

New Avocados from the Home of "Fuerte"

DON FIESTER

Escuela Agricola Panamericana

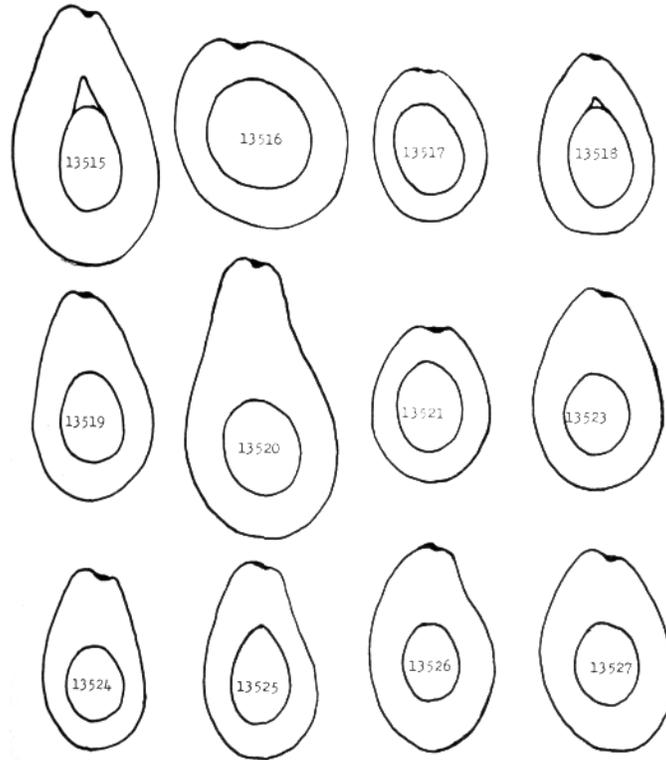
Tegucigalpa, Honduras

In October, 1947 Harlan Griswold, Carl Crawford, Louis O. Williams and Wilson Popenoe met at the Hacienda San Diego in Atlixco, Mexico. Their mission was to select from the several hundred "Aguacate de China*" seedlings found on this ranch, budwood of promising varieties which might further avocado production in California. Among these varieties may be found an answer to the search for avocados similar to Fuerte in general character and history, yet adaptable to areas in which Fuerte does not produce well; or others that may extend the season—to fill that ever-increasing need to supply the market that has been developed for avocados in the United States.

Upon completing the selection of varieties showing the most promising characteristics, budwood and scions were divided into two lots. One half of the material was taken to California by Harlan Griswold to be propagated at the College of Agriculture, U.C.L.A.; the other portion was sent to the Escuela Agricola Panamericana near Tegucigalpa, Honduras. By mutual agreement, the varieties were to carry the serial numbers of the Herbarium of Dr. L. O. Williams, Botanist at the Escuela Agricola Panamericana. Records both in black and white, and color photographs as well as herbarium specimens, will be kept on permanent file for each variety.

On October 28, 1947 the material arrived at the Escuela Agricola Panamericana by air mail from Wilson Popenoe. As no special "vivero" or nursery had been planted, on which to grow this valuable material, it was decided to use a small group of rootstock plants formerly intended for instructional purposes. These rootstocks were of the West Indian race, about fourteen months old, having been planted in August 1946. As in Florida, the West Indian race is the most vigorous of the three races with us.

*We are using the term "Aguacate de China" to designate these supposed Mexican-Guatemalan hybrids which have developed in Mexico of which Fuerte is the outstanding example. The history and meaning of this term has been discussed in the Yearbooks of the California Avocado Society.



Outlines of twelve New Hybrids from Atlixco. One fourth natural size.

Budding was started on October 30, 1947. As the rootstocks under our conditions were considered old, the buds were necessarily placed high on the stocks.

The cultural operations since that time have consisted of basin irrigating, mulching the basins and between trees with a thick layer of straw and the trees with tall 2"x2" stakes (due to unusually high bud unions). No fertilizer of any kind has been used as growth and general appearance of the plants have not shown any need for it.

The school is maintaining a collection of selected avocado varieties and in January 1948 material from the original trees was used to propagate plants to be placed in this collection.

The number of plants from which future requests for budwood may be filled, was increased in April 1948, using buds from our original plants; and we are now using material from the last-mentioned plants to bud into stocks in our present nursery. Thus, we have completed three generations of propagation within one year of the date the original scions were taken in Atlixco.

During the past year, observations have been made on the condition of the original plants, their manner of growth, etc. This information is given to illustrate how these "Aguacate de China" varieties develop under tropical conditions. It must be remembered that these field notes and measurements for the large part are not applicable, in California, as climatic conditions there do not permit as rapid growth as in the tropics. This information should be used only as a comparison of these varieties and

can not be considered when selecting varieties for planting.

13515—We have only one plant of this variety which was damaged by insects. Produces good budwood.

13516—This variety produces fair budwood. It has a stocky trunk, rather open conical habit of growth, with moderately separated branches and moderately open foliage.

