1921 BUREAU OF PLANT INDUSTRY

PLANT IMMIGRANTS

No. 178. FEBRUARY, 1921.

GENERA REPRESENTED IN THIS NUMBER.

	Page		Page
Amygdalus	1635	Gossypium	1639, 1640
Artocarpus	1635	Hylocereus	1636
Citrus	1635	Jagera	1636
Cynometra	1635	Mangifera	1636
Cyrtophyllum	1639	Merrillia	1637
Diospyros	1639	Oncosperma	1637
Dipterocarpus	1639	Pinus	1640
Dryobalanops	1638	Saussurea	1638
Flacourtia	1636		

Plates:

279. The ch'ing p'i t'ien pear (*Pyrus chinensis*).
280. The tien kua pear (*Pyrus chinensis*).

Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is largely made up from notes received from agricultural explorers, foreign correspondents, cooperators, and others, relative to the more important plants which have recently been received by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture; in it are also contained accounts of the behavior in America of plants previously introduced. Descriptions appearing here are revised and published later in the Inventory of Seeds and Plants Imported.

Applications from experimenters for plants or seeds described in these pages may be made to this Office at any time. As they are received the requests are placed on file and when the material is ready for the use of experimenters it is sent to those who seem best situated and best prepared to care for it. The plants or seeds here described (except such as are distributed direct or are turned over to specialists in the Department who are working on investigational problems) are propagated at our Plant Introduction Field Stations; and when ready to be distributed are listed in our annual check lists, copies of which are sent to experimenters in the late fall. It is not necessary, however, to await the receipt of these lists should one desire to apply for plants which are described herein.

One of the objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant breeders and experimenters. Every effort will be made to fill specific requests for experimental quantities of new or rare foreign seeds or plants.

David Fairchild.
Agricultural Explorer in Charge

Office of Foreign Seed and Plant Introduction,
Bureau of Plant Industry,
U. S. Department of Agriculture.

Issued March 22, 1921. Washington, D.C.

Any one desiring to republish any portion of this circular should obtain permission by applying to this Office.

Amygdalus communis x persica (Amygdalaceae), 51705. **Peach-almond hybrid**. From Morgan Hill, Calif. Seeds presented by Mr. Leonard Coates. "A peach-almond hybrid which, Mr. Coates says, bears fruit looking, in their early stages, like green peaches, but in early September the flesh begins to split open and expose the almondlike pit. He has tried this as a stock and finds that it produces the branching roots of a peach but is more vigorous than any other stock. He guarantees that it will make double the growth of the ordinary peach seeds in the nursery row. This hybrid was procured by Mr. Coates from a man living near Los Gatos." (Fairchild, Western Trip, 1919, p. 210.)

Artocarpus champeden (Moraceae), 51804. From Singapore, Straits Settlements. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A species of breadfruit cultivated for its fruits which are oblong and about 1 foot in length. It is much in favor with Malays. The seeds are similar to those of the jackfruit, and are roasted and eaten by the natives. Propagation is by seed." (Rock.)

Citrus nobilis deliciosa (Rutaceae), 51886. **Mandarin orange**. From Tripoli, Libia. Budwood presented by Dr. O. Fenzi, director, Stabilimento Orticolo Libico. "'Giant early mandarin.' A mandarin of very superior quality ripening as early as the end of October, with an extra large, well-filled fruit which has a thin skin and very juicy, sweet, aromatic pulp." (Fenzi.)

Citrus sinensis (Rutaceae), 51887. **Orange**. From Tripoli, Libia. Budwood presented by Dr. O. Fenzi, director, Stabilimento Orticolo Libico. "'Lim dem' (Tripoli blood orange), considered the very best in its section. It is generally seedless, oval in shape, with brick-colored skin. Some years ago a small quantity of this fruit was exported to Hamburg and realized higher prices than any of the best Spanish or California varieties." (Fenzi.)

Cynometra ramiflora (Caesalpiniaceae), 51769. From Bangkok, Siam. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A small but handsome leguminous tree with drooping branches, native to Malaya. The seeds are roasted and eaten." (Rock.)

