

ESCUELA AGRICOLA PANAMERICANA

ANNUAL REPORT 1949

Thirty-nine students received their diplomas on 26 February, after completing three years of training. These boys represented eleven Spanish-speaking tropical American republics, and brought our total number of graduates up to 181. Toward the end of the year we felt the time had come when it would be interesting to find out what these boys are doing. We therefore went over the list with the following results:

One graduate, a member of the class of 1946, has died. Of the remaining 180, we had no recent information regarding the occupations of eight. Five are engaged in occupations not directly related to agriculture.

Even if we assume that the eight regarding whose present occupations we are ignorant are not engaged in agricultural pursuits, the percentage of graduates following careers for which they were trained here is above 90; and it is fair to assume that some of the eight are in agriculture. We believe this to be a very satisfactory record. One of the best vocational schools of agriculture in the United States takes pride in the fact that 75% of its graduates have followed agricultural careers.

Quite possibly our high percentage is due in part to the following factors: (1) We try to choose students with agricultural backgrounds, and (2) the countries which we serve are predominantly agricultural in character and there are fewer openings in other fields than in the United States.

It was originally our aim to bring boys from small farms and

send them back there when they had been trained. Quite a few have followed this course; but in many cases it appears that the boys are anxious to begin earning money right away; they have little or no capital with which to work; and they sometimes find that their fathers are not wholly sympathetic with their desire to modernize the methods used on the family farm. The result has been that many of our graduates have preferred to look for paying jobs.

The Standard Fruit and Steamship Company has given employment to about a dozen. Owners of large agricultural properties have taken many. But the trend which has been most interesting, and we believe the most useful, has been the employment of our graduates by tropical American governments as extension workers. We believe Panama was the first country to discover that our boys are admirably equipped to work among small farmers. They can actually show these people how to do things better, and they are not overburdened with theoretical learning. In other words, they speak the language of the small farmer.

During the year under review, the Costa Rican organization known as STICA ( Servicio Técnico Interamericano de Cooperación Agrícola) gave employment to a good number of our graduates, and placed advertisements in two San José papers to the effect that they wanted more of them. Nicaragua put in a bid for several. El Salvador took several in the Centro Nacional de Agronomía. Guatemala now has two or three in extension work. The Honduran government has taken two or three. The Dominican government has placed two or three in charge of small demonstration stations. Venezuela has two in horticultural work for the Ministry of Agriculture. Ecuador and Peru both have one or two.

## THE NUMBER AND ORIGIN OF STUDENTS

As mentioned above, we graduated 39 on 26 February. This group came from the following republics: Guatemala 5, El Salvador 5, Honduras 11, Nicaragua 2, Costa Rica 7, Panama 2, Colombia 1, Ecuador 1, Perú 1, Dominican Republic 2, and Venezuela 2.

We opened the new school year on 1 June with 174 students, the largest enrollment we have ever had. This number is 14 more than the capacity of our dormitories. The excess was housed in two of the recreation rooms in our dormitories for the first few months, by which time the number had dropped to 160. The new group, Class of 1952, was made up as follows: Guatemala 13, El Salvador 7, Honduras 16, Nicaragua 7, Costa Rica 12, Panama 5, Colombia 7, Dominican Republic 3, and Cuba 3. No students were taken this year from Ecuador, Peru or Venezuela due to lack of satisfactory applicants.

The number of applications for scholarships showed a decided increase this year in certain countries. Nicaragua was chief among these, due to much publicity given the school by government officials in that country. The number of applicants from Salvador continues high, and these boys show more persistence than almost any others. Guatemala and Costa Rica continued on about the same level as in previous years. Due to the interest taken by the United Fruit Sugar Company in Cuba we are now receiving a good number of applications from that country and are getting excellent material on the whole. Presumably because of the relatively small agricultural population of Panama we receive fewer applications from that country than we would like, but through the activity of the Chiriqui Land Company the number is growing.

Experience seems to be showing - as would be expected - that students from rural districts are better bets, on the average, than

students who have been reared in the larger cities, such as Guatemala and San Salvador. Because the school has had more publicity in the cities than in the rural districts, it has sometimes been difficult for us to obtain as many students from the latter as we would like.

