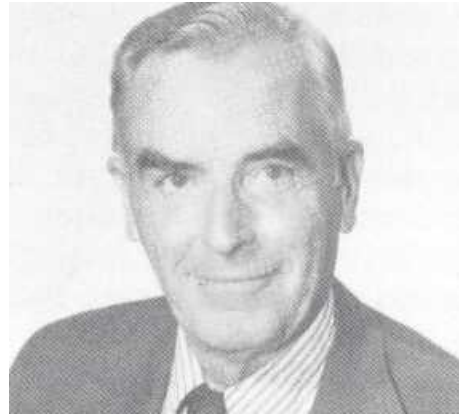


The Genus *Persea*

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In botanical classification, the genus *Persea* is one of some 50 genera in the family Lauraceae. The avocado was originally described as *Persea americana* from a tree in the West Indies by English botanist Miller in 1768. In addition to *Persea*, the family Lauraceae includes such trees as the ancient laurel or sweet bay (botanically, *Laurus nobilis*), camphor, cinnamon, sassafras, and the California bay. Most of the members of the family Lauraceae have aromatic foliage.

Of course, the avocado tree with its nutritious fruit was known to natives of Mexico and Latin America for centuries as a valuable food source. These native people had a variety of names for the avocado long before the botanists began applying their Latin binomial names such as *Persea americana* to the unsuspecting avocado. Our great, good friend Wilson Popenoe, from his 60 years of experience in Latin America, has assembled a fascinating list of common names used by inhabitants of different regions and different countries.

For example, Dr. Popenoe found that the Otomi tribe in central Mexico called the avocado *nttzani*; the Aztec name for the avocado was *ahuacatl*; the Tarascans in Michoacan called the avocado *cupanda*; and in Peru the avocado was known as *palta*. The Mayans in Yucatan, Tabasco, and Chiapas in Mexico, and in Guatemala called the avocado *on*. Apparently, the Aztec name *ahuacatl* was the basic for the Spanish name *ahuacate*, or *aguacate*, that eventually became *avocado*.

At the time of the Spanish conquest in the 1500s, avocado trees were growing, either wild or semi-cultivated, from northern Mexico south through Central America into northwestern South America, south into the Andean region of Venezuela, and also on some Caribbean islands.

To return to the prosaic twentieth century classification, the genus *Persea* is widely recognized as largely native in the Americas, with some 80 different species. The avocado, *Persea americana*, is the most important member of the genus commercially. There have been several taxonomic treatments of *Persea* since 1945. The one that we have used most in our collecting program for avocado rootstocks is a Memoir of the New York Botanical Gardens by taxonomic botanist Lucille Kopp entitled, "A Taxonomic

Revision of the Genus *Persea* in the Western Hemisphere (*Persea-Lauraceae*"), published in 1966. Prior to that, Dr. Caroline Allen's (New York Botanical Garden) paper in the Journal of the Arnold Arboretum in 1945 on the Lauraceae in Central America and Mexico was very helpful.

When we initiated our research on resistant rootstocks as a means of controlling Phytophthora root rot of avocado which was becoming a major problem in the 1940s, it seemed that the native avocados and related species of *Persea* in Latin America might be an excellent source of resistance. Prior to the 1950s, when our extensive explorations began, there had been some significant collecting trips by Dr. Popenoe, Dr. Art Schroeder, and several members of the California Avocado Society searching for new edible varieties as well as possible rootstocks.

Fig. 1. Some of the species of *Persea* in Latin America. All but *P. Rigens* have been collected in the plant pathology rootstock collection program of the University of California at Riverside, beginning in 1952.

PERSEA	
Family Lauraceae	
Primarily a new world genus - over 80 species	
Other related plants : California Bay, Camphor, Cinnamon, Laurel, Sassafras	
Species :	
<i>P. americana</i> : avocado (Mex., Cent. & S. America)	<i>P. nubigena</i> (Mex., Cent. Am.)
<i>P. borbonia</i> (Florida)	<i>P. rigens</i> (Cent. & S. Am.)
<i>P. caerulea</i> (Cent. & S. America)	<i>P. schiedeana</i> (Mex., Cent. Am.)
<i>P. cinerascens</i> (Mexico)	<i>P. steyermarkii</i> (Guatemala, El Salvador)
<i>P. donnell-smithii</i> (Mex., Guat., Honduras)	<i>P. veraguasensis</i> (Costa Rica)
<i>P. floccosa</i> (Mexico)	<i>P. vesticula</i> (Mex., Guat., Hond.)
<i>P. haenkeana</i> (Peru)	
<i>P. liebmanni</i> (Mexico)	
<i>P. lingue</i> (Chile)	