A large, evergreen tree from the tidal forests of the Sunderbans, South India, and Burma;

Flacourtia rukam (Flacourtiaceae), 51772. From Bangkok, Siam. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A handsome tree with small edible berries which make fine preserves. Native to Malaya." (Rock.)

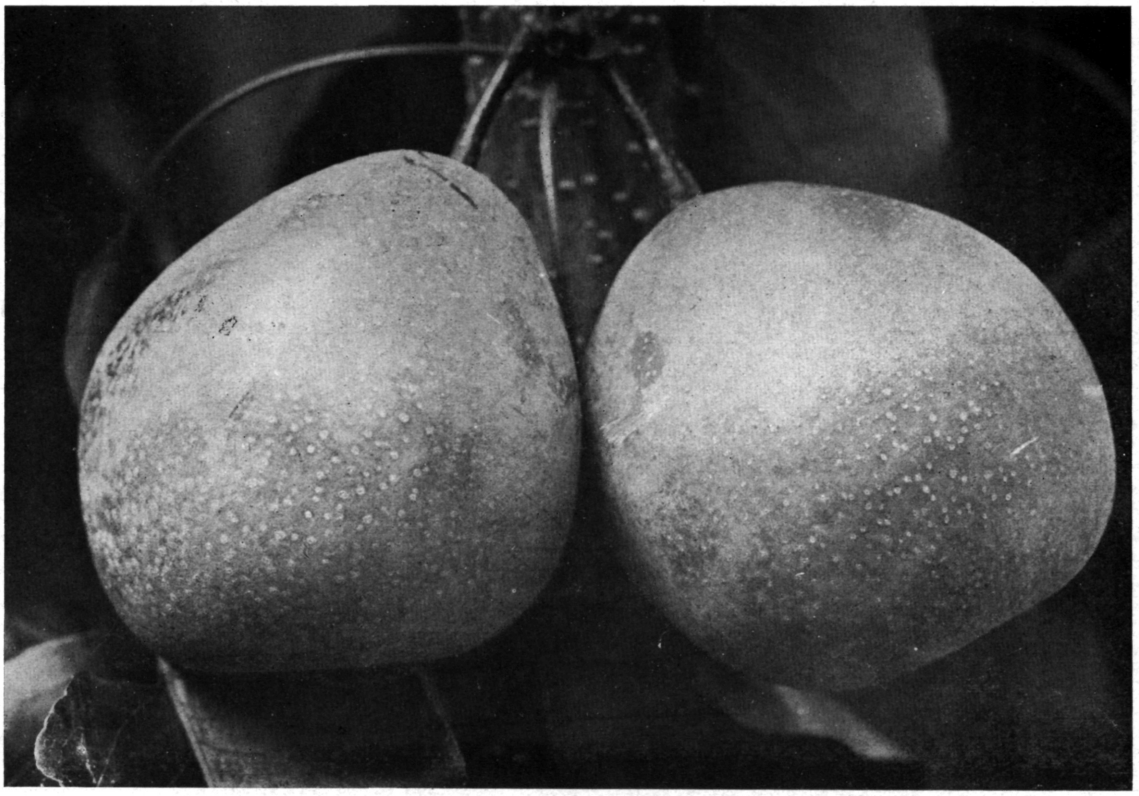
An unarmed tree with pubescent young branches, glabrous coriaceous leaves 3 to 5 inches long and 1¼ to 2 inches wide, and 4-flowered umbels. The tree is much cultivated for its fruits, the size of a large cherry. (Adapted from Hooker, Flora of British India, vol. 1, p. 192.)

Hylocereus sp. (Cactaceae), 51763. From Bogota, Colombia. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 510a. 'Pitahaya blanca' (white pitahaya), from the Bogota Market. A rare edible-fruited cactus cultivated in Cundinamarca, probably at altitudes of 4,000 to 5,000 feet. The fruits are elliptic and rather slender in outline, about 4 inches long, light yellow externally, containing a quantity of white, translucent flesh in which small black seeds are imbedded. The flavor and quantity of the fruit are rather better than those of other pitahayas I have seen." (Popenoe.)

