we have extended our plantings. Pigeon peas (Cajanus indicus), rice beans (Phaseolus calcaratus)and Lablab (Dolichos lablab) continue to be our favorite green manure crops, though this year we have used velvet beans more than formerly, and with good results.

HORTICULTURE

Having observed in previous years the interest taken by the students in grafting fruit trees, and being convinced of the importance of this subject as well as of the necessity for much practice if a student is to become skillful, we greatly increased our nurseries. Altogether we had some 5000 citrus seedlings. (Sour orange) available during the year, 5000 mango seedlings, 5000 avocado seedlings, and 2500 rose stocks. This volume of material gave every boy an opportunity to do all the grafting and budding he wanted. At the end of the year we had some 3000 budded citrus trees on hand, 2000 budded roses, and a large number of avocados and mangos. We have encouraged the boys to take or send home as many of these as they wish; we have given many away; and we have sold a few at nominal prices, putting the money in the Students Benefit Fund.

Considerable experimentation was carried out in connection with this work. We also continued to introduce and test new fruit and vegetable varieties, the most noteworthy acquisition of the year being a collection of 14 new avocados from Atlixco, in the State of Puebla, México, secured in late October. All but one of the fourteen varieties has been established here.

Out of a collection of nearly 40 varieties of the vinifera or European grape which came from California through the US Dept. of Agriculture in 1945, only two have fruited well to date. These

are Valdepeñas and Carignane, both wine types. The tropical hybrids originated by Mr Joseph L. Fennell (of which we have only a few) have not fruited very satisfactorily as yet.

The vegetable garden has received much attention during the year, and there has rarely been a week when at least eight or ten items were not on the list of vegetables available for consumption. Our most difficult period is during and after the heavy rains of late summer; the next most difficult period the extremely warm weather during the last month or six weeks before the rains set in-that is, late March and April, sometimes extending into May.

During the year we switched from Mignonette lettuce, which has up to now been the most successful variety here, to Great Lakes, which is more like the Iceberg types of the United States and therefore preferred by most people. Aside from this, the vegetable garden remained on practically the same basis as in 1946.

THE MEDICAL DEPARTMENT

There have been no serious epidemics during the year, and nothing of particular importance to report. Intestinal parasites constitute just about the major problem; malaria has given us very little trouble. We have more cases of appendicitis than seems reasonable but suspect that most of these are chronic in nature. When they flare up we take no chances but send the boy into Tegucigalpa for an operation.

PUBLICITY

Quite probably we have not seen all of the articles which were published concerning the school during the year, but the following have come to our attention:

The March issue of "La Chacra", an excellent and widely-read agricultural magazine published at Buenos Aires, Argentina, carried an illustrated article devoted to this school entitled "Enseñanza Técnica de Agricultura Tropical".

The Director of the school was the author of an article entitled "Training Tropical Agriculturists", published in the April-May issue of "Agriculture in the Americas", official organ of the Office of Foreign Agricultural Relations, U. S. Department of Agriculture. Another article by the Director entitled "Escuela Agrícola Panamericana; el Primer Lustro" was published in the November edition (Spanish) of "La Hacienda", New York.

The September issue of "Readers Digest" carried a short article by J. B. McEvoy entitled "A Lot of Leaven in a Little Loaf", devoted entirely to the history and work of this school. This article brought us applications for admission from such widely distant regions as Palestine, India, and Germany.

Mr. James H. Webb jr., formerly Cultural Attaché to the American Embassy in Tegucigalpa, published an article in the October issue of the Bulletin of the Pan American Union (both Spanish and English editions) entitled "The Cultural Front in Honduras". While devoted principally to other matters, Mr. Webb mentions "The United Fruit Company, whose Escuela Agrícola Panamericana in Honduras may have started a revolutionary trend not only in inter-American commercial relations, but in the social progress of Latin America as well".

VISITORS

These have been so numerous that it is not feasible to mention here even the most interesting ones. They have included agriculturists, educators and others from practically all parts of this

Hemisphere, as well as some from Europe. Our Monthly News Letter has attempted during the year to report most of them.

