A TREASURE HOUSE FOR FLORIDA

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South of Miami and Coconut Grove a highway runs along the ridge of rock overlooking the brilliance of the sea on the east. On one of the highest parts of the ridge, overlooking an area of glade land and mangrove swamp and glittering reaches of open sea, backed by acre after acre of what is called in Florida "high pine land," lies the United States Plant Introduction Garden. It is a great treasure house of potential wealth to this country, a store house of the plant riches of the tropics which are now being propagated for use not only in Florida but in Puerto Rico, the Philippines and the island possessions of the United States. It is the largest collection of tropical horticulture in the United States and the largest collection of tropical fruit varieties in the world. It has already played a tremendous part in the best development of Miami and of South Florida. The work that has been done here, quietly and steadily and with little publicity or much public understanding, has made up for the mistakes and devastation of boom times and men ignorant of the soil in a pioneer land. But more important than what it has done are the possibilities of its future.

The United States Plant Introduction Garden should be, and can easily be made, the greatest tropical arboretum in the world. Every year it should attract thousands and thousands of visitors. It can be the great show place of South Florida where the world can come to study and enjoy the tree and plant riches of the tropics, beautifully and permanently assembled. It can be a great tropical garden, completely overshadowing in magnificence such fine show places as the Magnolia Gardens of Charleston, the Ravine Gardens of Palatka and the botanical gardens of the West Indies and of Java. Because of its example, its influence and the distribution of its available material, it can help make the State of Florida truly the state of flowers, a tropical display garden in itself, where people can live richly among the fruiting and flowering plants of their own growing.

About $750,000 has already been spent in the development of this Plant Introduction Garden at Chapman Field. About 15,000 species and varieties of plants, trees, shrubs and flowers, have been brought in from all tropical and semi-tropical parts of the world. The fruits have included such important commercial crops, to the people of Florida, as mangos, avocados, many new citrus varieties and dozens and dozens of new and unknown tropical fruits to be developed for private and commercial uses. At present there are growing over 4,000 varieties of plants. Many of them are small and, as seedlings, handled in small space. The possibilities of their growth and development are enormous, but they are already too crowded in the present small acreage of the Introduction Gardens. The present acreage is in fact not large enough to take care of normal expansion and not nearly large enough to develop a permanent arboretum. If additional land can be acquired it is now planned by the Federal government that over $200,000 will be spent on this development in the near future.

The Plant Introduction Gardens, at what is called Chapman Field, now includes 95 acres, the rockiest part of a tract of 850 acres, which was purchased by the War department during the World War. A few buildings were erected by the Army, but when the war was over these were unused. In 1922 President Coolidge deeded the 95 acres to the Department of Agriculture, with 60 acres additional held under revocable title. The Department of Agriculture went to work immediately to consolidate the old Plant Introduction Garden on Brickell avenue and one maintained on land of Mr. Charles Deering, transplanted trees, built slat houses and propagating sheds. They expanded their facilities for taking care of new plants brought in from the tropics and continued the work of plant distribution which has been so important to this area. They have sent out also thousands and thousands of plants, tested and established here, to California, the Philip-
pines, and tropical island possessions of the United States. That rocky stretch which was turned over by the War Department, covered with pine and palmettos, is now a great garden, with royal palms over thirty feet in height growing along its avenues, with over four thousand mature tropic plants established, and dozens and dozens of varieties of tropic fruits. These include many of the valuable new varieties of mangos which the Introduction Gardens have developed, as well as the extensive tract given over to government rubber experimentation. It proves what can be done with the oolithic limestone underlying this area, which disintegrates when exposed to the air and with the right handling becomes valuable soil.

Another interesting new development for the Plant Introduction Gardens comes about because this location is one of the warmest on the Florida peninsula and because of its proximity to the sea practically entirely free of frost. Seedlings, such as potato seedlings, are being sent down here after being started in the fall in the North. They continue their growth down here all winter and in the Summer are ready to be set out in the North, thus giving them a continuous growing season. Stocks of rare varieties of plants to be grown later in California are now being given their first growing season in Florida and then shipped to California when the warm season begins there, thus insuring steady growth.