Jagera speciosa (Sapindaceae), 51806. From Singapore, Straits Settlements. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A small tree, native to Malaya and New Guinea, with trilocular fruits which are borne in long pendent racemes. The tree is about 20 feet in height and quite attractive on account of the pinnate foliage and orange-red fruits which are much sought for by the natives." (Rock.)

Mangifera odorata (Anacardiaceae), 51774. From Bangkok, Siam. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A large tree with edible green fruits larger than the ordinary mangos, with a very strong odor. Sold on the market in Singapore." (Rock.)

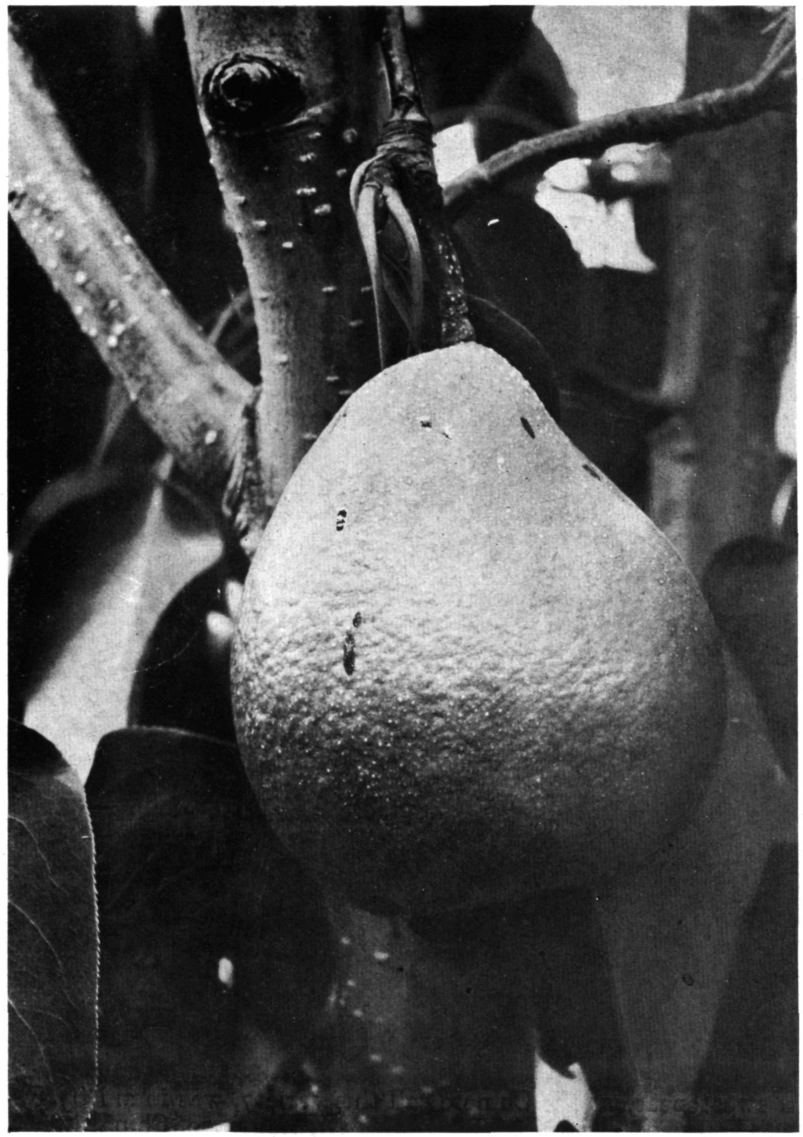
"This interesting relative of the cultivated mango is indigenous to the Island of Malacca, the home of most of the species of Mangifera. At Singapore it is called 'kuwini.' The name 'bumbum' appears to be applied to it in Java. It is a tall tree, said to attain a height of 80 to 100 feet, the trunk and crown resembling those of *M. indica*. It is glabrous throughout, or very obscurely pubescent on the panicle; the leaves are 6 to 12 inches long, and 2 to 4 inches broad.