REPORT OF

FORESTRY PROGRAM ACTIVITIES FOR YEAR 1947

By Paul J. Shank

I. School work at EAP

The months of January, November and December were spent in class and field work with third year students. Class room and practice work was carried out in protection and management of forested lands and study of denuded lands for purposes of reforestation. Emphasis was placed on forest management as a tool for conserving soil and water. Economic utilization of wood products useful in connection with farm operations also was covered.

A forest tree nursery was established at the school in April. It was made for the purpose of affording a medium for teaching students how to grow planting stock for reforestation work. Training was given in selection of species, collection of seed from local sources, seeding and planting, and transplanting to field sites. A rotation plan is in effect which gives every boy in school at least one month on this project. A third year student is assigned permanently to aid in supervision of this work. He will remain after graduation to do a year of post graduate specialization.

II. Management of School Forest.

The 2,500 acre school forest was put under management of the forestry program supervisor in late 1946. Mapping and cruising of the forest has been carried on as time has been available. The most important phase of management on this land is conservation

of water that rises on it and forms the source of supply for irrigation and domestic use at the school. Protection from fire is the main job in accomplishing that end. However, a careful system of cutting timber has a place in the management. In late 1946 a system was put into practice which permits removal of only mature, defective or suppressed trees. Through such a system, improvement of the stand is being accomplished that will bring about a higher production of volume per acre in the future. Protection from fire is already showing effects. No serious fires have occurred on the forest since the opening of the school and reproduction is filling up areas where previously there was a deficiency in the younger age classes. There is a gross volume of 13 million board feet of pine timber on the forest; a supply that will more than fill the needs of the school and the local people indefinitely if given proper care.

Studies of growth rate in the Ocote Pine, Pinus oocarpa are under way. Preliminary figures indicate that there is an annual increment of 200 board feet per acre on normal stocked stands. Fifty years is the economic life of pine in this zone. Trees should be harvested at about that age as the growth rate slows down to such an extent as to make it unprofitable to hold them longer.

III. Preservative Treatment of Wood Products.

A creosoting tank was installed during the year for an experimental project in preservative treatment of post and timbers. Local pine proved easy to treat by the open tank process and penetration was controllable by variations in the time schedule of treatment. Six hundred posts and various small wood products

were treated, most of which were put in the ground during the year. Results of prolonging the life of such products cannot be known until time gives the answer. Cost of creosoted posts appears prohibitive due to the high cost of transportation of creosote from the coast to Zamorano. The total cost of a treated post was $ .75.

A student assistant supervised this work after going through a short training period.

IV. Land Acquisition.

On instructions from the Director, a few days were spent examining land in the upper extremities of watershed from which source the school gets its water supply. This was for the purpose of getting information concerning land which the school might purchase in order to extend its protection of water. Through extension of land holdings it would also make available high elevation land for use in trying out temperate climate fruits. Two tracts of land were examined and recommended for purchase. As of the end of 1947, negotiations are underway to purchase them.

V. Cooperative Work.

Professor Hess of Yale University visited the school in August and worked out a list of tropical woods in which he is interested for scientific study. He asked our help in getting specimens. We agreed to help in this work. Specimens of one species have already been collected and shipped from the east coast of Guatemala. Additional specimens are ready for shipment in Honduras pending issuance of export license. The study by Yale is being done for the U. S. Government which is stockpiling strategically important woods.

VI. Timber Surveys for the Company.

Timber cruises were made during the year for the Company where certain areas offered possibilities. Detailed reports of these cruises were submitted to the interested divisions of the Company. Only a summary is being shown to indicate the places and time spent on this class of work.

1. Punta Gorda Tract, Cukra Dev. Co. Nicaragua; 8 weeks
2. Tiquisate Division, Cia. Agr. de Guat. Guatemala; 4 weeks
3. Bananera Division. Guatemala; 2 weeks
4. Sierra de las Minas, Montufar Tract. Guatemala; 1 week
5. Bográn Tract, Río Tepemechín, Tela RR. Co.; 2 weeks
6. Miyares Tract, Guatemala; 3½ weeks
7. Talamanca Sierra. Costa Rica; 4 weeks.

