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An Avocado Relative from China

C. A. Schroeder
Professor of Botany, *Department of Biology*, *University of California, Los Angeles.*

Investigators in plant sciences attempt to seek information regarding the botanical affinity among the plant species, as data of this nature may prove important in the discovery of new plant types with disease resistance, possibly new metabolic plant products, or unique potential rootstock characteristics. Researchers on problems of the avocado continuously seek new sources of "wild" avocados. A great number of botanical species closely related to the common avocado of commerce, *Persea americana*, have their origin and native habitat in central and southern Mexico and in Central America (4,5). Many other close botanical relatives in the Lauraceae, the laurel family in which the avocado is classified, are native to regions somewhat remote from Central America. The species *Persea lingue.* for example is native to Peru and *Persea indica* is found as a wild form in the Canary Islands.

Possibly the most important member of the Lauraceae from the Orient is the camphor tree *Cinnamomum camphora* which provides not only a fine quality wood which is utilized for many purposes locally, but possibly of greater importance, this species has for centuries been the major source of the raw drug camphor which has widespread medical and industrial uses. Another species originating from the China area and possibly more closely related to the commercial avocado is *Persea nanmu*. This rather large upright tree has for centuries also provided a rather unique quality wood for various religious objects and social practices among some groups of Chinese. This plant has been known in the western world primarily as the tree which contributed the famous "Pillars of Everlasting Perfume*' of the tomb of Emperor Yung Lo. This temple has been in existence for more than 550 years.

Several rather fine specimens of the *Nanmu* are presently growing in the Sydney Botanical Garden, Australia. One tree in their collection is about 45 feet tall with a trunk diameter of approximately 18 inches. The leaf is similar to that of an avocado. The bark is slightly fissured and in small platlettes. The precise identity of these specimens is still questioned. An account of the "nan-mu" tree is given by Hooker (1) in a report of the Botanical Garden, Kew for 1877.

> "This part of Yunnan (which seems to be between 25° and 26° N. lat.) produces the famous *nan-mu*, so highly esteemed by the court for building purposes and by the wealthy for coffins, on account of its durability. This timber is to be seen in perfect condition after the lapse of nearly three centuries in the shape of enormous pillars in the tombs of the emperors of the Ming dynasty, and has usually been supposed by foreigners to be teak. The tree is tall, thin, straight growing, having no bough or twigs on the stem, but suddenly shooting out branches at the top, somewhat like a canopy over a maypole. Its bark is of a peculiar ashy grey colour,

and a specimen of the leaves, gathered by myself, accompanying this report, will prove beyond all doubt that it is not a member of the teak family. During the Ming dynasty this wood had already become scarce (having probably been everywhere cut down and not replanted), and was brought chiefly from almost inaccessible valleys, situated in the valleys inhabited by wild tribes. The imperial palaces at Peking were built almost entirely of this timber.

"At the present time this wood is imported into Shanghae in plants measuring 8 feet long by 13 or 14 inches in diameter, for which the highest price is 200 dollars per plant. Whole coffins range from 100 dollars to 800 dollars . . . The quality is judged of chiefly by the pungency of the scent.

"The leaves sent by Mr. Davenport to the Foreign Office cannot now be traced, but by the courtesy of E. Bradford, Esq., late Master of the Apothecaries Society, to which the specimens of drugs collected by Mr. Davenport were sent, I have been favoured with a further fragmentary specimen transmitted by Mr. Davenport, and also with specimens of the wood brought to this country by Wm. Lockhart, Esq., who states that it is also used largely by Chinese gentlemen who take a pride in their libraries to make boxes for sets of volumes, and also to place between sets of volumes.

"The leaves are too slender a basis for a certain botanical determination in the absence of flowers and fruits. But it appears extremely probable that the tree belongs to the family *Lauraceae*, and the leaves themselves agree very closely with those of *Phoebe pallida*, Nees."

Another description (2) of this Chinese species is that by Baber found in Hooker (Icon. 1880) in which he reports,

"Two days journey southeast of Chungking, in Szechuen, I found several specimens of about a foot in diameter, one of them having a straight branchless trunk of 100 feet in height, with the branches and foliage rising 25 feet above that; another had 70 feet of bare straight stem, and 90 feet of total altitude. Although the trunks are branchless, yet in many cases they send out shoots resembling saplings, which rise parallel with the trunk. The wood is white and close grained, and I do not believe that the pillars at the Ming tombs near Peking are of this wood. They look more like true teak. I have seen some much larger trees than the above, some two feet and more in diameter, straight and of great altitude. They are used in Szechuen for bridge work. I almost despair of procuring the flowers, for people who spent their lives beneath the trees have never seen them in flower, and the young trees which the missionaries have planted in places do not flower, possibly on account of their youth. If the tree produces any noticeable flowers at all it must be on the summit, which is inaccessible.

"Eventually, however, through the instrumentality of Pere Vincot, who resides at Chungking, flowering specimens were transmitted to the Kew Herbarium. From these the accompanying figure has been prepared, and they entirely confirm the previous identification of the tree by Professor Oliver (from the leaves alone) as a near ally of *Phoebe pallida*. (one of the Laurel family). The genus *Phoebe* is now merged in *Persea* and Professor Oliver has described the Nan-mu under the name

of *Persea nan-mu* distinguishing it from *Persea (Phoebe)* pallida chiefly in stature, in the form of the acumen of the leaves, and the character of the indumentum."

A recent personal communication with Dr. Chang-Kui Sheng of Nanking regarding the famous temple pillars indicates, “the species which became the supporting pillars of the Ming Dynasty Temple in Nanking, which according to the old Chinese literature was *Phoebe shearerii* Gamble of the family Lauraceae. This species is indigenous in Chekiang, Anhwei, Kiangsi, and Kiangsu (Chiangsu) provinces. It was formally flourished at the Purple Mountain (480 m.) just situated in the back of this Botanical Garden, but unfortunately the deforestion during the Ming Dynasty almost completely destroyed its existing, even now it became a rare and threatened species in their native regions, and its conservation and preservation is indespensable necessary."

Regardless of the precise identity of the specimens, this interesting botanical relative from China warrants a recording among those plants of potential value to extend our information on the avocado. There are possibly many other species of value which may be made available following the development of new opportunities to explore the great wealth of plant materials in this little known part of the world (3).

Persea nanmu in Sydney Botanical Garden, Australia. (Note person at base of tree.) A, general habit; B, bark and leaf specimen.

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