THE CH'ING P'I T'IEN PEAR.

(*Pyrus chinensis* Lindl., S. P. I. No. 38268.)

The green-skin sweet pear, as the Chinese call this variety, was found by F. N. Meyer in February, 1914, in the village of Wulipu, Honan Province, China. As it was winter when he was there and as the pear ripens in August, he never saw the fruit but was told that it did not have good keeping qualities. The fruits photographed are the first to ripen in America. Tasted September 24, 1919, at the Plant Introduction Field Station in Chico, they were found to have an unusually refreshing flavor and remarkable juiciness, which make the variety well worthy of a wider trial. (Photographed, natural size, by David Fairchild, September 24, 1919, Chico, Calif.; P25661FS.)



THE TIEN KUA PEAR.

(*Pyrus chinensis* Lindl., S. P. I. No. 38271.)

Scions of this variety were collected by F. N. Meyer in the village of Wulipu, Honan Province, China, February 27, 1914. Mr. Meyer never saw the fruit, as the pear is not a good keeper, but its name means "sweet melon pear." Trees of this variety in the nursery of the Plant Introduction Field Station at Chico show an unusual degree of vigor and have borne this year for the first time. The fruit is sweeter and more aromatic than the Kieffer and ought to be good for baking. Its resistance to pear-blight is yet untested, but the quality of the fruit makes it worthy of distribution in regions where the European pears do poorly. (Photographed, natural size, by David Fairchild, September 24, 1919, Chico, Calif.; P25662FS.)

The odorous, flesh-colored flowers are one-fourth of an inch broad, and the petals three times as long as the reflexed, greenish sepals which are suffused with blood-red. The oblong, yellow-green fruit is spotted with yellow, and is offensive in odor, but the sweet, yellow, fibrous pulp lacks the taste of turpentine, which is so frequent in inferior forms of *M. indica*. The stone is compressed and fibrous. While perhaps of no great value for its fruit, this species possesses considerable interest as a possible stock for the mango and for breeding experiments. The fruit is said to be eaten by the natives in the region where it is found, but not by Europeans." (Wilson Popenoe.)

Merrillia caloxylon (Rutaceae), 51775 . **Katinga**. From Bangkok, Siam. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A tree with large, citronlike, somewhat woody fruit. The seeds are imbedded in a thick, resinous substance which may be of economic importance. The seeds germinate readily." (Rock.)

The katinga, a tree of considerable size, native to southern Siam and Upper Perak, is famous in the Malay Peninsula for its beautiful wood which is light yellow, ornamented with dark brown streaks and stains, fairly hard in texture, and taking a good polish. The thin, bright deep-green leaves 8 inches long, have 13 leaflets and a flattened winged rachis. The large, yellowish-green flowers are borne in small panicles. The fresh fruits are subglobose, 70 to 80 mm. in diameter, nearly smooth, gray-green, with a leathery pericarp 10 to 12 mm. thick with irregularly branched lacunae filled with resinous gum. The 5 to 6 locules, divided by cartilaginous solid walls 3 to 4 mm. thick, are filled with a transparent jellylike gum surrounding the seeds. It is possible that this species would be worthy of cultivation as an ornamental plant. (Adapted from Philippine Journal of Science, vol. 13, p. 338.)

Oncosperma tigillaria (Phoenicaceae), 51777. **Palm**. From Bangkok, Siam. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A palm similar to *Oncosperma horridum*, (S. P. I. No. 51776), but much more graceful, it also occurs in swampy forests." (Rock.)

A very elegant, armed palm, 30 to 40 feet high, distinctly annulate, and with a thick, graceful crown. The pinnate leaves are 10 to 12 feet long, the pendulous, leathery pinnae, 2 feet long, are reddish scurfy.

globose berries, the size of a carbine bullet, are borne on pendulous, purplish-red spadix branches. The trunk is much used for making posts. Native to borders of paddy swamps in Malacca, and in forests in Lainear. (Adapted from Calcutta Journal of Natural History, vol. 5, p. 465.)