#### THE TRAINING PROGRAM

On the basis of experience to date, we believe it desirable to place more emphasis on two subjects: Agricultural mathematics and the English language. As has been noted in previous reports, most of our students are deficient in the practical applications of simple arithmetic - addition, subtraction, multiplication, division, decimals, fractions and the computation of interest. This is often true of students who have had full primary education and one or more years of secondary. We are therefore devoting more time to drilling the students in these matters.

We have also found that many students learn here to read English fairly well, but because they are timid about practicing the spoken language, they have left the school without sufficient fluency. We have therefore devoted more attention to training them in the spoken language and believe we are seeing excellent results.

At the request of the students themselves, we this year added a course in soils and fertilizers. Previously these subjects had been included in the course on Tropical Crops. The latter course was this year divided into two separate courses, one on field crops and the other on horticultural crops.

In line with the philosophy of the school, as originally established by Mr. Zemurray, we continue to place much more emphasis upon the practical training than upon classroom work. We attempt to

maintain close relationship between the two, relating our classroom instruction to the day-by-day work of the boys in the field and among the livestock.

As in previous years, more students show a preference for dairying and dairy products than any other subject. Next to this come the rearing of hogs and the cultivation of field crops; and finally, horticulture. It may be a fair guess to say that if we take a random sample of ten boys, about six are more interested in livestock than in any other subject; three or four in field crops; and not more than one in horticulture. We suspect a cross-section of tropical American agriculturists in general would show about the same proportions.

#### BUILDINGS AND EQUIPMENT

When we built the school we provided rather temporary housing for the labor used on construction. This housing had degenerated into an unsatisfactory condition. We therefore spent about \$5000 rebuilding quarters for our permanent labor. In addition we built three houses (and commenced a fourth) for married employees at a cost of slightly less than \$5000 each. These houses are of stone, with a living room two bedrooms and bath, and kitchen, and we think they are just about the most attractive houses we have constructed. In addition we built three smaller houses of brick, each with a living room, two bedrooms, bath and small kitchen, at a cost of \$5000 for the three.

In March we completed the Science building, at a cost of less than \$14,000. This is a roomy and extremely useful structure. It contains the drafting room, where we store our map collection and building plans (in passing, it is worthy of note that we frequently have requests for plans of such buildings as our dairy barn, hog barn, and so on); a large room to be used for zoological collections and

general purposes; a large room for the forestry collections; a library large enough to hold 8,000 volumes and 20,000 pamphlets and bulletins; a large room for the herbarium; and a room and bath for the use of visiting scientists.

Extensive repairs were required in the student dormitories. Termites have done so much damage to the pine door frames that we are having to replace all of them with Spanish cedar. It was a mistake to use pine for this work - it has only lasted six to seven years. In the future we shall use nothing but Spanish cedar for door and window frames. The doors and windows themselves have not yet been attacked to any extent. We also had to replace brick flooring in the hallways and a few other places where the traffic is heavy.

Four laying houses were constructed in the Poultry Department, to make it possible for us to increase very considerably the size of our flock. We have not yet been able to produce sufficient eggs to meet all requirements of the Mess Hall, and the rising price of beef makes us feel that we should cut down our consumption of that article by using more chickens.

The chemistry and biology laboratories, which were taken over by Professor Héctor Gómez Lora in April, were improved by the addition of new equipment; and a new pasteurizer was purchased to replace the old one in the Creamery.

#### METEOROLOGY

Rainfall for the year was above average, but the distribution was rather unsatisfactory. There was a severe dry period in July and August. A set of maximum and minimum thermometers a rain gauge and an anemometer were installed on our Uyuca property at 5900 feet

where we have planted temperate zone fruit trees and numerous other temperate zone crops. While we shall not be able to read these instruments daily, we shall get some interesting figures for comparison with those of Zamorano - especially rainfall and minimum temperature. Monthly figures at the school were as follows:

<u>Month</u>	<u>Rainfall (ins.)</u>	<u>Maximum temp. F°</u>	<u>Minimum temp. F°</u>
January	0.44	83	45.5
February	0.29	88	49
March	--	91	49
April	0.08	96	55
May	1.69	92	59
June	10.33	90	56
July	4.43	86	61
August	2.20	88.5	56
September	8.52	88.5	58
October	10.07	86.5	62
November	1.37	83	50
December	1.76	86	47
Total	40.18		

During the latter half of the year we had with us for several months Prof. John H. MacGillivray of the College of Agriculture, University of California, who made an interesting study of our climate. He worked up mean temperatures for each month, based on several years' records; and obtained for us data showing the number of hours of daylight at this latitude for each month of the year. He used these figures in studying the possibilities of truck crop production in this climate, as will be noted later in this report.

