AGRICULTURE

Good Neighbor Farms

Guatemala, through a collaborative program with the U. S., is conducting experiments to improve crops that are essential to feed the world.

By MARTHA G. MORROW

From Guatemala City

➤ THE search for better corn, beans and squashes has been carried back to the very birthplace of these vegetables. Through our collaborative program, intensive research on these and many other crops is being conducted in the populous Central American Republic of Guatemala.

Success will mean that the people of Guatemala can enjoy a more balanced diet. It will also result in better food varieties here at home.

Several agricultural research stations, located from the coast up to the volcanic highlands, are run by the Instituto Agropecuario Nacional. This National Agricultural Institute is a cooperative project of the governments of Guatemala and the United States. Everything from coffee, chief export of the country, to pasture grasses is studied here. Specific problems of the local farmer are also solved.

Outpost at Antigua

Iowa State College has an outpost at Antigua, ancient capital that several centuries ago was destroyed by earthquakes. Corn, cheapest food an Indian can get and his main source of sustenance, is the chief project here. Experiments in raising other crops common to the region are also being carried on.

Bananas, among Guatemala's most important exports, are not the only crop being investigated by the United Fruit Company on their extensive experimental farm. Trial plantings of teak trees and African oil palms are being established. They are also doing work on reforestation and cattle breeding.

Three experimental fields, chosen because of their different altitudes and soils, are run by the Instituto Agropecuario Nacional. The cone of volcano Atitlan looks down on Finca Chocola, a government farm of thousands of acres located about 2,800 feet above sea level. Part of this is utilized for experimental purposes. Situated on land sloping toward the Pacific Ocean, this plantation ("finca" means farm operated on a commercial scale) is blessed with sufficient water for complete irrigation, when needed.

The best varieties of coffee trees, most satisfactory shade trees to use in protecting them from the sun, economical use of fertilizer and cover crops to prevent soil erosion are all studied on this farm. Rubber and sugarcane are also being investigated. Around a hundred varieties of beans, radishes, peanuts, cucumbers, squash and peas were sown here.

Temperate-Zone Crops

At an elevation of 7,000 feet, temperate-zone crops are grown at Labor de Ovalle. Wheat, apples and plums are raised in this region where frost sometimes nips the buds or the ripening fruit. Livestock, particularly sheep, are also grown at this experimental substation high in the volcanic mountains of the department of Quezeltenango.

Near Guatemala City work is being carried on at Finca Barcena by the Instituto. The Escuela Nacional de Agricultura (National Agricultural School) is located there and the two collaborate in the work. This finca is about 5,000 feet above sea level.

In Guatemala there are only two seasons—the dry and wet. At Finca Barcena, the dry season often starts in October and lasts until early May. During this lengthy period of drought, most of the plants shrivel up and die; there is practically no water for irrigation. In the rainy season usually less than 40 inches of rain falls, as compared with 140 inches in some other sections of the country. Part of the land slopes gently so that machinery can be used for cultivation. But much, like that of the surrounding country, is too steep to be worked except by hand.

Sometimes work on a particular project is carried out cooperatively with farmers. Neighboring fields are operated at the expense of the Institute. Or finca owners and small-land farmers cooperate at their own expense, using the services of the agricultural experts.

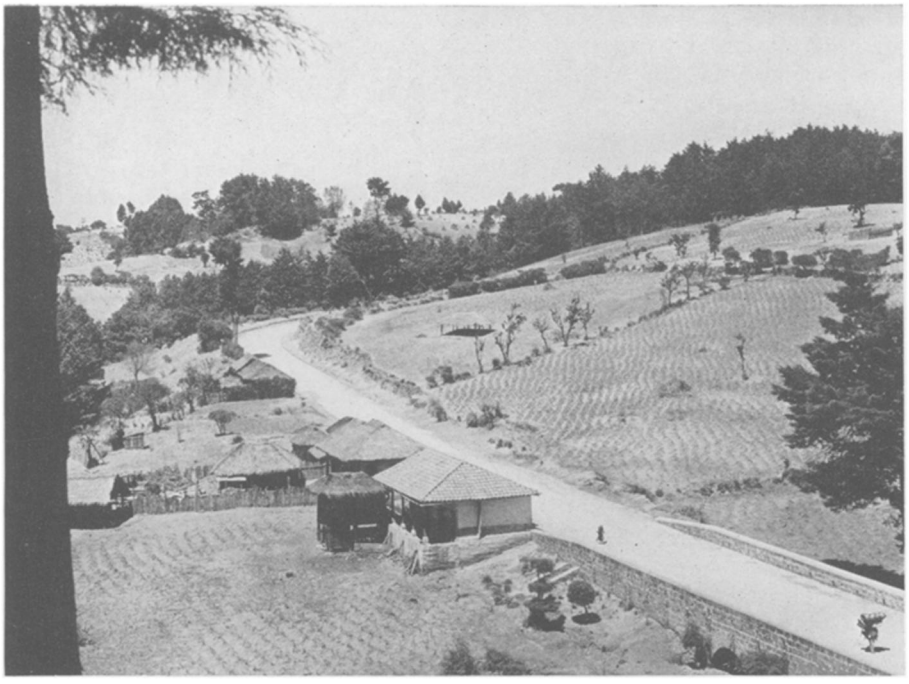
The hope of the Institute is to do 75% research and 25% extension work, Dr. Rolland Lorenz, the newly-appointed director, told me.

The idea of establishing a collaborative Agricultural Experiment Station sponsored by the Government of Guatemala and by the Government of the United States of North America was conceived late in 1944. By March of the next year the embryonic project had progressed so well that the two governments formally signed an agreement setting up the Instituto Agropecuario Nacional.