Saussurea lappa (Asteraceae), 51852. From Rawalpindi, Punjab, India. Seeds presented by Mr. R. R. Stewart. The aromatic root of this tall perennial, native to Kashmir, at altitudes of 8,000 to 12,000 feet, is of medicinal value. The annual export has been as much as one thousand tons, a large portion used for incense, also as an insecticide, keeping moths from cloth. The leaves are also used for a similar purpose. (Adapted from Mueller, Select Extra-Tropical Plants, p. 492.)

Field Notes from Agricultural Explorers.

The following excerpts are from letters of J. F. Rock:

Kuala Lumpor, Federated Malay States.
September 26, 1920.

"Today I went into the jungle called the Kanching forest reserve at Ulu Selangor, about 20 miles from here. The forest there is mainly Borneo camphor (*Dryobalanops aromatica*). This seems the flowering season here, and most of the trees, of which there are many species, were all in flower. The slightest breeze brought down a shower of the white fragrant corollas resembling a snowfall. It was wonderful. Back of the agricultural department there is a stand of the Dryobalanops which is now 23 years old and the average height is 66 feet,- some are 100 feet in height; beneath them there is a solid stand of seedlings, all volunteers. The wood is very highly prized and I think it is one of the finest forest trees owing to its rapid reproduction. When I come here in December there will be many seeds and I shall be enabled to bring many with me."

"Today I saw my first King cobra (wild), a huge beast, only about 15 feet away from me; it disappeared rapidly under Dipterocarp leaves with which the ground was littered. I walked somewhat carefully after that. Two weeks ago a tiger was seen there and also a black panther, but we saw nothing today except that huge snake."

Bangkok, Siam.
October 5, 1920.

"That forest at Kanching is the most glorious I have ever seen, it is of course not a pure stand of

Dryobalanops but is mixed with Diospyros, Quercus, Dipterocarpus, Shorea, Eugenia, and other genera. The trees towered 200 feet into the air and made a canopy of white or, rather, a cream-colored dome. A species of Dalium was also in flower, pure white, which added to the beauty."

Bangkok, Siam.
October 15, 1920.

"*Cyrtophyllum fragrans*, a tree peculiar to the Malay Peninsula, is worthy of cultivation owing to its lovely clean foliage, white fragrant flowers, and also on account of its timber which is very valuable. The fruits are very small red berries and contain minute seeds. It is much used as a road tree in Singapore and throughout Malay, also in Bangkok.

"A tree of great interest is *Diospyros mollis*, in fact, it is one of the most valuable dye plants in Siam. The Chinese import yearly 3,000,000 ticats worth of silk, pay the duty on it, and all for the purpose of dyeing the silk black; every bit is again exported. There are large but rather primitive dye factories here. It is said that the Chinese have tried to grow the tree here in China but were not successful. I have seen material dyed black which had been washed twice a week for three years and it certainly was still as black as black could be. It is said to be a laborious process. The fruit must be still green when collected for dyeing purposes; it is mashed in water and the material is dipped into it, the water is then thrown away and the pulp is pressed and placed again in water, - this process is repeated many times. The material must be dried in the sun after each dipping. It is difficult to secure ripe seeds as the fruits are collected before maturity. This tree is about 25 feet tall, with fruits the size of a large cherry."

"At Wat Lum along the Menam River I found an interesting cotton plant (*Gossypium arboreum*), 10 to 12 feet high, and worthy of cultivation on account of its beautiful red flowers. There were very few seeds, but I am sending some.

"One of the largest trees here is *Dipterocarpus elatus*, reaching a height of over 100 feet. The natives extract wood-oil from this tree by burning large holes into the sides of the trunks and leaving a bowl-shaped cavity; after the trunk has been burned into, the resin begins to flow and it is collected in this cavity. The tree is very valuable."