## PERSONNEL

There were several changes during the year, of which the principal ones only will be mentioned. Mr Henry G Hogsboom, Assistant Director, transferred back to the United Fruit Company as General Superintendent of Livestock in the tropics. Professor Allen B. Arnold, who had taught English here for several years, transferred to the Tela Railroad Company as supervisor of English-language schools. Dr Archie F Carr, who had been on leave of absence from the University of Florida and had taught biology and physical sciences here during four years, returned to his post in Florida. Guillermo Cruz, Student Inspector, resigned to go to the United States.

Professor Héctor Gómez Lora, a citizen of Colombia with long experience in teaching biology and chemistry in that republic, was employed to take over Dr Carr's work. Alfonso Hernández Quintanilla of El Salvador was employed to teach English. José Tobías Cornejo also of El Salvador, was employed as Student Inspector and to teach mathematics.

Our Forester, Paul J Shank, was granted a year's leave of absence to pursue advanced studies at the Yale School of Forestry and Don Fiester, our horticulturist, was granted similar leave to study at the Interamerican Institute of Agricultural Sciences in Costa Rica.

## ANIMAL HUSBANDRY

We continued to build up our dairy herd through crossing the best native cows and grades (half bloods) with imported Jersey and Guernsey bulls. Production records were put in excellent shape by William Armstrong and we are beginning to see interesting results

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from the work of the past six years in this field. A registered Guernsey bull calf was bought in Costa Rica; a pure-bred Jersey bull calf was given us by the government of that republic; and a pure-bred Brown Swiss bull calf was given us by Sr J. Joaquín Peralta of Costa Rica, owner of one of the best herds of that breed in Central America.

Our two silos continued to prove extremely valuable and have attracted great attention on the part of visitors. Sweet sorghum which was planted in quantity for the silos was largely destroyed this year by an unusually severe infestation of army worms, with the result that we had to use other materials - mainly corn, kaffir corn, Napier grass, and some Guatemala grass-to fill our silos, with the addition of pigeon peas in relatively small percentages.

Our work with hogs has been severely handicapped through the introduction of brucellosis from the United States, but at the end of the year we commenced to get into production again and we have reason to hope that the disease has been eliminated. Abraham Arce of the Livestock Department deserves credit for having carried out the periodic tests for this disease in an efficient manner.

As has been mentioned above, the Poultry Department was expanded by the addition of four laying houses and every effort is being made to build up production, both of eggs and chickens, for consumption in the students' Mess Hall.

Half-breed goats were gradually eliminated and we are now confining ourselves to producing pure-blood Toggenburgs and Nubians. There are now about 30 in the combined herd, and during the year about this many kids were distributed to farmers in Honduras and El Salvador.

## FIELD CROPS

Nine thousand pounds of panela (crude sugar) were made by the students during March and April - more than enough to supply our needs for the year. A fine planting of the cane variety Mayagüez 28 is available for the 1950 crop.

Our planting of rice yielded only 97 hundredweight of clean grain, or about 900 lbs per acre. The planting was damaged at an early age by army worms which were more abundant this year than at any previous time.

We greatly increased our plantings of Guatemala grass, which we think has shown itself decidedly superior here to Napier or Elephant grass; and we tried an experiment in hay making, using Jaraguá grass from one of the Monte Redondo pastures. About forty tons were laid by, and at the end of the year the product was in excellent condition.

Cultivation of yuca and sweet potatoes was continued on a large scale, both for the Mess Hall and for hog feed. We are increasing our plantings of pigeon peas and Dolichos lablab as green manures and stock feed.

