (sorghum tops) and grain drying.

Considerable study has been given and special attention is planned to be given to a rather special system of drying by using a heat pump, which would in effect partially dehydrate the air as it passes the refrigeration coils maintained at a temperature just above freezing, then the heat of condensation absorbed by the refrigerant would be pumped to the heating coils or the condenser over which this dehydrated air would be passed to be raised in temperature, probably to 100 or 110 degrees. Such an apparatus appears to have excellent possibilities in this highly humid, moderate temperature air, and it would seem to be adaptable to a rather wide range of conditions. This will require much study, work, and undoubtedly some special funds for consulting personnel and equipment.

OTHER ACTIVITIES

In addition to the project work, a complete set of carefully prepared plans for the new type of Institute residence has been prepared. Also a general purpose two-wheeled trailer was designed, two were built and tested, and a final plan was prepared which is available for distribution. Please refer to the annual report for more details and pictures of this work.

Largely through the cooperation of Dr. Buchanan, excellent contact has been developed and maintained with the Ford Foundation for a special grant

to set up the Agricultural Engineering Department, but at this writing nothing definite is in sight.

October 29, 1948

PROGRESS REPORT

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL LIFE

Julio O. Morales

RESEARCH PROJECTS

The Department has the following research projects open:

1. Community Project

   (a) Sociology and Anthropology Sub-Project
   (b) Census Sub-Project
   (c) Home Economics Sub-Project
   (d) Economics Sub-Project

2. Labor Income and Cost of Production Study on Coffee Farms

3. Study of Coffee Processing Plants

4. Study of Sugar Cane "Trapiches"

5. Prices of Selected Farm Products

6. Intercropping of Rubber Plantations

7. Economic Problems of Cacao Production

Projects 3, 4, 5, and 7 have been inactive during the last six months. Project 6 will be closed in two months, when the publication will be ready. Work will be continued on Projects 1 and 2, but Projects 3, 5, and 7 will also receive attention. Project 3 will be active, in preparation for the arrival of Mr. Gómez, the Colombian student, from Michigan State College. Projects 5 and 7 will be primarily in the hands of two students, Messrs. Perreault and Oechsli, respectively. Another student, Mr. Reed Powell, is doing most of the work on the Sociology and Anthropology Sub-Project of the Community Study, and Mr. Alvaro Vindas is getting ready to take over when Mr. Powell leaves.

It is obvious that students will be able to take responsibility for a large sharge of the research job. In accordance with this plan, we have to keep open a larger number of projects than would be the case in a strictly research institution. It is also important that a constant flow of able, well-trained students be maintained. With the present staff and other facilities we can handle effectively a group of five graduate students.

GRADUATE TRAINING

The Department has three types of students:

1. Candidates for a Doctor's degree who come to the Institute to work on their Ph.D. thesis, under our direction (Mr. Powell).

2. Students who take our orientation course for five months, then go to a university to take basic course work in their field of specialization, later returning to the Institute to work primarily on their thesis problem. (Messrs. Gómez, Castro and Vindas).

3. Special students who come to the Institute to get experience in conducting research in their fields of specialization and requiring no basic course-work training. (Messrs. Oechsli and Perreault).

The Department shared with the Plant Industry Department the responsibility of conducting the Statistics Course. It also contributed its share of seminars and lectures in the other two formal courses.

In order to furnish instruction of the type discussed under the second classification above, it has been necessary to find universities willing to grant scholarships or fellowships to these students for the period required to take the necessary course work. We have been successful, thus far, in getting Montana State College, Pennsylvania State College and Michigan State College to grant one fellowship a year for this purpose. Cornell University has been approached with a similar request, but a final decision has not been reached. Mr. Gómez is in Michigan, Mr. Castro in Montana, and Mr. Vindas will go to Michigan. We have to find a candidate to fill the Pennsylvania State College Fellowship. Selection of students, funds for fellowships at the Institute and ways to finance the student's transportation to the United States are the present "bottlenecks". As soon as these are cleared we will be ready to establish the smooth flow of five students we desire.

VISITING PROFESSORS

Dr. W. E. Keepper, Professor of Farm Management and Land Economics of Pennsylvania State College, has been with us for the last three months. He is working on the Labor Income and Cost of Production Study on Coffee Farms.

Dr. John A. Hopkins, Agricultural Attaché of the United States to Mexico, visited the Institute during the latter part of October to discuss the translation into Spanish of his book Elements of Farm Management. It will be recalled that this is the result of Dr. Eckert's visit to the Institute last year.

CONFERENCE ON POPULATION AND AGRICULTURAL CENSUS TECHNIQUES

The Department, in cooperation with the Costa Rican Government, organized and conducted a Conference of Delegates from all Central American countries and Panama on Population and Agricultural Census Techniques. The Trial Census of the Central District of Turrialba, part of the Community Project, served as practical experience of the subjects discussed. Dr. Vaughan of the Bureau of Agricultural Economics of the United States Department of Agriculture, also attended the Conference. The Costa Rican Government financed the major part of the expenditures of the Trial Census and all the expenses of the Conference.