My early visits to herbaria in botanical gardens around the United States and in Latin America provided locations for many of the collections of *Persea* that we made in the 1950s, '60s, and '70s, and provided fascinating and informative discussions with a number of botanists, including Dr. Caroline Allen of the New York Botanical Garden, Dr. Louis Williams at the Escuela Agricola Panamericana in Honduras, and Dr. Kopp who studied with Dr. Allen. More recently (1991), Dr. Henk van der Werff of the Missouri Botanical Garden in St. Louis has been and continues to be very helpful.

As a result of the botanical contacts and fine contacts also with a number of scientists in various Latin American countries, we have made many potential rootstock collections in the past 40 years. In the past 20 years, Dr. Eugenio Schieber in Guatemala has been involved in our collecting program and has added some additional species and many different avocado cultivars. These results have already been reported on several

occasions. This paper reports that the botanists have continued their activities, and recently have described more new species of *Persea*.

Dr. Henk van der Werff, whom I had the privilege and pleasure of visiting in August, 1991, provided information on additional species of *Persea* and showed me the following collections in the herbarium:

- Persea paucitriplinervia*... described by C. L. Lundell from Baja Verapaz, Guatemala: a 50 foot tree in the forest, called 'Laurel'; fruit approximately two inches in length.
- Persea guatemalensis*... described by Lundell from the Department of Baja Verapaz, Guatemala: 70 foot tree, fruit not described, but probably small; 'Aguacatillo de montano'.
- Persea rufescens*...described by Lundell from Chiapas, Mexico: small tree to 18 feet; fruit small; elevation 7,500 feet.
- Persea chiapensis*... described by Lundell from Chiapas, Mexico, near Motozintla: 45 to 60 foot tree in virgin forest; fruit small; elevation near 8,000 feet.
- Persea chrysobalanoides*... described by Lundell from Chiapas, Mexico; 25 to 30 foot tree in virgin forest; fruit not seen; elevation 6,000 feet.
- Persea flavifolia*... described by Lundell from Mt. Ovando, Chiapas, Mexico: 20 foot tree; fruit small.
- Persea Gentlei*... Described by Lundell from Stann Creek Valley, British Honduras (Belize); tree 30 cm in diameter; fruit small.
- Persea perglauca*... described by Lundell from Baja Verapaz, Guatemala, in high forest: tree 60 feet tall; fruit to 1/4 inches in length; fruit green, with peppermint fragrance.
- Persea julianae*... described by van der Werff from Surinam, Wilhelmina Mountains, Juliana Peak; tree 20 feet tall, fruit not known.
- Persea sylvatica*... described by van der Werff from Heredia, Costa Rica: small tree (10 feet tall); fruit not known.
- Persea povedae*... described by van der Werff from Alajuela, Costa Rica: 35 foot tree, at 2,500 foot elevation; fruit small, green.
- Persea glabra*... described by van der Werff from Bahia, Brazil, at 3,700 to 4,000 foot elevation.



Fig. 2. Seedlings of Persea caerulea from Venezuela growing vigorously in soil infested with Phytophthora cinnamomi, compared with Topa Topa seedlings. P. caerulea proved to be not graft compatible with avocado.

Dr. Lundell was a botanist at the University of Michigan for many years. I had not seen his collections before; many of them are at the Missouri Botanical Garden herbarium, now. Some were collected many years ago, others are more recent. Dr. Lundell also described many collections from other genera of the Lauraceae in Latin America, such as *Licaria*, *Nectandra*, *Ocotea*, *Phoebe*, and *Endlicheria*. We have collected some of these genera in Latin America, and none of them has been compatible with avocado.

We will try to make collections of some of the additional species of *Persea* listed above, especially those with larger fruit that may be in the subgenus *Persea*.

Dr. van der Werff is very interested in and knowledgeable about plants in the Lauraceae, including *Persea*, especially. This should be a good collaboration. Dr. van der Werff, in addition to the collection of other *Persea* species, has some potentially interesting and different *Persea americana* types from several countries in Latin America.



Fig. 3. *Fifty-foot tree of Aguacate Mico (Persea tolimanensis) growing on side of Volcano Santa Ana in El Salvador, 1975.*

Fig. 4. *Sixty-foot old tree of Persea vesticula in San Juancito mountains, Honduras, 1954.*