## HORTICULTURE

Perhaps the most interesting developments of the year were due to the presence here, during several months, of Professor John H. MacGillivray, Associate Head of the Truck Crops Department at the College of Agriculture, Davis, California. Professor MacGillivray made a careful <sup>study</sup> of several of our most important problems in connection with the production of vegetable crops. Perhaps his most important contribution was in connection with the production of onions, a valuable crop in this part of the world. He carried out tests of a number of varieties and suggested numerous changes in our practices.

Our collection of avocados was increased to 84 varieties and is now certainly the largest in tropical America. Our soils are not well suited to avocado culture, however, and our major objective is the distribution of propagating material to other regions. During the year we sent budwood to California, Texas, Florida, Cuba, Colombia, Peru, Venezuela and México.

Don Fiester gave the boys excellent training in the vegetative propagation of Citrus fruits, avocados, mangos and roses. Thousands of budded plants were distributed. The students are given first chance at such material.

The acquisition, in 1948, of a relatively flat piece of land near the summit of Uyuca, at an elevation of about 5900 feet, has made it possible for us to do some experimenting with temperate zone crops. This is desirable from two standpoints: the training of our students, many of whom live at relatively high elevations in tropical America, and the introduction of promising new varieties of fruits and other crops. Excellent collections of apples, peaches, pears and plums were introduced from California and Florida. Avocado varieties suited to the highlands were planted, as also Japan persimmons, grapes, and several varieties of Rubus. Two small brick houses were built on the property, one for a caretaker and the other for use of staff and students.

#### THE MEDICAL DEPARTMENT

The Student Infirmary has remained throughout the year in charge of Manuel Sandoval, a graduate of the Medical School in Tegucigalpa. There is nothing of an unusual nature to report. We have had only five cases of malaria among the students and most of those probably originated outside our valley. Regular visits from Carleton Hale,

chief sanitary inspector for the United Fruit Company, and the work of our sanitary gang directed by him, has kept down mosquitos to a very satisfactory degree.

There were only 55 man-days spent in the school infirmary, and 12 in one of the hospitals in Tegucigalpa. This represents an all-time low. Forty students were treated during the year for amoebas, and 28 for other intestinal parasites. There were 45 cases of grippe and 119 of common colds.

#### FINANCIAL SUMMARY

Through various grants made by the United Fruit Company, the school now has a Restricted Endowment Fund of \$3,000,000.

Total expenditures for 1949 were as follows: Operations, \$221,029, and betterments, \$77,188.

All funds required for the above two items which were not earned by the Restricted Endowment Fund were acquired by direct grant from the United Fruit Company. Small amounts which were received from the sale of breeding stock (calves principally) and grafted fruit trees were placed to the credit of the Students Benefit Fund which is used, at the discretion of the Administration, to help needy students in ways which do not/<sup>fall</sup> within the scope of the school's program, or to provide entertainment on special occasions.

Taking as the basis the average number of students for the year, which is 163, it cost:

To provide a student with transportation to or from the school, in those cases where he could not pay this himself, \$24.83

To provide him with clothing including shoes \$71.56

To feed him, per meal, 16 cents. (In this respect it should be

remembered that the school produces a large part of its foodstuffs; the expense therefore includes principally kitchen help, and such items as white sugar, white flour, coffee, and beef which is purchased on the hoof and charged out to the Mess Hall as used).

To provide him with medical and dental attention \$23.41

To wash his clothes \$31.06

To provide him with text books and school supplies \$36.27

These, of course, are only some of the items which go to make up the total cost of maintaining a student. Dividing the total operating cost by the average number of students, we get the amount of \$1356.01 which can be said to represent the total cost per student for the year 1949. The cost in 1948 was \$ 1313.34. Clothing and foodstuffs have increased in price, and there have been normal increases in salaries and wages.

It has sometimes been mentioned that we could send our boys to the United States for education at a cost no greater than that shown above. This is beside the point. Even in the best vocational schools in that country students can not be trained for farming under tropical conditions. Not only is this school turning out boys who have acquired by actual practice the skills necessary for the growing of tropical crops and the handling of livestock under tropical conditions; we are also demonstrating the possibilities of practical education in the tropics. The great value of this is shown by the attention which is being given to our program by other schools.