Approximately twenty-five weeks or half the year was spent on this work. It afforded a good opportunity to learn a lot about the forest resources at widely scattered localities in Central America. It is hoped that additional work of this kind will be available in the future so that more can be learned of the forestry problems in the several countries.

A planned program of forestry activities has not been formulated yet since it was felt that an intimate knowledge of the problems was necessary before starting anything. A proposed program will be submitted in the near future giving my idea of how we can best help these countries.

APPENDIX

ANNUAL REPORT OF ESCUELA AGRICOLA PANAMERICANA

YEAR 1947

FINANCIAL SUMMARY

In June, 1947, the United Fruit Company added $500,000.00 to the School's Restricted Endowment Fund, bringing that fund to a total of $2,000,000.00 as of the end of 1947.

Our 1947 Operating and Betterment Budget totalled $239,375.00 of which amount United Fruit Company made a direct cash grant of $187,500.00 to our account. The balance of $51,875.00 was to be taken from earnings of the Restricted Endowment Fund.

No funds for operation and betterments have been received by the School other than those provided by the United Fruit Company. The cash granted by the United Fruit Company to date is $3,722,110.00 of which amount $2,000,000.00 is Restricted Endowment Fund and $1,722,110.00 is total spent through 1947 for construction of the present School plant and its maintenance through end of 1947. Of this latter amount, $179,200.00 represents a cash grant in the latter part of 1947 to cover part of our estimated 1948 Operations and Betterment Budget. Total 1948 Budget is $259,200.00, $80,000.00 of which will be provided from earnings of the Restricted Endowment Fund.

Total investment in the School plant, including land, was $681,744.48 through December 31st, 1947.

During 1947 the Rockefeller Foundation granted the School $7500.00 over a period of three years for sending our more promising graduates to the United States for further training in the basic agricultural sciences. Of this grant, a maximum of $3000.00 is available annually.

As in the past, the School does not produce foodstuffs for sale as all are used in our own operations. Trees for transplanting and breeding livestock continue to be sold at nominal prices and hides from butchered animals at current market rates. The proceeds from these sales are placed in the Students' Benefit Fund.

Retirement and Death Benefit Plan for School employees was put into effect on September 1, 1946, and all elegible employees are members of the Plan. During 1947 the School's contribution to this fund totalled $1553.61

BETTERMENTS

During 1947 the following construction jobs were completed and transferred to Property Account at a total cost of $25,566.84:

Telephone Installation	$ 643.36
4 Electrical Distribution Transformers(2nd hand)	193.53
Library books and Film	1,379.26
Tools and Equipment-Fixed	7,308.48
Tools and Equipment-Movable	1,945.14
Furnishings	1,419.37
Shed for Livestock Machinery	1,380.81
3 Portable Chicken Brooders	272.88
Gasoline & Oil Storage Shed	1,006.37
Additions to Mess Hall	2,003.46
Conversion Garage to Living Quarters	3,678.83
Additional Installation for Hog Raising	1,989.79
Supplementary Canal for Hydroelectric Plant	1,015.41
Trench Silo No. 2	697.38
Compost Pit	378.14
748 Meters Pasture Fencing	254.63
	$25,566.84

$1,195.08 remained in Construction Account at the end of 1947 for construction jobs not completed by the end of the year. These were fountain for Administration Building, Science Building and Goat Dairy.

Construction of these and other jobs will be continued during 1948. The largest project on hand at the present time is the erection

and equipping of the Science Building which will house our research library, engineering office, herbarium, biology and forestry exhibits.

Maintenance and Operations

Total operating expenses for 1947 were $199,977.15 of which amount $25,674.79 represented Book Charges. Our average number of students for the year was 146 which gives an average cost per student per year of $1,193.85 before Book Charges and an overall average of $1,369.71 per student.