Dai Hoi Chan Kian, North Siam.
October 29, 1920.

"I am writing you from paradise, for indeed this place is worthy of that name. I am camping in the mountains north of Chiengmai in a wonderful forest, beside a little stream which sends me to sleep like a lullaby. My camp is surrounded by mighty chestnuts, many species of oaks, and tall Dipterocarpaceae. I found three species of chestnuts with fairly large fruits and two other small species which I think it worth while collecting on account of the beautiful straight trunks and fine wood.

"Three days ago I ascended Dai Chom Cheng (5,500 feet altitude). On the summit there were lofty pines (*Pinus khasya*), and many beautiful tall oaks. From this point one could see many days' journeys toward the Yunnan border. Mountain after mountain and range after range, a perfect virgin field untrodden by any botanist or agricultural explorer. It is real paradise for a plant lover to be in a pine forest and to look down thousands of feet into deep ravines and forest-covered ranges inhabited by tigers, panthers, and elephants.

"I have collected 10 species of Quercus, all valuable trees. They grow on dry, sandy or gravelly slopes, at altitudes of 2,400 to 5,000 feet, and I should think that they would thrive in California and also in Florida. The acorns are very sweet and are eaten roasted. I have eaten many of them myself, and they are rather good. The chestnuts here are mighty trees with wonderful crowns and straight trunks. The chestnuts are quite sweet and very tasty when roasted. Both oaks and chestnuts are prolific bearers, and seeds are plentiful just now.

"In Chiengmai I heard of a cotton (*Gossypium sp.*) with a large lint of khaki color; it grows four days' journey from Chiengmai, and I sent coolies to get it. I have seen Siamese or Loa officials in uniforms woven from this brown cotton."

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
WASHINGTON, D. C.

Washington Scientific Staff.

David Fairchild, Agricultural Explorer in Charge.
P. H. Dorsett, Plant Introducer, in Charge of Field Stations.
B. T. Galloway, Plant Pathologist, in Charge of Detention Laboratories.
Peter Bisset, Plant Introducer, in Charge of Distribution.
Wilson Popenoe, and J. F. Rock, Agricultural Explorers.
R. A. Young, Plant Introducer, in Charge of Dasheen Investigations.
H. C. Skeels, Botanist, in Charge of Collections.
G. P. VanEseltine, Asst. Botanist, in Charge of Publications.
H. E. Allanson, E. L. Crandall, L. G. Hoover, F. J. Hopkins, R. N. Jones, P. G. Russell, and C. C. Thomas, Assistants.
Edward Goucher, Plant Propagator.

Field Stations Scientific Staff.

J. E. Morrow, Superintendent in Charge, Field Station, Chico, Calif.
Henry Klopfer, Plant Propagator.
Edward Simmonds, Superintendent in Charge, Field Station, Miami, Fla.
Henry E. Juenemann, Superintendent in Charge, Field Station, Bellingham, Wash.
D. A. Bisset, Assistant in Charge, Field Station, Brooksville, Fla.
E. J. Rankin, Assistant in Charge, Field Station, Savannah, Ga.

Special Collaborators.

Mr. Thomas W. Brown, Cairo, Egypt; Mr. H. M. Curran, Bahia, Brazil; Mr. M. J. Dorsey, University Farm, St. Paul, Minn.; Mr. Robt. H. Forbes, Cairo, Egypt; Mr. A. C. Hartless, Seharunpur, India; Mr. E. W. D. Holway, Faribault, Minn.; Mr. Barbour Lathrop, Chicago, Ill.; Dr. H. L. Lyon, Honolulu, Hawaii; Mr. H. Nehrling, Gotha, Fla.; Mr. Charles T. Simpson, Littleriver, Fla.; Mr. H. P. Stuckey, Georgia Experiment Station, Experiment, Ga.; Dr. L. Trabut, Director, Service Botanique, Algiers, Algeria; Dr. Wm. Trelease, University of Illinois, Urbana, Ill.; Mr. H. N. Whitford, School of Forestry, New Haven, Conn.; Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass.