

## THE AVOCADO IN FLORIDA

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The avocado may be said to be as nearly indigenous to Florida as the wild orange, lemon and lime. All were introduced from elsewhere, either by the Spaniards or later settlers, none dating back to prehistoric times. Old government records show that in 1835 "Alligator pears were killed at St. Augustine", and they were very likely introduced from the-Bahamas or Cuba in the early part of the last century. The more tender West Indian type to which our trees belong, has been kept confined to the more tropical portions of the peninsula, gradually working up farther north, only to be destroyed by such severe freezes as that of 1835. For instance at the present date there are seedling trees on the lower St. Johns and at St. Augustine which are bearing fruit, the fact being that no cold severe enough to kill them has visited the state at large since 1905. The more hardy Guatemalan and Mexican types, which are grown in California exclusively, have never gotten a foothold in Florida, owing to the rapidity with which the seed loses its vitality, and the fact that these types do not appear in any of the nearby islands, the only exception which the writer knows of is a tree at Earleton, near Waldo, belonging to Baron von Lutichau. This tree, which belongs to the Mexican type, is about 30 feet high, and Prof. H. H. Hume writes that it first came to his notice in 1901, at which time it looked to be six or eight years old. It is reported to have never been injured by cold, and to bear fruit more or less regularly, while orange trees close by have twice been killed to the ground.

About the largest tree of the West Indian type is found at Dunedin, on the Gulf of Mexico, due west from Tampa. This tree was frozen to within 25 feet of the ground in 1895-6, but has apparently been unharmed since that time. It is about 5 feet in diameter and 40 feet high, with a spread of 60 feet. It produces regular crops of 2500 to 3000 fruit annually, averaging 1½ pounds each, and is owned by Mr. B. C. Bass. During the past eight years various seedlings of Guatemalan, Mexican, and Hawaiian origin, as well as budded trees, have been introduced by the United States Agricultural Department and have been distributed for experiment among growers in south Florida, and planted at the Miami Experimental Station. Among these, one of Guatemalan type, called Taylor, has been fruiting for four seasons, and has been deemed worthy of description in the Department publications. It is a seedling. Following is a description of fruit by Wilson Popenoe:

"Description of the fruit: General form pyriform to obovate; size—length 4 to 5 inches; breadth 2¾ to 3½ inches, weight 12 to 18 ounces; stem rather long, rather slender; base tapering, but not usually distinctly necked; apex rounded; surface undulating to rough, dull green in color; skin 1/16-inch thick, granular, woody, separating readily from the flesh; flesh yellowish-cream color, pale green near the skin, ½ to 5/8-inch thick, fiber none or very little, texture smooth and fine; flavor

fairly rich; quality dessert, good; good shipper; good keeper; seed cavity rather large; seed conical, 2 by 2½ inches, tight in the cavity with the seed coats closely adhering, season January 15th to April 1st at Miami, Florida."— (Wilson Popenoe.)

The variety called Chappelow (Mexican type) has also been fruiting for six or eight years on the plantation of Prof. Rolfs at Buena Vista. It ripens from May to July, but is not considered of any value as a market fruit being treated merely as a curiosity, coming when no other avocados are in season. There are quite a number of other trees, scattered about, from these government introductions, and from private importations from California, or elsewhere, of the hardy types, which are fruiting for the first time this year, or have set their second crop, though the Taylor and Chappelow have the longest records in Florida.

So far as we can gather from our brief experience, the various trees mature their fruit in Florida at approximately the same season they do in California, but chance for observation has been so limited, it is impossible to make any definite statement on this subject. One thing has been observed, which is likely to be of considerable importance in propagating trees for the middle and upper portions of Florida: trees of the hardy types, when worked upon stock of the same type, seem to be fully one month earlier in starting their spring growth than when the native West Indian stock is used. This will greatly militate against the frost resisting value of the tree, and tend to loss of crop and damage to foliage from late frosts, which the dormant tree on native roots would never feel.

The Trapp is the only variety which is being propagated extensively for commercial purposes, and while not quite an ideal fruit, it combines so many good qualities that it will be hard to find a rival for it, and it has already established its name and reputation in the markets, like the Riverside Navel, and the Indian River Orange. The original tree is a chance seedling growing on a rock ridge near the shore of Biscayne Bay, south of Miami, and bears the name of the pioneer who planted the seed. In shape it is, roughly speaking, spherical, flattened at the blossom end, and just a trifle one-sided, owing to the stem being placed at a slight angle with the axis of the fruit. In actual practice it packs like a grapefruit, and coming into market after the weather has become cool, may be safely transported to our most distant markets, some growers sending much of their crop to Seattle and Tacoma with perfect safety. The color is bright, glossy green, not changing when mellow; weight 1 to 2 pounds, meat rich butter-yellow, shading to green at rind.

In the most southern portion of Florida it matures about a month earlier than in the middle portion of the Peninsula, reaching maturity in October and November. After it has completed its growth, the fruit hangs upon the tree with wonderful tenacity, often enduring severe winter storms in exposed locations into March. Of course there is always a certain amount of fruit which falls off from week to week and month to month, varying very much from year to year, so that the earlier one can market his crop to advantage, the greater the quantity of fruit. In actual practice December is the favorite month, because by that time all seedling fruit is practically over with, and the market bare. Mr. Chas. Montgomery, who in 1912 was using a peculiar system of packing with corrugated cardboard and excelsior, is one of our most progressive and experienced shippers. I will here quote a letter just received from him, which gives the result of his

later experience in packing and marketing, and contains much interesting information.