The primary purpose of the organization is to work on crops that we cannot grow in the United States, yet are necessary to us and can be grown in Guatemala. Rubber, cinchona from which quinine is extracted, and certain medicinal plants stand high on the list. Varieties of wheat, corn and beans grown in our sister republic must be improved, on the other hand, to help feed the workers producing these complementary crops so essential if the American continent is to be self-sufficient.

Guatemala largely finances the proj-

COLLABORATING—Dr. I. E. Melhus, director of Iowa State College's Tropical Research Center at Antigua, ancient capital of Guatemala, is carrying on experiments that may help both nations.



RAISING CORN—In the highlands of Guatemala the Indian raises this crop as the chief product on his small plot. The search for better corn has been carried to its birthplace.

ect. The institute is staffed by our Department of Agriculture scientists and Guatemalan agriculturally trained technicians. U. S. experts in horticulture, chemistry, soils, animal husbandry, agronomy and plant pathology are aided by Guatemalan assistants, enhancing their knowledge of research and extension technique.

Eventually the project will be able to stand on its own feet. Technicians and financial support will be withdrawn by the United States, leaving local men to carry on the work thus established, Graham S. Quate, our agricultural attache, points out.

Ambassador to Guatemala

This phase of our Good Neighbor program fits in perfectly with the interests and background of our Ambassador to Guatemala. Ambassador Edwin J. Kyle is a farm-minded diplomat. For 33 years this tall, lanky Southerner served as dean of agriculture at Texas A. and M. His heart and soul are in this research pointing the way to better crops and improved livestock in Guatemala and the United States

Antigua was chosen by Iowa State College as a good place for research because many important plants grown in the United States originated in this region. Guatemala is believed to be the home of upland cotton, some kinds of corns, many varieties of beans, peppers, sweet potatoes and some squashes. It is also the land in which such flowers as zinnias, dahlias and cosmos originated, Dr. I. E. Melhus, director of the project, pointed out when I located him in his headquarters next to a beautiful 200-year-old church.

This outpost of the college is set up to carry on researches in economic plants grown in Iowa and the midwest, corn in particular. Searching for germ plasm that will enhance our corn varieties at home, the group of six hopes also to develop improved lines to be given to the people of Central America. Corn that looks promising has already been found, and improved grains taken back to Iowa where they are being tried.

The influence of climate on corn is being studied at experimental plots located from sea level to 8,000 feet. From work carried on in this country slightly smaller than New York State, the Iowa State group hopes eventually to predict what corn varieties will best be suited to different climates throughout the whole American continent. Light intensity in different areas is being measured. Some day the influences of light, temperature, moisture and soil on this important crop may be fully explained.

This summer about 10,000 corn crosses were made. Seed that show promise are shipped to El Salvador,

Do You Know?

The average family opens about 500 tin-coated steel *cans* a year.

The largest *frog* in the world is the one-foot long African frog of the Cameroons.

The existence of *electricity* was known for centuries before it was put to practical work.

Herring scales, and other fish material, furnish the so-called *pearl essence* which is used to coat artificial pearls.

Recognizing the importance of *helicopters* in air service, the American government has now liberalized regulations governing helicopter flights.

Photographs can be taken of a person in the dark without his knowledge provided invisible infra-red rays are used to "light" him and a specially sensitized film is used in the camera.

Honduras, Costa Rica and other countries interested in conducting their own experiments.

What is probably the largest collection of native corn varieties in the Western Hemisphere has been gathered by these scientists. Row upon row of corn, carefully dried and labeled, hangs from the roof of the storehouse.

Corn pests also stand high on the list for study. In particular, corn strains resistant to the European corn borer are being sought.

Seek New Varieties

The group is on the look-out for new fruits, vegetables and cereals that may prove useful in North America. A relative of our familiar cucumber, indigenous to the highlands of Guatemala, may be one of these. Called *cieba,* it grows upon a bush instead of hugging the ground. Thus in a small garden it takes no more room than a tomato plant.

Should you find "jam berries" on the market in the next year or two, credit this research station with introducing them. Called *atomate,* the green fruit tastes like a tomato and is about half its size. Used by the Indians as the basis of chile, it is good for salads, pies, jams and sauces.

Corn has been planted by Iowa State and rubber by U. S. Department of Agriculture experts at Tiquisate, the 23,000-acre finca of the United Fruit Company. This American company that dominates Central America's banana trade, however, is not only host to other groups but uses the West Coast finca for its own experiments.

Miles of Pipes

Miles upon miles of pipe greet the eye, for here the value of overhead irrigation, even in a land with plentiful rainfall, is being proved. Banana diseases may also be whipped through research conducted here. Bamboo is an important project as it is needed to prop up banana trees heavy with fruit.

Here one finds the African oil palm, one of the best sources for an excellent type of vegetable oil. Teak, mahogany, rosewood and tropical cedar claim space in the experimental plot. As disease attacks banana plants, the area becomes non-productive. Such plants as African oil palm and teakwood are considered good for planting in these sick areas.

Sisal and other fiber plants, needed for making sacks and bags to carry the heavy produce, are receiving attention in this research finca. Cowpeas, velvetbeans and peanuts also are to be found.

Developing and introducing crops to the small land-owner is an important project of the United Fruit Company, states A. L. Bump, one of the sparkplugs in this important research.

Today our brown-skinned neighbors eat corn, corn, corn. In the bright tomorrow they may have a diet as varied as our own. And our own diet may be improved through this research.

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