Detail of Account 18
Animal Industry Department Maintenance

U. S. Currency	1947	1946
Cattle	$ 6,836.83	$ 3,378.90
Swine	234.26	1,602.65
Goats	988.06	229.58
Poultry	1,176.21	2,022.23
Dairy	1,847.63	1,853.64
Bees	238.91	90.91
Total	$11,321.90	$9,177.91
Total Livestock Herd, December 31st	887	891
Animals Butchered-Cattle	545	430
Animals Butchered-Swine	58	70
Animals Butchered-Goats	3	34
Pounds of Beef Received-Dressed	106,751	84,226
Pounds of Pork Received-Dressed	10,926	6,056
Pounds of Mutton Received-Dressed	72	376
Pounds of Butter Produced	3,705	1,832
Pounds of Cheese Produced	1,534	60
Milk Produced-Quarts	117,267	87,952
Cream Produced-Quarts	657	698
Eggs Produced-Each	19,499	37,706

Detail of Account 19 - Mess Hall Operations

U. S. Currency	1947	1946
Cost of Goods used	$19,891.47	$14,291.83
Payrolls	6,102.41	4,841.72
Fuel	1,509.14	1,350.13
Other Expenses	1,056.49	1,682.94
Sub-total	28,559.51	22,166.62
Revenue	370.28	539.45
Net Cost	$28,189.23	$21,627.17
Average cost per student per year	$ 193.08	$ 140.44
Number of meals served	199,838	189,038
Average cost of meals served	0.1429	0.1173
Average collection per meal	0.0018	0.0029
Average net cost per meal	0.1411	0.1144

As in the past, no book charge is made for foodstuffs produced by the school. This does not apply to meat, which is charged to operations at cost since animals are purchased for fattening and butchering.

Detail of Account 20 - Student Maintenance.

	1947		1946	
U. S. Currency	Total Expenses	Rate per student	Total Expenses	Rate per student
1 Travel	$4,868.34	33.34	$2,683.73	17.42
2 Clothing	8,708.05	59.64	7,036.29	45.69
3 Bedding & Towels	608.72	4.17	303.31	1.97
4 Supplies	566.64	3.88	419.42	2.72
5 Athletic Equipment	238.77	1.64	420.45	2.73
6 Laundry	4,875.62	33.39	4,764.20	30.94
7 Text Books & Supplies	2,241.99	15.36	2,383.75	15.48
8 Miscellaneous	1,038.83	7.12	1,387.36	9.01
	$ 23,146.96	$ 158.54	$19,398.51	$ 125.96

The following items of clothing were issued to students. Comparative figures for 1946 are given as well as average clothing unit per student:

Clothing Item	1947 Total Issued	1947 Avg. Per Student	1946 Total Issued	1946 Avg. Per Student
Belts, Khaki (x)	114	.78	149	.97
Combs (x)	58	.40	57	.37
Hats, Straw	192	1.32	217	1.41
Jackets, Zipper (x)	77	.53	49	.32
Neckties (x)	78	.53	-	-
Pants, Blue Dungarees	415	2.84	226	1.47
Pants, Khaki	497	3.40	294	1.91
Shirts, Blue Chambray	492	3.37	582	3.78
Shirts, Khaki	603	4.13	462	3.00
Shirts, Under	257	1.76	70	.45
Shoes, Pair	662	4.53	675	4.38
Shorts, Sport (x)	64	.44	17	.11
Shorts, Under	396	2.71	507	3.29
Slippers, Leather (x)	79	.54	-	-
Socks, Pairs	1945	13.32	1042	6.76

Items marked (x) are usually issued to each student only once.

Bedding	1947	1946
Blankets	33	48
Pillows	25	17
Pillow Cases	229	75
Sheets	88	86
Towels, Bath	202	114
Towels, Face	-	72

Each student is completely outfitted with bedding on arrival, but this bedding is returned when he graduates and it is reconditioned and reused until worn out. This is not true of clothing which graduates are allowed to take home with them.

Detail of Account 21 - Medical, Dental & Sanitation

U. S. Currency	1947 Total Expenses	1947 Rate per Student	1946 Total Expenses	1946 Rate Per Student
1 Payrolls	$2,301.83	15.77	$ 5,858.45	38.04
2 Supplies	629.11	4.31	303.71	1.97
3 Hospitalization	2,399.32	16.43	1,313.00	8.53
4 Dentistry	1,338.38	9.17	1,471.37	9.56
5 Sanitation	1,336.19	9.15	2,265.68	14.71
6 Miscellaneous	147.19	1.01	122.10	.79
TOTAL	$ 8,152.02	$ 55.84	$11,334.31	$ 73.60