The greatest need now, of the Plant Introduction Gardens, in order to be made into the great tropical arboretum which is possible and already has been begun here in a small way, is to be given, by the War Department, the additional 755 acres. If the 95 acres which has been sometimes called "the government rock-pile" has by wise and patient effort been made into the valuable garden it now is, with its four thousand plants and its great history of distribution of its plants and seeds and cuttings, there is no limit to the possibilities, in beauty and in value, of the additional tract.

The army land, now lying idle, with the exception of a few runways and a hangar and small office, used only a few weeks each year, includes every sort of south Florida soil, with the exception of hammock land, for the purposes of proving and experimenting. There is the farthest sea beach where salt resistant plants of all kinds, especially hedge plants and trees valuable to Miami Beach and other Florida beaches, can be introduced and established. There is the expanse of mangrove swamp, in itself a most interesting feature, where trees can be tried out which would be valuable for tannin or pulpwood. The two hundred acres of Glade land, which the army at great expense would have to fill, and which would even then not be safe for landing heavy airplanes, is the most important soil in south Florida for trying out vegetables and other valuable food crops. Palm trees, of the hundreds of varieties which need proximity to the water, are to be established here, in a palm forest such as can be seen and enjoyed in only the most remote tropical countries. And finally, and more important than any of this other, the army owned acreage includes a great area of excellent pineland, stretching west to Ludlam Road. It is the proper development of this great tract, with government funds which would be available as soon as the land is acquired, which is of such inestimable importance to Florida.

Here are to be grown all the amazing variety of shade and fruit trees which can come to us from India and Java and China, from the coasts of Africa, the jungles of Madagascar, but, most important of all, from the tropical regions of South America and the West Indies and Mexico. The riches of those South American and West Indian jungles, in hard woods, in fruits, in medicinal plants, in vegetables and in ornamentals have not been more than touched. From the tropical jungles of the world have come always, since the beginning of history, the plants and fruits and trees which have taken root and adapted themselves in the temperate zone. It is only recently, in a very few years, since the beginning of the Plant Introduction Bureau of the Department of Agriculture, that in this country we have been able to get at something of the horticultural and botanical wealth of the tropics. But it is especially the success of such Introduction Gardens as this one at Chapman Field, which has made practical the growth in Florida of tropic fruits and trees.

It has been of immense benefit to South Florida. Here, in the last year, have been concent-
trated fifteen or twenty other Department of Agriculture experiments. Small stations maintained all over Florida for one sort of experiment or other, have been gradually moved to the Introduction Garden here. The greater facilities of this fine plant, the tendency of the government toward concentration in effort and economy in duplication, has strengthened the value of all the work here.

But the greatest work has been that of introducing and developing new and valuable fruits, of inestimable value to south Florida fruit growers. Dr. David Fairchild, for many years Chief Explorer of the Federal Division of Plant Introduction, and one of the men chiefly responsible for the development of the Plant Introduction Garden, has written at length about some of this work, as follows:

"It is gratifying to be able to state that the crops now growing in America whose beginnings are chronicled in the Inventories of the Plant Introduction Gardens have a value of several hundred millions of dollars measured by the prices of their annual crop returns. The service has paid handsomely in benefits to the farmers and gardeners of the country.

"What part of these successes has come out of the activities of these gardens in South Florida it is impossible to determine, but as I look back to 1898 when Miami had a scant thousand people in it, and a few scattered foreign plants were to be found in private yards, I can see how largely these gardens have contributed to the variety of useful and beautiful tropical plants in use here now. Shade trees along our streets and avenues such as the *Pithecolobium dulce* from Mexico, now seen everywhere on the smaller streets of Coral Gables and Miami; the spectacular sausage tree (*Kigelia pinnata*) with its immense hanging fruits; *Pongamia pinnata* from the Philippines on many of the streets and parks, often badly handled but a fine tree, *Acacia auriculiformis* from Australia now along the Tamiami Trail and in many other places; the Cajiput tree of Queensland (*Melaleuca leucadendron*) with its papery bark and scented foliage, spreading fast on the Everglades; the Lebbek tree from Egypt and Abyssinia (*Albizia lebbek*) which in winter hangs full of papery pods that chatter in the wind and give it the name of "Woman's Tongue Tree"; the Tree of Life of the ancient Egyptians, or Sycamore Fig of the Scriptures (*Ficus sycomorus*), which has attained giant proportions in some of the parks and private places of this region, are among the many plant immigrants of the Office of Plant Introduction.

