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Economic and Systematic Botany

PLANT IMMIGRANTS

Issued monthly by the Office of Foreign Seed and Plant Introduction, Bureau of Plant Industry, Department of Agriculture.

No. 91. November 1913.

Genera Represented in This Number.

Amygdalus	36664-5	Licania	36590-591
Annona	36562	Malus	36601
Belluccia	36535	Mangifera	36688
Berberis	36626		36690
Casimiroa	36602	Pahudia	36550
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Juglans	36599	Solanum	36597
	36662-663		

PLATE: Amygdalus davidiana.

(NOTE: Applications for material listed in this bulletin may be made at any time to this Office. As they are received they are filed, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.)

Amygdalus davidiana. (Amygdalaceae.) 36664. Seeds of the Chinese wild peach from Peking. "Fifteen hundred pounds of wild peach stones, collected from cultivated trees in various parts of Chile province. As there is a great deal of variation among these seeds, they may be graded according to size, the larger ones to be used as stocks for vigorously growing stone fruits, like peaches, apricots, certain plums, etc., while the smaller ones may be used as stocks for small or slow-growing stone fruits, such as bush-cherries, sand-cherries, dwarf plums, almonds, etc. A goodly portion of these seeds should also be devoted to testing against various diseases our stone fruits are suffering from, with the object of finding whether they will be less susceptible to such diseases when grafted on this remarkably healthy wild peach." (Meyer's introduction.) For distribution later.

Amygdalus davidiana. (Amygdalaceae.) 36665. Seeds of the wild peach from Peking. "A very vigorously growing form of the wild peach found in the well-trampled courtyard of the Chinese inn at Peking. Said to be a hybrid. The trunk five feet above the ground, measures five feet six inches in circumference. Chinese name, 'Mau tau shu,' meaning 'Hairy peach tree.'" (Meyer's introduction.) For distribution later.

Annona cherimola x *squamosa.* (Annonaceae.) 36562. Seeds of a hybrid annona grown at the Plant Introduction Field Station, Miami, Fla. "A fruit resulting from the cross of S.P.I. No. 26731, *Annona cherimola,* female, and S.P.I. No. 26741, *A. squamosa,* male. I made this cross in May 1910. The work was done between five and six o'clock in the evening. As you know *squamosa* pollen is ripe at that time, and the petals of the *cherimola* were forced open and the pollen dropped in." (Edward Simmonds, the hybridizer.) For distribution later.

Bellucia costaricensis. (Melastomaceae.) 36535. Seeds of the papaturro from San Jose, Costa Rica. Presented by Mr. Carlos Werckle, Department of Agriculture. "A shrub with large flowers and yellow fruits of the size of a gooseberry, and with a strongly pronounced taste, between sweet and sour. Found solitary and in groups in the valley of Diquis." (Pittier, Las Plantas Usuales de Costa Rica.) For distribution later.

Berberis sp. (Berberidaceae.) 36626. Seeds of a barberry from Chubut, Argentina. Collected and presented by Mr. J. R. Pemberton, Rio Negro survey, Buenos Aires,

Argentina. "An edible species of Berberis occurring everywhere in the foothills of the Cordilleras. These seeds were collected at a latitude of 43° south. The fruits are blue in color and are about three-eighths of an inch in diameter. They are of sweet flavor, resembling Muscat grapes, and the juice is so blue that it stains the mouth like huckleberries. Its local name is 'calafate', and Mr. Pemberton believes it will make an excellent hedge plant, growing about four feet high. It is extremely productive, and Mr. Pemberton has often sat down near bushes of these 'calafates,' and made a meal of these blue edible berries. This species should thrive in the Puget Sound region and along the coast of California, and possible in the south Atlantic coast region. It should be tested also as far north as Philadelphia." (David Fairchild.) For distribution later.

Casimiroa edulis. (Rutaceae.) 36602. Cuttings of the white sapote from Pasadena, California. Presented by Mr. Knowles A. Ryerson. "The Harvey, grown at Sierra Madre, California. It is the best variety growing in southern California at the present time. This particular tree is growing at the foot of the mountains in a soil which is pure, coarse decomposed granite. It never receives irrigation of any description and but scant cultivation yet bears enormous crops every year. The frost of January 1913 caught a few of the blossoms only." (Ryerson.) For distribution later.

