

## The Parent Fuerte Avocado Tree

**A. D. Shamel**

*U. S. Department of Agriculture, Riverside, California.*

During the past autumn the writer and his wife visited southern Mexico on a vacation trip. This tour was the culmination of a dream that began with the first reading, many years ago, of Prescott's colorful "History of the Conquest of Mexico," and which was revived recently through reading several new and very interesting books on Mexico, including: "Old Mother Mexico" by Harry Carr, 1931; "Mexico," by Stuart Chase, 1931; "Stones Awake", by Carleton Beals, 1936; and "Mexican Interlude", by Joseph Henry Jackson, 1936. Furthermore, the writer has worked for more than a quarter of a century with Mexican pickers in citrus orchards where he has carried on bud selection studies. In the course of those contacts and others made during trips to South and Central America, Cuba and Puerto Rico, a fairly good knowledge of the Spanish language, customs, and other characteristics of the peoples of those countries has been obtained. Therefore, it seemed with this background the conditions were favorable for our appreciation of the Mexican people and the fascinating country in which they live.

It is not possible here to describe our very interesting and pleasant observations and experiences enroute to Atlixco, at Mazatlan, Guadalajara, Mexico City, Cuernavaca, Taxco, Puebla, Cholula, Oaxaca, Tlacolula, Mitla and other cities and localities that we visited, although the temptation to do so is a strong one. Nor is it practicable in this little story to review some of the fascinating historical features of the communities mentioned or to describe their present characteristics as we saw them. We will of necessity confine our observations to a brief description of our trip from Mexico City to Atlixco, the location of the parent Fuerte tree, and to the home of Snnor Alexander LeBlanc, in whose garden the tree stands.

### **BEAUTIFUL SCENERY**

A fine automobile road to Puebla, enroute to Atlixco, leads from Mexico City across what was formerly Lake Taxcoco to a pass through towering mountains on the east and south. The City of Mexico with an elevation of about 7500 feet above sea level, was founded by the Aztecs on an island in that broad shallow lake but more recently its waters have largely been drained off so that excepting during the rainy season, there is little water to be seen now near the great modern City of Mexico which has a population of about 1,250,000 people. However, the Puebla road is raised somewhat above the level of the lowlands through which it passes, the ancient Taxcoco lake bed, in order to prevent danger of its flooding during periods of heavy rainfall that occur occasionally from May to October.



Parent Fuerte avocado tree in the LeBlanc garden, 3 Poniente 24, Atlixco, Mexico, with Senora LeBlanc at left. Note the peculiar twisted growth of the main limbs that is characteristic of the progeny trees in Southern California.

This road is bordered by ornamental plantings including those of willow, populus, eucalyptus, and Mexican Cedar (***Cedrela Mexicana*** M. Roemer) trees. As we approach the mountain pass, the elevation of which is about 12,000 feet above sea level, we found that the mountain sides are clothed with deciduous-leaved oaks, and further up, with short and long-leaved pine trees. Near the entrance to the pass, on a clear day, one catches glimpses of the magnificent peaks, snow-capped Popocateptl (17,876 ft.), or "smoking mountain", and snow-crowned Ixtacihuatl (17,343 ft.), or "Sleeping woman". A valley in which the beautiful Rio Frio flows through a glorious mountain meadow with an ancient village nestled at the bridge, is a welcome interlude on the trip to Atlixco. Then, dipping down the mountain side, on the eastern slope, into the Puebla valley, Mt. Orizaba (18,701 ft.) rises majestically in the distance, one of the grandest mountains in all the world, its peak clad with perpetual snow and ice.

## **PUEBLA AND ATLIXCO VALLEYS**

In the Puebla valley after travelling through the ever present corn and bean fields and past apple, pear, Tejocote (***Crataegus Mexicana***, Moc. & Sesse.), Ciruela (***Spondia Mombin*** L.) fruit trees, and alongside a profusion of wild flowers on every hand, amongst which dahlias, zinnias, cosmos and tithonias predominate, the city of Cholulu is reached. This most interesting city with its great Aztec pyramid and many Spanish churches intrigues one's interest from its historical background and compels a stop in order to visit the top of this stupendous pyramid with the unexcelled panoramic views of the Popocatepl, Ixtacihuatl, Malinche and Orizaba mountains and of the fertile Puebla valley.

The paved highway reaches Atlixco by way of the City of Puebla. Puebla is about 80

miles distant from Mexico City. The Atlixco paved road turns off the main highway at about right angles and the distance is approximately 18 miles from Puebla to Atlixco, which is located in a somewhat smaller valley that is called Atlixco, according to our intelligent guide, Ernesto Santa Ana.