13517—It is difficult to get good budwood from this variety, which will probably mean that it may be necessary to propagate by grafting. The variety is upright growing with close branching and moderately heavy foliage.

13518—Produces good budwood in quantity. The tree is very open with limited, separated branching tending to grow upright. Though it is early to know, this variety may not make a well formed orchard tree.

13519—Produces good budwood in quantity. The tree is thickly branched with dense foliage. Will probably make a shapely orchard tree.

13520—Good budwood is produced in quantity. Tends to conical tree form with moderately separated branching and moderately open foliage.

Form as an orchard tree fair, but rather spreading. This is one of the fastest developing varieties—seemingly much faster in growth than Fuerte.

13521—Produces fair budwood in moderate quantity. Has an unusually thick trunk, with moderately separate branching and moderately open foliage. Very upright growth habit. This variety, with 13520, is much faster in growth than Fuerte (see chart).

13522—Produces poor budwood. The tree is closely branched, moderate to heavy foliage tending to spreading habit of growth. Number 13522 was not taken to California by Mr. Griswold.

13523—This variety was lost from our collection.

13524—Produces good budwood in fair quantity. This number has very noticeable yellow-green foliage with wavy margins of the leaves turning upward. It is moderately heavy branched tending to spreading type of growth.

13525—Produces very good budwood in quantity, moderately separated branching and open foliage. This variety tends to undergrow the ends of the branches with new growth as with some peach varieties. It may not make a well-formed orchard tree.

13526—Produces fair budwood in rather limited quantity. This number has rather open branching and foliage, though not as much so as in 13518. May not make a first-class orchard tree.

13527—The budwood of this variety tends to go blind. The tree seems to grow by definite flushes in comparison with the other varieties. This number is heavily branched, with rather heavy foliage. Will probably make a shapely orchard tree.

Variety	Total Tree Height	Bud Union From Soil Level	Diameter of Tree Shade	Circumference of Stock 4" Below Union	Circumference of Scion 4" Above Union
13515	4'2"	2'5"	4'	3 ⁷ / ₈ "	3 ¹ / ₄ "
13616	11'7"	8'	8'	7 ¹ / ₂ "	7 ⁷ / ₈ "
13517	11'8"	7'7"	5'6"	7 ¹ / ₂ "	8 ¹ / ₄ "
13518	5'6"	5'1"	4'6"	4 ¹ / ₄ "	3 ³ / ₄ "
13519	10'	8'	7'6"	5 ³ / ₄ "	6 ³ / ₄ "
13520	12'10"	10'8"	12'	7 ³ / ₄ "	9"
13521	16'4"	14'2"	10'	10 ³ / ₄ "	12 ¹ / ₄ "
13522	6'7"	6'10"	6'8"	6 ¹ / ₂ "	6"
13523	No data				
13524	7'5"	5'8"	8'4"	6 ¹ / ₄ "	8 ³ / ₄ "
13525	10'7"	7'10"	9'8"	7 ³ / ₈ "	8 ³ / ₄ "
13526	9'	7'9"	9'4"	6 ⁵ / ₈ "	7 ¹ / ₈ "
13527	9'6"	8'2"	11'6"	8"	10"
Fuerte	9'4"	9'	8'	9 ⁷ / ₈ "	9 ¹ / ₄ "

As can be seen in the above table, one of the most outstanding characteristics is the unusually rapid growth of the trees. Part of this development is undoubtedly due to climatic conditions and the varieties being budded on large vigorous stocks, but also the inherent vigor of the "Aguacate de China" race can be seen by comparing the growth of these new introductions with that of other varieties. Fuerte, meaning "strong" in Spanish, was so named because of its noticeably vigorous growth and development but several of these new varieties grow more vigorously than Fuerte. It must be remembered also that the Fuerte tree measured was three months older from budding than the new introductions, but on the same aged rootstock.

Another interesting and possibly important factor observed is the rapid overgrowth of the hybrid scions on West Indian stocks. This overgrowth has appeared to a greater or lesser degree in nine of the twelve varieties at the end of only one year. Time will tell as to how much this difference will ultimately mean but it cannot go without mention at this time.

In California the tendency has been to use rootstocks of the Mexican race because of their cold resistance but in the future vigor, when growing the hybrids, may become an important consideration. Could the unsatisfactory behavior of the Fuerte variety in certain areas be influenced by the slow growing Mexican stock on which it was placed? It is not without possibility that the Committee on Foreign Exploration and others of the California Avocado Society may be called upon to return again to the Atlixco area to search for still others of these Mexican-Guatemalan hybrids, not as horticultural varieties, but as vigorous cold resistant rootstocks.

These "Aguacates de China" varieties will undoubtedly attract increasing attention in the near future, from growers in California, as well as in other leading production areas of the world. They, as attested by the Fuerte, are a step in the right direction and it is only through time and thorough trial that their ultimate place and importance in future avocado production can be ascertained.