Coutarea hexandra. (Rubiaceae.) 36661. Seeds from Puerto Bertoni, Paraguay. Presented by Mr. Guillermo T. Bertoni, Estacion Agronomica. "Quina de Pernambuca. A pretty little tree which reaches a height of nearly five meters in good soil. In poor soil it attains a height of two to three meters. As a medicinal plant its properties are similar to the Cinchona, and it is much used in Paraguay and Brazil. Besides its medicinal qualities, it is a pretty ornamental plant, not very leafy but with symmetrical branches. It loses its leaves in the winter, and in the spring when it begins to bud, it is covered with pretty yellow flowers with a sweet perfume. It is originally from the wooded regions of Paraguay and Brazil, and is found most frequently in stony soil on the high banks of rivers and ravines. It is a plant of the warm regions, but it resists the cold fairly well. It stands a minimum temperature of from three to five degrees below zero C. (25°F.) perfectly, and it is quite probable that it could resist a lower temperature." (Bertoni.) For distribution later.

Grevillea banksii. (Proteaceae.) 36705. Seeds from Rio de Janeiro Botanic Garden. "In foliage this species greatly resembles its congener, *Grevillea robusta,* but its habit of growth is entirely different and its flowers much finer. The trees in the Rio de Janeiro Garden, from which these seeds were taken, are about 18 feet in height, broad topped and rather open in growth. The bark is rough, ashy brown in color. The wood is brittle. The leaves are from 6 to 8 inches long, and from 5 to 6 inches wide, deeply divided, dull green on the upper side, silvery beneath. The flowers which are borne on spikes from 3 to 5 inches long, are a beautiful rose-red in color. It may prove of value as an ornamental tree in Florida and southern California." (Shamel, Popenoe, and Dorsett introduction.) For distribution later.

Juglans australis. (Juglandaceae.) 36599. Walnuts from Buenos Aires, Argentina. Presented by Señor A. J. Zubiaur, through Mr. W. F. Wight of this Bureau. "These seeds were secured from some locality in the north of Argentine. This species occurs from Tucuman northward to the Bolivian frontier and possibly even beyond." (Wight.) For distribution later.

Juglans regia sinensis. (Juglandaceae.) 36662-663. Walnuts from Ying tan ko, Chili province, and from the mountains west of Peking. "Large varieties suitable for trial in the lower Rocky Mountain valleys, one of them coming from an elevated region, much sheltered however by mountains." (Meyer's introductions.) For distribution later.

Licania platypus. (Rosaceae.) 36590-591. Seeds of the sonzapote from San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Department of Agriculture. The smaller sonzapote (No. 36590) from the Pacific Coast, with very good large fruit, having highly aromatic sweet flesh, and the large fruited form from 500 meters altitude on the Atlantic slope, with fruits weighing up to 4 pounds. For distribution later.

Malus sp. (Malaceae.) 36601. Seeds of an apple from Tsingchowfu, Shantung, China. Presented by Mr. W. M. Hayes. "Lin-kin apple. A species of crab which I found to make an admirable grafting stock. Seeds were secured from a perfectly ripe fruit which was grown in my garden from trees which I had set out for grafting purposes. It is not easy to get seed from the Chinese as they almost always pull the fruit before it is ripe." (Hayes.) For distribution later.

Mangifera indica. (Anacardiaceae.) 36688, 36690. Budwood of two mango varieties from the nursery of Eickhoff, Carneiro Leao and Company, Rio Janeiro. The two varieties are Rosa and Augusta, the first said to be very free of fiber, and the other to be of good quality though inferior to the Rosa and the Itamaracá. (Shamel, Popenoe, and Dorsett introductions.) For distribution later.

Pahudia rhomboidea. (Caesalpiniaceae.) 36550. Seeds of the tindalo from Lamao, Bataan, Philippine Islands. Presented by Mr. P. J. Wester, Horticulturist, in charge Lamao Experiment Station. "The tindalo is a tree reaching a height of from 25 to 30 meters and a diameter of 60 to 80 cm., occasionally up to 120 cm. It is usually without butresses and has a somewhat regular bore 12 to 15 meters in length. The crown, one half the height of the tree, is broad spreading, vase shaped, semiopen, and partly deciduous during the dry season. Tindalo has a wide distribution throughout the Islands, but is not abundant. It is found scattered usually on dry, shallow, or rocy soil on the low ridges and hills along the coast. Less frequently it is scattered in the edges of the dipterocarp forests. The bark is about 10 mm. in thickness, creamy yellow in color, and has an uneven surface due to the saucerlike depressions made by the shedding of the outer layers. It is covered with numerous corky pustules, and sheds in scroll-shaped patterns. The inner bark is brownish yellow in color. The leaves are alternate, simply compound, with three (sometimes four) pairs of leaflets. These are smooth with a white bloom beneath, from three and one-half to ten cm. long and from three to five cm. wide. The sapwood is white to creamy brown; the heartwood is yellowish red, becoming very dark with age. It is heavy, hard, durable, not difficult to work, has a fine, usually straight grain, takes a beautiful finish, *and is almost free of the defect of warping*. Tindalo has the following uses: fine furniture, cabinet making, fine interior finish (doors, floors, stairways, panels, etc.), railway ties, shipbuilding, and general construction purposes." (Whitford, The Principal Forest Trees of The Philippines, p. 39.) For distribution later.