PROJECT FOR A CENTRAL AND SOUTH AMERICAN STATISTICAL SERVICES LABORATORY

The following proposal for the establishment of a Statistical Services Laboratory at the Institute was drafted by this Department and is regarded as a project worthy of serious consideration by all international and national agencies concerned.

I. Introduction

Scientific progress is dependent on the development of proper methodology for the gathering, analysis and interpretation of data. The developments of the last fifty years in the fields of sampling, experimental design and statistical analysis have contributed immensely to scientific progress. Scientific accomplishments, in turn, have brought much higher levels of social and economic standards.

Unfortunately this progress has been localized, only a small proportion of the world's population sharing its fruits. While inherent differences between countries in natural and human resources as well as in capital no doubt have prevented a wider and fuller application of scientific developments, it is also clear that humanity has not made sure that the fruits of science are channeled to their widest, most effective application. This failure has brought wider differences in the social and economic standards of peoples than can be accounted for by differences in resources and capital alone.

The international organizations of relatively recent creation have been charged with the responsibility of correcting this basic failure. Faster progress can be achieved toward this aim if the essential groundwork of scientific methodology is laid early in the initiation of programs in the natural and social sciences.

II. Objectives

A. To set up sampling research projects in various Central and South American countries to evolve the most appropriate sampling techniques for gathering statistical data on social and economic problems.

B. To devise, test, and adopt a technique of experimental design useful to natural scientists of these countries.

C. To help Central and South American countries to plan research projects and to assist in the analysis of the data obtained from them, both in the natural and social sciences.

D. To train personnel from these countries in the statistical techniques evolved in the research and service program.

III. Reasons for Undertaking the Project

A. It is necessary to develop statistical methods which will stretch the limited funds and personnel available in these countries as well as improve the quality of the data obtained.

B. The Food and Agriculture Organization, the Inter-American Statistical Institute, and other international organizations as well as this Institute are deeply concerned about this problem of helping member countries to secure data as economically and accurately as possible.

C. The Central and South American countries are deeply interested in the application of sampling and other statistical techniques to their collection and analysis of natural and social science data.

D. The Institute, the Food and Agriculture Organization, the Inter-American Statistical Institute, other international organizations, and the individual countries are striving to obtain the most accurate data possible. On the other hand, the pressure for additional information is increasing rapidly, while the funds and trained personnel available are limited. Sampling, in many instances, can help by providing more ample and accurate data with the same amount of resources.

E. The 1950 Census offers an unusual opportunity to set up projects on sampling techniques of great value for the initiation of this project.

F. Many of the small Central and South American countries cannot use nor finance efficiently a national sampling and statistical service, while the pooled support of all of them may make these services available at a minimum cost.

G. One can hardly think of a project which would come closer to the roots of scientific development and would be more sound from the standpoint of allocation of the limited resources of the agencies involved. It also provides an excellent opportunity for cooperation and integration of work at the national and international levels.

IV. Reasons for Including the Project in the Institute Program

A. A project of this type requires continuity. The Institute is a permanent inter-American organization already operating in the research, instruction and extension of the natural and social sciences, and is charged with responsibility of promoting the development of the scientific resources of the countries concerned.

B. It has already cooperated with national governments in similar projects. The Trial Agricultural and Population Census of Turrialba was conducted as a cooperative undertaking between the Institute and the Costa Rica Government and was participated in by representatives of the Central American countries and of Panama.

C. The Institute is located near the center of the area to be served.

D. The administrative staff, equipment and other facilities available at the Institute would be available for the project.

E. The Institute has intimate contact with the agencies which would naturally cooperate in the project, thus facilitating organization and operation.

V. Estimated Expenditures

We believe that the project should be initiated as soon as possible. It also should be started on a small scale, probably with only one well trained, experienced statistician and one or two clerks as the original staff, then expanded as required. Therefore, the initial yearly expenditures of such a program should not be over $10,000. Other necessary equipment and facilities could probably be obtained from the Institute and the cooperating countries and agencies.

PERSONNEL

The Department has three permanent members:

Julio O. Morales	Agricultural Economist
Marta Coll	Home Economist
Jorge León	Assistant

In addition it has the following temporary members:

W. E. Keepper	Agricultural Economist
Antonio Arce	Field Assistant
Juvenal Valerio	Assisting in the Census

The following are the graduate students in this Department:

Reed Powell	Rural Sociology and Anthropology
Alvaro Vindas	Rural Sociology
Francisco Gómez	Agricultural Economics
Hugo Castro Steinvorth	Agricultural Economics
Roger Perreault	Special Student, Agricultural Economics
L. Paul Oechsli	Special Student, Agricultural Economics

Messrs. Powell, Vindas, Perreault and Oechsli are in Turrialba, while Messrs. Gómez and Castro are at Michigan and Montana respectively.

The staff of the Department should continue to profit from the continuous help of a Visiting Professor. If proper arrangements are made in advance, this should not unduly burden the Institute's financial position. Drs. Eckert and Keepper have helped our program considerably without involving heavy expenditures on the part of the Institute. The personnel should be expanded in the near future with the addition of a rural sociologist and a statistical clerk.

October 4, 1948

PROGRESS REPORT

EXTENSION AND VOCATIONAL EDUCATION

D. Spencer Hatch

Extension education includes training in Applied Rural Science under the American International Association Grant, the Demonstration Farm, and development of the Rural Demonstration Center. Plans for development of these projects were made during Dr. Hatch's six weeks at the Institute in August and September 1947. Preparations and developments went ahead under Mr. Claude Kellogg, who was loaned by the Methodist Mission of Mexico, until Dr. Hatch returned permanently in May this year. Many extension contacts had been made, and teaching in connection with extension had been given in the Basic Science Course to graduate students. Plans were made for the coming of the American International Association students.

APPLIED RURAL SCIENCE

Twenty-five students are enrolled in Applied Rural Science. Five teachers of the school manager grade are sent by the Minister of Education of Costa Rica. The others are from Venezuela. Some two hundred applications were received in Venezuela. The students work during forenoons in different departments, changing every two weeks. Students are paid by the hour in lieu of any other stipend. They have classes and field work in the afternoons and some night work. There is little extra staff for this teaching, and staff members from other departments are intended to fill out the schedule. The staff members are very busy with their own work, but we are getting some valuable help from them. This type of mature student demands real teaching; nothing but good farming will do with them. Every student also requires much individual personal guidance and consultation. Due to the reduced income from the Demonstration Farm, it is very difficult to do all that is necessary.

DEMONSTRATION FARM

Unfortunately, a cut in the budget makes impossible the hiring of a farm manager as contemplated. Sr. Carlos Valle, whom we have been able to have as superintendent of students during forenoons and whom we expect to give full time after October, is almost fully engaged with the practical groups, moving about, directing, teaching, and taking part in the practice. The farm operations are distributed among various staff members as extra responsibilities. Provision should be made in the budget for a very good farm manager. It is not expected that farming can be good enough or productive enough to teach these students adequately until we have a good farm manager. When we have the contemplated, well trained, teaching staff and the farm manager, and the Rural Demonstration Center, we believe we can

give training in rural leadership such as is not quite possible in any other institution.

RURAL DEMONSTRATION CENTER

When the American International Association Grant had been made certain, students were expected, and the running of rural centers with extension was contemplated by the sponsors in Venezuela, this Institute realized that it needed more actual contact with the farmers of Costa Rica in order to be best equipped to train young men and women to lead and teach farmers. Neither the experimental work nor the work with graduate students had many such contacts. Since the students must really see farmers and work with farmers, we were asked to help establish a Rural Demonstration Center with extension out from it after the pattern which had been so successful in India and Mexico.

An excellent site of fifty-one acres, well apart from the main Institute, easily accessible to farm families, was set aside from Institute land to be the farmers' own Center. A preliminary survey indicates that 21,000 rural people use Turrialba as their marketing village. Large numbers can naturally take part in the activities at the Center. The Center is adapted from the successful Centers with extension developed over the last twenty years in India and Mexico under the direction of Dr. D. Spencer Hatch. Everything in the Center will be simple, inexpensive, and copiable by rural families. The Center will demonstrate to the farmers and their families the best plants, animals, and methods found through scientific research at the Institute and elsewhere. The extension workers of the Center will carry these good things out to the farmers and their families. All the feasible home industries or spare-time industries will be carried on at the Center, and more young persons will be trained in these arts and crafts.

Students in Applied Rural Science, studying to become leaders and educators of rural people, while learning comprehensive basic agriculture on the Institute's Demonstration Farm, will spend part of their time actually helping to develop and to operate the Rural Center. They will go out from it on the Extension Services. Thus, they will learn how to run small demonstration centers in their home countries and how to teach farmers and farm families.

Very unfortunately, the funds for the Demonstration Center have not been found as easily or as soon as anticipated. Our students and all of us are eager to work on the development of this Noche Buena Center. It needs $58,000 for establishing and operation for three years.

October 29, 1948

PROGRESS REPORT

ORTON MEMORIAL LIBRARY

Angelina Martínez

PRELIMINARY ARRANGEMENTS FOR POSSIBLE INTER-AMERICAN LIBRARY COOPERATION

On January 26, 1948, the Librarian wrote a letter to Mr. John Marshall of the Humanities Division of the Rockefeller Foundation, with whom she had corresponded when she was a fellow, inquiring about the possibilities of getting some help from the Foundation for our Library. Since requests of such a nature originating from agricultural institutions in Central and South America are handled by the Natural Sciences Division of the Foundation, her letter was turned over to that Division for a reply. Correspondence was carried on with Dr. Harry M. Miller, Jr. until it was agreed that we submit a definite proposal to the Rockefeller Foundation for consideration.

In the meantime, in one of Dr. Allee's visits to the States he discussed with Dr. Miller the desirability of having Dr. Ralph R. Shaw, Librarian of the United States Department of Agriculture, make a survey of the Library resources of Latin American institutions engaged in agricultural work. As a result of such a survey the Library would work out a program of cooperation with such institutions. To this effect on August 6 of this year the Librarian prepared a memorandum addressed to Dr. Allee on the position of our Library in a cooperative program of such a nature. Copies of this memorandum were sent to the Rockefeller Foundation, Dr. Shaw and Mr. Colom.

A list containing items amounting to about $3,000.00 was sent to the Rockefeller Foundation for consideration. Although a few books were included, this request was mainly for back volumes of important journals, the need for which we have felt most keenly.

The provision of funds for Dr. Shaw's survey was approved, and he will devote six weeks to this study. Our proposal for materials for the Library will be considered after Dr. Shaw's survey is completed.

It has been impossible to get an Assistant for the Library, and, so far, the Librarian has been working alone with the help of a clerical assistant. The classification of the collection of bulletins from the different experiment stations is under way, and circulation statistics continue to show an increase in the use of library materials. For the period from July to October, 1,056 volumes were charged out of the Library.

The Librarian is again conducting a Spanish class and giving a course in instruction on the use of the Library.

Following is a copy of the Librarian's memorandum to Dr. Allee on the role of the Library in a cooperative program with other libraries of agricultural institutions.

MEMORANDUM

To: Dr. Ralph H. Allee

From: Angelina Martínez

Subject: Position of the Library in a Cooperative Program with other Libraries of Similar Institutions in the Americas

In order to live up to the Institute's objective of American cooperation, its library must in some way help to further this program by maintaining close relations with the libraries of agricultural schools, experiment stations, and departments of agriculture in this hemisphere. A study of agricultural libraries in Latin America would be of valuable assistance in helping us to shape a program that would stimulate better relations within the framework of inter-American library development in agricultural institutions.

The Assembly of Librarians of the Americas held in Washington, D. C. from May 12 to June 6, 1947 definitely recognized the need for inter-American cooperation in the field of library work. This need is more acutely felt in libraries of Latin American scientific institutions due to the lack of authoritative literature of a technical nature in the Spanish and Portuguese languages and the inadequacy of trade and subject bibliographies of Latin American publications.

Before we decide on any definite program we must realize that our knowledge of the resources of Latin American libraries is very insufficient because of the lack of proper bibliographic tools and the various types of organization existing in the library collections themselves. An evaluation of the libraries of agricultural institutions would furnish us with the following necessary information:

1. A statement of the purposes of the library as they are related to the objectives of the particular institution, i.e., the degree to which library services are integrated with the institution's program.

2. The degree to which the library provides an adequate supply of literature for teaching and research purposes. The nature of the library materials, whether of a strictly scientific or popular nature. Whether the journal collection is adequate to furnish research material and keep staff members informed of developments in their fields.

3. What kind of training librarians have received. The number of professionally trained personnel.

4. A statement of financial support given to libraries, whether there are any signs of apathetic attitudes on the part of governments and other officials resulting in lack of financial support.

5. The extent to which libraries are used by men engaged in agricultural research.

6. The adequacy of the reference service, if provided at all.

7. The physical structure and equipment of libraries and the provision for expansion.

8. To what extent and in what way librarians are willing to cooperate in any program of inter-American library cooperation.

The Institute Library in cooperation with the United States Department of Agriculture and the Pan American Union Libraries could take a very importan part in the development of any such cooperative program with Latin American agricultural libraries.

Such a study could determine the possibilities in various kinds of cooperation, some of which are:

1. Starting a Union Catalogue for agricultural libraries.

2. Establishing inter-library loan service with libraries in Latin America and the United States.

3. Providing a bibliographic center:

   a. Compiling, processing, and distributing bibliographies, etc.
   b. Putting out a regular bulletin in Spanish abstracting agricultural publications
   c. Doing some translation work
   d. Supplying photostatic copies and microfilms (through the the United States Department of Agriculture, perhaps)

4. Providing a training center for Latin American librarians working in agricultural institutions. We could have one librarian come to the Institute for six months or a year to learn the different library skills while also acting as Assistant Librarian on our present budget. This might be expanded in cooperation with the United States Department of Agriculture Library and recognized training schools for librarians.

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November 4, 1948