"Turpentine mangoes had been brought in by Dr. Henry Perrine, who was massacred by the Indians in 1837. In 1889 the Department of Agriculture imported four trees of the famous Mulgoba mango, one of which was saved by Elmer Gale is still standing in West Palm Beach, and from a seedling of this was originated in the garden of Captain Haden in Coconut Grove the noted Haden mango, than which there is no more gorgeous fruit in the world. But it was not until the establishment of the first Government Garden that the real influx of East Indian mangoes with their fiberless fruits and different flavors began. There are fifty-two varieties in the Chapman Field Garden, representing the best of more than eighty distinct sorts brought in from time to time. It has been interesting to watch the taste for mangoes develop in Miami; from great indifference has grown up a perfectly amazing demand for this superb fruit, indeed the people of south Florida seem quite as addicted to mango eating as do the inhabitants of India or Ceylon or the Malay Archipelago. New varieties are originating here and it may not be too much to expect that here, on the northernmost range of its culture, may develop some of the showiest and finest flavored mangoes in the world.

"Here and there at the beginning of the century one found papaya plants growing in private yards, but it was left for the Office of Plant Introduction to gather seeds of the best sorts from every region where this amazing fruit tree is grown. Through a process of elimination private initiative has developed a paying culture of this remarkable melon-like fruit. In 1898 few people were to be found who cared for the papaya. Today it is so well known that the fruit stalls carry it all the year round and it has even begun to be shipped to the fancy markets of the north.

"In the orchard of avocados is a most inter-
estling collection made by the Agriculture Explorer, Wilson Popenoe, in the highlands of Central America and the Northwest portion of South America. His travels lasted over three years and constitute one of the signal pieces of exploration work in the Department. Not only are these direct introductions scattered throughout Florida, but as a result of the skill and vision of Edward Simmonds, hybrids from earlier introductions, such as the Collinson and the Winslowson, are now in commercial plantings. In 1908 there were West Indian varieties of the avocado in a few yards. Today there are more than a thousand acres of orchard plantings in the Homestead region alone, not to mention areas in other warm parts of the state. The spread of avocado culture in California has been even more spectacular. In 1898 few Americans had even heard of the avocado; today they are shipped from California and Florida and their value runs into the millions of dollars. The Plant Introduction Garden in Miami has played a very substantial role in the pioneering of this new and growing fruit industry.

"While the collection of citrus fruits in the garden is not comparable to some in the more truly citrus regions, yet it contains several of the remarkable new-flavored 'Tangelos,' made by Swingle and Webber in the beginning years of the century, hybrids between the tangerine and pomelo, or grapefruit. The unique and distinctive flavors of some of these new Tangelos is surely destined to make them popular, and lead to orchard plantings of considerable size, for they represent a distinct departure from the old line of citrus fruits just as does the grapefruit that has built up for itself a new industry quite distinct from the orange-lemon-lime one that runs back to prehistoric times. The lemon-lime, called the Perrine Lemon, is also a promising hybrid."

The government has already spent, on the 95 acres of the Plant Introduction Gardens, more than $750,000. Much of this money has been spent locally. Within the last eighteen months, with the use of CWA labor, the equipment of the Garden has been greatly improved and increased. It has now the most modern facilities in the south for the introduction, propagation and growing of all sorts of plants, three greenhouses for growing in shade, over an acre of lath houses, bins and beds to control acidity in soil and to sterilize soil, a great fertilizer mixing plant, wood working shops and offices. It is one of the finest plants of its kind in the country. With this already in use no additional equipment will be necessary for working the additional 850 acres. Over $80,000 have been spent on this plant this year.

Over $200,000, it is now planned, will be available this year from government funds, to make this the greatest plant introduction garden in the world and a tropical arboretum which will be a center of interest and value for the entire state of Florida if the additional acreage is turned over to the Department of Agriculture. The awakened attention of the people and of the government to the importance of the soil and of horticulture, the increased interest of the general public in such exhibits of plants and flowers as the Florida exhibit at the Century of Progress, the ravine gardens of Palatka, which have already attracted thousands to that city, prove that the possibility to this region of the proper development of the Plant Introduction Garden is unlimited. It is only the additional acreage which is now wanting, in the whole plan.