The city of Atlixco was an important one before the arrival of Cortez in 1519, the inhabitants cultivating mainly corn, beans, peppers and squashes much as they do today. The Spanish name Atlixco means "spring", or "source of water," and there are several large springs in the valley near the base of the nearby mountains, the waters from which are used for irrigation in the fertile fields, as is that of several brooks or small rivers which originate in the snowcapped mountains to the west. A picturesque hill, San Miguel, rises immediately behind the town and forms a conspicuous landmark rising about 500 feet above the town, crowned with a small church or shrine with many small houses clustered at its base.

Atlixco is situated about 6,150 feet above sea level and has an average of rainfall of about 35 inches during the season from May to October. The average mean annual temperature is about 60°F, with a maximum of about 90°F, and a minimum of about 35°F. It is evident, therefore, that the extremes of temperature are not quite so great there as in Southern California, and this is proved by the presence in the LeBlanc garden of several fruiting coffee bushes and thrifty banana plants. The population of this city, we were told, is somewhat less than 10,000 people, most of whom are employed in agricultural pursuits, in cotton mills nearby, or in the business enterprises of the city. Irrigation is practiced during the dry season in the culture of all the fruit crops noticed, but the field crops for the most part, particularly corn, seemed to be raised with the natural rainfall.

## **PARENT FUERTE IN LE BLANC GARDEN**

The Alexander LeBlanc home, in which the parent Fuerte tree stands, is located at 3 Poniente 24, Atlixco. The house is of typical and fine Spanish architecture and opens through a large doorway directly onto the street. Through a gateway nearby, our automobile was driven directly into the garden or "huerta" at the rear of the house. The garden, perhaps an acre or so in extent, is surrounded by a high wall and we gained the impression immediately upon entering, that plant lovers tend it because of the profusion of beautiful flowers and interesting looking trees which appeared to our eyes. Senor Le Blanc was in the City of Puebla at the time of our visit but we were charmingly received by his wife, Senora Delfina Smith LeBlanc, and her mother. The younger son, Otto, ten months old, was also present much to the pleasure of my wife, while the older son, Alexander, was with his father in Puebla.

The parent Fuerte tree is located in this garden near the house kitchen. The entrance way to the kitchen is paved with cement while close by are located concrete washtubs, the water from which has been used to directly irrigate the Fuerte tree during recent years in order to supplement the interrupted supply from the district irrigation aqueduct that is now out of repair, we were told by Senora LeBlanc.

Senora LeBlanc told us that the Fuerte seedling tree was first noticed in 1908, soon

after it began to bear fruit. Its exact planting date is unknown. In 1911 Mr. C. B. Schmidt, acting for Mr. F. O. Popenoe of the West India Gardens at Altadena, California, cut buds from it and sent them to the West India Gardens. Mr. Schmidt's label that he placed on this tree when the buds were cut is there in place with the number 15 still faintly visible. The name Fuerte was given to this variety by Mr. F. O. Popenoe, at Altadena, because the young trees proved to be "strong" or more resistant to the extreme climatic conditions that prevailed in Southern California during the 1913-14 season, than comparable trees of other varieties.



The parent Fuerte avocado tree in the LeBlanc garden showing the peculiarly "bent" habit of growth of the seven main limbs. Ernesto Santa Ana, our guide, standing beside the tree. The fruits mature during December and January and the tree bears heavily every other season. The crop on the tree was estimated to be about 500 avocados and no sign of sun-blotch, or other disease or insect pests were observed. Photographed Oct. 7, 1936.

## **PARENT TREE DESCRIBED**

The parent Fuerte tree in the LeBlanc garden on October 7, 1936, consisted of seven main limbs arising from the head at about 4 feet 10 inches from the ground. The limbs have an upright, peculiarly crooked or "bent" habit of growth, as shown in the accompanying photograph, that is characteristic of the progeny trees that we have observed in Fuerte orchards in Southern California during the past few weeks. The trunk of the parent tree, at 3 feet from the ground, had a circumference of 52 inches, or four feet and four inches, and the extreme height of the tree was estimated to be about 45 feet. Some Fuerte trees studied recently in Orange County, California, and which were planted in 1919 were found to have trunks of larger circumference than that of the parent tree.

The foliage of the parent tree was rather scant and appeared to be suffering from drought or from some similar cause. Senora LeBlanc stated that she thought this unfavorable growth condition was due to lack of adequate irrigation water. She said that the aqueduct from which they obtained their irrigation supply had been out of repair for three years and consequently less water was available than was considered to be necessary for the health of the tree. However, the writer is of the opinion that the waste water from the family wash tubs nearby, containing more or less soap, may be an important cause of the sparse foliage. As the irrigation water applied has been less in amount than formerly, it seems probable that the boron or salts in the wash water may not have been as fully washed down or out of the soil as was formerly the case.

We estimated that about 500 avocados were hanging on the parent tree at the time of our visit. These fruits were about two-thirds grown. Senora LeBlanc stated that the tree habitually bore a heavy crop one year and a lighter one the following season, or, had an alternate-season crop performance. The fruits mature and are picked during the months of December and January, or, during the winter season. It can be seen from this fact that the time of maturity of the fruits on the parent Fuerte tree is about the same as that of the trees of this variety in Southern California.

## **OTHER INTERESTING TREES**

Senora LeBlanc called our attention to another avocado tree located about 100 yards north and west of the parent Fuerte tree. It was considerably younger than the parent Fuerte tree, having a trunk with a circumference of 36 inches at 3 feet from the ground, and a total height of about 25 feet. The head of this tree was about 12 or 15 feet from the ground due, we were told, to the fact that the young tree had been closely crowded by other trees and shrubs. The top was a wide, spreading crown which developed from three main limbs. This tree was in heavy bloom at the time of our visit and a few very small fruits were visible. The fruits of this tree, Senora LeBlanc told us, are of the same shape, size, and with the same size of seed as those of the parent Fuerte tree. However, the color of the fruits is dark, resembling apparently that of the Puebla avocado variety. They mature during the months of June and July, or, the summer season, and the tree bears good crops every year, we were told. Both Senora LeBlanc and her mother were positive in their statements that the fruits of this tree were the equal of or superior to those of the Fuerte tree.



Summer bearing avocado tree in LeBlanc garden, 3 Poniente 24, Atlixco, Mexico. The fruits mature in June and July, are of the same shape, size and size of seed as the Fuerte fruits but have a dark colored skin. Senora LeBlanc said that they were equal to if not superior to Fuertes. Photographed Oct. 7, 1936.

The crushed leaves of the summer-bearing tree had a slight anise odor similar to that of the leaves of the parent Fuerte tree. Both trees are of seedling origin but from the resemblance of the budded progeny trees of the Fuerte variety in Southern California to that of the parent tree, it seems reasonable to assume that the budded progeny of the summer bearing tree will develop and perform in Southern California in a similar manner to that of the parent tree. Senora LeBlanc graciously gave us 25 budsticks from the summer bearing tree for our use in Southern California, and the buds have been propagated successfully since our return. It is hoped that this introduction will prove to be of commercial value to our industry.

Four small progeny trees of the Parent Fuerte tree were found in the LeBlanc garden, two of them planted several years ago but not in fruiting as yet, and the other two budded two years ago are still in nursery cans but will be transplanted during the

coming spring. Owing to the crowded plant conditions in the garden there is apparently little space available for additional trees.

Amongst the other trees and plants observed in the LeBlanc garden we noted the following: a very large black sapote tree (*Diospyros ebenaster* Retz.), acid and sweet lime trees, several fig trees, one very large, pomegranate tree, a few coffee bushes in fruit, two mandarin orange trees, two common large round-orange seedling trees, several seedling avocado trees, a very large Yucca that is said to bear edible blossoms, a large crape-myrtle tree, roses, rose geraniums, a chayote vine, Queen's wreath, dahlias, zinnias, 3 hibiscus, purple-flowered lantana, and several other shrubs and small plants not in flower at the time of our visit.

### **APPRECIATIONS SHOULD BE EXPRESSED**

It seems to us that the Fuerte avocado growers are under a lasting obligation to Senor and Senora LeBlanc, and to Mr. C. B. Schmidt who obtained the buds from the parent tree that Mr. Popenoe propagated in his West India Gardens at Altadena. So far as we know the parent Fuerte tree is the most interesting commercial parent avocado tree to Southern California growers, yet discovered, and as about 75 percent of the avocado trees that now grow in southern California are of that variety, it is probably the most important avocado tree to this district known at the present time. The LeBlancs have not received any reward for having furnished this variety to the California avocado industry, and, so far as I know, wish none. Nevertheless, it seems to me that they might occasionally be remembered by an expression of appreciation for their service to the industry.

Senora LeBlanc and her mother were most kind and gracious to us as they are to everyone. We regret that we were not fortunate enough to meet Senor LeBlanc and trust that this pleasure will be possible at some future time. In the meantime, both Mrs. Shamel and I, will always remember our interesting and delightful visit to the LeBlanc garden and the inherent charm of those with whom we came into contact.

Muchas gracias.