Pleiogynium solandri. (Anacardiaceae.) 36606. Seeds from Brisbane, Queensland. Presented by Mr. J. F. Bailey, Director, Department of Agriculture and Stock. "A moderate sized tree, the trunk occasionally acquiring a very great thickness. Timber soft when cut, though it afterwards becomes hard and tough. Diameter 24 to 36 inches,

height, 40 to 60 feet. (Maiden, Useful native plants of Australia, p. 599.) Introduced as a possible stock for less hardy anacardiaceous fruit-bearing trees. For distribution later.

Polakowskia tacaco. (Cucurbitaceae.) 36592. Seeds from San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Department of Agriculture. "A cucurbitaceous plant, the fruit of which is used as a green vegetable. It is a near relative to the chayote, but the fruit is smaller, fusiform, set with stiff spines at the base and of quite a distinct taste. It is one of the primitive foods of the native Indians of Costa Rica, where it grows wild in fresh, shady places of the temperate region, and its use as a vegetable has been readily adopted by the Spanish Costa Ricans. Nowadays the plant is at least semicultivated on the central plateu. To grow it, a whole mature fruit is set in a rich loose leaf mold with the spiny end up and almost showing at the surface. The vines spread on the ground or on low bushes or supports. The fruits, which are about 2½ inches long and 1½ inches broad, hang from short peduncles and are picked when still green. After taking away the basal spines they are boiled in water, either whole or cut into small pieces, or pickled, or made into preserves. They are also a favorite addition to the native vegetable soups." (H. Pittier.) For distribution later.

Solanum quitoense. (Solanaceae.) 36597. Seeds of the lulo from Santander-Quilichao, Colombia. Presented by Mr. D. G. Prado. "A fruit resembling a tomato. The fruit when ripe is yellow, has a sour pleasant taste and is used to make cooling drinks. It lasts eight or ten days after cut and in the States it may be cultivated with profit to supply the soda fountains with a fruit to make flavoring extracts. I believe it can be grown in Florida, California and Texas." (Prado.) For distribution later.

NOTES FROM CORRESPONDENTS ABROAD.

Mr. F. W. Popenoe writes from Bahia, Brazil, December 5th, 1913. "The oldest inhabitant doesn't recall any such weather in December as we are having at the present time; we are told that it is very unusual, etc., but the fact remains that it is *wet*, and I think if we stay here much longer we will all grow web-footed. We have had a week of solid rain, rain every day and a good part of every day; my leather suitcase has turned into a mushroom patch, and my panama hat has grown whiskers. We simply can't get our clothes dry, and have given up trying to do so until the sun shows its face again, if it ever has the courage to do so.

I believe Mr. Dorsett and Mr. Shamel are writing you all about the oranges, so it will be better for me to confine my attention to other things in this letter. While as yet we have had practically no time to investigate fruits and food plants of this region, we have made a few general observations, and hope later on to go into the subject more thoroughly. In coming to a new country, I am always interested in seeing what the people eat; here we find several new dishes, one of which seems to be almost peculiar in this locality, and is, to my notion, an excellent thing. This is Vatapa, said to have come over here with the blacks from Africa. The name itself is African, according to our authorities. Vatapa has as one of its principal ingredients the oil of the dende palm, *Elaeis guineensis*. It also contains mandioca flour, at times peanuts or cashew nuts, and, I imagine, almost anything else one happens to have about the house. Vatapa seems to be analogous to Indian curry; it is a thick sauce served with fried fish, dried shrimps, beef, chicken, or Gloucester codfish, a standard article in these parts. To my taste it is as far ahead of curry as good American pie is of an English jam tart, and that is a long way, as Mr. Dorsett will testify.

Mandioca flour is a standard article of diet. In the market there are many venders with huge baskets of a paste made from mandioca flour called *cariman* (a Tupi word) which seems to be a staple with the poorer classes. Then there is a coarser meal, something on the order of corn meal, which seems to be a favorite with everyone. It is browned in a pan, with a little butter, and then becomes *farofa*, served with meats, and used to stuff turkeys in place of our sage dressing.

Someone ought to start a campaign in Florida to encourage the use of tropical fruits for sherbets and cooling drinks. They have this down to a fine art here. We have already tried five kinds of sherbets, and they are all good. They even use the avocado for this purpose; it makes a rather peculiar sherbet, of a light green color and very peculiar flavor. Milk is 43 cents a quart, so they do not go in very strong for ice cream, all the sherbets we have tried being made with sugar and water only. The mango makes an excellent one; this should certainly be used in Florida. Pitanga, *Eugenia uniflora,* is also good, and the jelly made from this fruit is excellent. The pitanga is very common as a hedge plant around Bahia, and makes a most beautiful and compact hedge. We hope to get enough seeds to enable plants to be distributed for planting a few hedges in Florida and California.

There is a plant here called *surucucu,* which is evidently a species of Pereskia. It has tough, hard spines, very slender and up to two inches in length, profusely produced all along the branches, making it very effective as a hedge plant, and this is its usual use around Bahia. Dr. Franceschi, however, told me that someone with whom he was acquainted has conceived the idea of using these spines for phonograph needles, and I believe the theory was that they produced a much softer and finer sound than any manufactured needle. Just as soon as we can get to it we are going to collect enough of these spines to allow of experiments to find out just how valuable they are for this purpose; if the scheme should prove feasible, it would be an easy matter to introduce the plant to Florida and produce the spines on a commercial scale, for the plants are extremely productive, there being a cluster of three to twelve spines at each leaf base, and the leaves are not more than an inch apart.

The Grumixama, *Stenocalyx brasiliensis,* impresses me as one of the best myrtaceous fruits I have ever eaten. The fruits came as near to being a European cherry of the Bigarreau type as anything I have seen; they are about the size of a cherry, with a stem an inch and a half long, and are deep crimson in color. The skin is thin and delicate; the seeds, one or two in number, are the size of small cherry stones and do not adhere to the flesh; the flesh itself is soft and tender, of very mild and agreeable flavor, and entirely free from any disagreeable character. This seems to be a very promising thing for Florida, as the trees are very productive, and are worthy of cultivation anywhere as ornamentals alone.

The Inspectoria de Obras Contra as Seccas maintains a Horto Florestal at Joazeiro, and Dr. Lisboa will give us letters to the director if we go there. We understand they are growing some interesting things. The date palm is considered *most promising* for the arid interior of Bahia state, and we have promised to assist the Department of Agriculture in obtaining offshoots of the best Arabian and Algerian varieties. From the fact that the date palm grows in that region, you can easily see that it must be very similar to our own arid Southwest, and it seems to us that it would be a very promising field for exploration. Of course, there is not a great variety of either wild or cultivated plants, but any that are found ought to stand a good chance of proving successful in some part of our country."

Amygdalus davidiana. Chinese wild peach.

"Fifteen hundred pounds of peach-stones, as they lay in a heap in a Chinese inn-court." Concerning this introduction, S. P. I. No. 36664, p. 710, this bulletin, Mr. Meyer writes "Of stones of *Amygdalus davidiana*, I have cornered the market, and have over 1400 pounds already in my possession and perhaps another hundred pounds will be added. For this lot we have had a whole lot of running to do to get them all in. The cost will not be anything extraordinary. I suppose that I can land this lot with shipping included at New York for about $200 American currency."....."I wish an arrangement could be made with some responsible party in some congenial locality in California to set out a couple of acres of these wild peaches, so as to grow our own seed supply in the near future and not be dependent on North China, with its sandstorms and revolutions." Photograph by Mr. Frank N. Meyer, Peking, China, October 7, 1913.

Amygdalus davidiana. Chinese wild peach.

"A very vigorously growing form of the wild peach found in the well-trampled courtyard of a Chinese inn at Peking. It is said to be a hybrid. The trunk five feet above the ground, measures five feet six inches in circumference. The Chinese name is 'Mau tau shu,' meaning 'Hairy peach tree.'" Photograph by Mr. Frank N. Meyer, Peking, China, July 24, 1913. This very vigorous growth under decidedly adverse conditions shows the resistance of the species and indicates a wider range of usefulness for stock purposes than had been suspected. See S.P.I. No. 36665, p. 710, this bulletin.