"At whatever date the Trapp avocado seems matured (because it is a late fruit only in the ability of hanging on the tree a long time after it is ripe), I go over the trees very carefully, attempting to inspect every fruit and remove from them whatever fruit will pack 44 or larger that has been rubbed by the limbs or has creases in the side or anything whatever that would lead me to believe that it would be a drop, hence a cull. Within a period of two weeks after I believe the Trapps have reached maturity I remove the fruit that appears to be overripe and that within a period of five days drops and hence would become a cull. I continue this method throughout the season excepting on the trees I reserve for very late fruit. From these trees commercially I stand the loss of drops and culls because normally after you begin removing fruit from the Trapps, you must continue the operation or nature will throw all of them off. I use a bamboo rod on the end of which is a semi-circular wire quite heavy that will not bend with the weight of the fruit. I sew to this wire a piece of canvas that will hold three or four Trapps. At the extremity of this bag I have a section of the same wire bent in a fishhook shape to break the fruit from the tree. I gather all the fruit by hand that can be reached from the ground or six foot ladder. For fruit higher than this I use a pole. This fruit is handled mostly in picking baskets,—occasionally in Wilson picking bag. Each fruit is handled individually. The stem cut smooth with a knife using the same care as for eggs intended for setting purposes. I use a special crate for packing with  $\frac{5}{8}$ -inch board in the center, such as might be used for citrus fruits. The crate in outer dimension is the same as the six basket standard tomato crate. I have the crates made especially. The bottom boards being extra wide, are placed  $\frac{1}{4}$  of an inch apart from the center which would make an opening on each corner of approximately  $\frac{3}{4}$  of an inch. The opening between the slats on the side measure  $\frac{3}{4}$  inch.

"The top is solid the same as the standard tomato crate. With the exception of the middle board, all of the material in the entire crate is made of gum which is white and gives an attractive appearance. For packing this fruit 36 size use 4-5 4-5 which gives 18 fruit to the side. The four fruit are not packed in the corners. 44 size are packed two in the corner and one in the middle. When I ship three crates to a man I mark each end with his name and address and on the top with a heavy blue pencil "On", placing beneath it a dash and beneath the dash the figure 3. Should it be five packages I would write "On" and beneath it a dash and beneath the dash the figure 5, then the expressman employed as he picks it up sees right away that there are more packages marked to that consignee which will eliminate errors. I have found in two years experience out of my eleven years' experience that using the middle board divides the weight of fruit in half, eliminating the loss in over-ripe fruit during August and September, and some times early in October, between 75 and 85 per cent which for my own fruit practically pays for all of the crates used in the entire season. I have found only a few who object to the package and in every instance they are commission men who are not familiar with it. I use neither corrugated paper nor excelsior; only tissue wraps and make a complete full solid pack without bulge."—(Chas. Montgomery).

I will say that I have a few old Trapp trees which I keep for home use, and never pick a

single fruit. I allow them to drop as they will normally and find that they are never damaged by striking the sand, being invariably hard when they fall. They will take from one to three days to become mellow and eatable if kept in ordinary temperatures, while if placed in the refrigerator, at a temperature of 38 to 50 degrees, they will keep from one to three weeks.

Last year Trapps brought \$6.00 per doz. on the trees after Dec. first, and sales as high as \$35.00 per box f.o.b. were common, while what few were left after Christmas brought even higher prices. The largest grove in the state belongs to Mr. J. S. Collins, and is located close to the ocean at Miami Beach. There are about 100 acres in the grove, but they have not had proper attention until this past season, when for the first time they received mulching and a fair supply of fertilizer. Nevertheless, enough fruit was produced last year to pay expenses, while this year the crop is very promising. The trees are four to five years old, and the water table about 4 to 8 feet below the surface. The soil is deep sand, in some places underlaid with rock, but at a several foot depth, where it occurs.

The Pollock is another variety of great merit, but coming in August, September and October, it is of less market value. It is pear-shaped, solid and rich with a comparatively small seed, usually tight in cavity, and weighs from 2½ to 4 pounds, color same as Trapp. One specimen grown by Mr. C. C. Haight of Palm Beach, this month tipped the scales at 5 pounds even. It is an ideal fruit.

**Family** is the name applied to a tree originating on the plantation of Prof. P. H. Rolfs at Buena Vista, and named by him, because it seems such a desirable tree for family supply. Fruit is eatable from as early as July first to latter part of September, and is of excellent quality, being produced in enormous quantities, trees beginning to bear when very small. It is a long pear-shape, with a very small seed, loose in the cavity, and some seasons has been without seed. It is of no value as a shipper, owing to large cavity and loose seed; weight 1¼, to 2½ pounds, turns deep mahogany or purple when mellow.

**Estelle** is an early sort, which is sometimes good in late June, and has a tight seed generally, which makes it a shipping fruit. It originated on the plantation of H. H. Harrison of Fulford, on rocky hammock land. It is short pear-shape like the Pollock, but only ¾ to 1½ pound in weight; color persistent green like Trapp and Pollock.