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RACES AND RACIAL ORIGINS

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The racial classification of avocados is breaking down. Not only do we have varieties which are assumed to be natural hybrids between the Guatemalan and Mexican, and the Guatemalan and West Indian races,[1] as well as a few hybrids of known origin, but also—and to me, more important—we have the difficulty which I, at least, am experiencing in holding to characters which differentiate the West Indian race from the Guatemalan.

The Mexican race is sufficiently distinct from the others to have been considered by some botanists a distinct species, *Persea drymifolia,* a position to which I adhered at the time I published my "Manual of Tropical and Subtropical Fruits" in 1920. We have never been able to discover this form in a truly wild or indigenous state; the botanical characters on which its specific standing is based seem a trifle dubious; and many botanical authorities question the validity of the species. I am not a botanist so I have no right to an opinion; but at least we have, in this group of avocados, something so different from others that we can say we have a well-defined horticultural race.

But what about the West Indian and Guatemalan races? As far as I can recall, they have been differentiated by two characters (if we do not take into account hardiness): (1) the skin thickness, and (2) the length of time elapsing between flowering and the maturity of the fruit.

We know that the Guatemalans have, in general, skins which are thicker and with more stone cells (i.e., more woody) than the West Indians, and we know that, even when planted under the same climatic conditions, the Guatemalans take several months longer to reach maturity.

In our search for wild avocados we have found in Mexico, in Guatemala, and in Honduras trees which without too much stretch of the imagination might have given rise to the cultivated forms which we call avocados of the Guatemalan race. We have not yet found any wild form which seems obviously to be the parent of the West Indian race.

May not both these races have had the same origin? May not both of them have come from one of the wild forms we have seen in the forests of Mexico, Guatemala and Honduras, at elevations between 6,000 and 9,300 feet?

The matter of thickness and woody character of the skin no longer seems very important—to me at least. We have highland forms—those which we classify as Guatemalan—with skins no thicker nor harder than some of the fruits we call West Indians. So far as I can now see, the only remaining character to which we can tie our

classification is the number of months from flowering to maturity of the fruit. And even this is a pretty shaky proposition, for we have West Indians which mature in Florida as early as July or August, and others which do not mature until October; and we have Guatemalans which mature three or four months later than other Guatemalans.

I will repeat the question: Is it not possible that some wild form of *Persea americana,* developed by selection in the highlands of Central America (most probably Guatemala) has become the Guatemalan race, and that the same wild form, adapted to lowland conditions in tropical America, has become the so-called West Indian? I say "so-called" West Indian because we have reasons to believe avocados were not grown in the West Indies before the Discovery.

Assuming that this hypothesis is sound, we still do not know how long it has taken to bring about the differentiation which we recognize today: on the one hand, trees somewhat more cold-resistant, with thick-skinned fruits requiring a year or so to reach maturity, and on the other hand, trees somewhat less cold-resistant, the fruits of which commonly have thinner skins and mature in six or eight months.

Perhaps it has not taken—and does not take—very long; and this thought brings up another question. Are all the assumed Guatemalan x West Indian varieties in Florida really hybrids? Might they be nothing more than changes which have taken place when the Guatemalan race was taken from the highlands to the low-lands?

This hypothesis is suggested by a statement in "Avocado Production in Florida" by Wolfe, Toy and Stahl (Bul. 129, Agricultural Extension Service, Gainsville, Florida, 1946) which reads as follows:

"It has been noticed for many years that where Guatemalan and West Indian varieties are growing together seedlings from the former are likely to exhibit characters of both races, whereas seedlings of the latter have never been known to show any but West Indian characters."

We have come to feel that the Guatemalan and Mexican races have hybridized freely in Atlixco, Mexico, one of the few places known to us where they have been grown together for a long time. Out of this crossing and probably re-crossing we have obtained Fuerte, Puebla, and many of the new varieties secured in 1947 and 1948 by the Committee on Foreign Exploration of the California Avocado Society. This seems to be an argument in favor of natural hybridization. But I recall that one of the great authorities in California told me some years ago that seedlings of local origin were, in the main, proving better adapted to California conditions than introduced varieties. As a horticulturist who has spent some of the best years of his life hunting abroad for avocados which would prove commercially valuable in California this was, to me, quite a jolt. But I am wondering if it is not true? Does the avocado, in some of its geographical forms, undergo sudden adaptations to new climatic conditions?

(1) *I do not mention hybrids between the West Indian and Mexican races, because personally I have seen none, but J. B. Chambers Jr., who visited the region of Ciudad Victoria in the State of Tamaulipas, Mexico, writes in the 1949 Yearbook of the Texas Avocado Society that he observed "an abundance of West Indian and Mexican strains, with many hybrids from their combination."*