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PLANT IMMIGRANTS.

No. 185.

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- 290. One of the most graceful of Malayan palms - (*Oncosperma tigillaria*).

Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This circular is made up largely from notes received from our agricultural explorers, foreign correspondents, cooperators, and others relative to the more important plants which have been received recently 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 which appear 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 requests are placed on file, and when the seeds or plants requested are ready for Experimenters, they are sent to those who seem best situated and best prepared to care for them.

However, not all the plants described herein are available. Some of them on arrival are sent direct to Experimenters or to specialists of the Department or of the State Experiment Stations. The remaining plants, with which extensive tests in this country are desired, are propagated at the Plant Introduction Gardens, and when they are ready for Experimenters they are listed in the Check Lists accompanying the ANNUAL CATALOGUE OF NEWLY INTRODUCED PLANTS, which is sent to cooperators each autumn. It is not necessary, however, to await the receipt of the catalogue should an Experimenter wish to apply for any of the plants here described.

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

DAVID FAIRCHILD,
Agricultural Explorer in Charge,
Office of Foreign Seed and Plant Introduction.

Issued September 30, 1921. Washington, D.C.

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Berberis sp. (Berberidaceae), 54269. **Barberry**. From Ecuador. Collected by Mr. Wilson Popenoe, agricultural explorer. "(No. 622. Hacienda La Esperanza, near El Angel, Province of Carchi.) 'Espino.' Plants collected at an altitude of about 11,500 feet. This is one of the handsomest of the wild barberries which I have seen in Ecuador. It makes an arborescent shrub up to 10 or 12 feet high, and has large, glossy, stiff, dark green leaves. The orange-yellow flowers, are produced in clusters about 3 inches long, and half an inch broad. They are followed by oval, blue-black fruits. The species is worthy of a trial as an ornamental." (Popenoe.)

Dioscorea latifolia (Dioscoreaceae), 53925. **Acom yam**. From Buenos Aires, Argentina. Tubers presented by Mr. D. S. Bullock, agricultural trade commissioner, U. S. Department of Agriculture, American Embassy. "'Papa de Aire en Parral' (climbing air-potato)." (Bullock.)

"A yam which produces its crop of edible tubers along the vine, in the axils of the leaves, instead of underground. According to Mr. I. H. Burkill, it is of African origin and is called **Acom**. Mr. Burkill states that it is very closely allied to *Dioscorea bulbifera*. The vine is round stemmed and the leaves heart shaped. The variety is not a very strong grower. The tubers are angular, brownish gray, thin but tough skinned, and in form resemble the liver of fowl - whence arises the name 'turkey-liver yam' by which the variety is known in some parts of Brazil. The tubers weigh from a fraction of an ounce to as much as a pound each, depending upon age and the condition of growth; they keep exceedingly well. The quality of the tubers is fair when they are properly prepared for the table. The cooked tubers are rather firm, but mealy. Boiled in the skin, the yellowish flesh is of unpleasantly strong flavor, but when the tubers are pared, cut into pieces, and boiled, the objectionable quality is removed. The boiled yam is also very good when slightly fried." (R. A. Young.)

For previous introduction see S.P.I. No. 51426, Plant Immigrants No. 176, December, 1920, p. 1619.

Persea americana (Lauraceae), 54270-54272, 54276. **Avocado**. From Ibarra, Ecuador. Budwood collected by

Mr. Wilson Popenoe, agricultural explorer. Quoted notes by Mr. Popenoe.

54270. "No. 626. Avocado No. 47. The parent tree stands in one of the huertas (fruit gardens) of the Hacienda San Vicente about half a mile north of the house at an altitude of 6,100 feet. This variety, so far as can be judged by an examination of the parent tree, is either a very unusual Mexican, or else a hybrid between the Mexican and West Indian races. The fruit is of good size, - about 18 ounces in weight, - and of convenient oval form. In appearance it is fairly attractive, being smooth, with the surface light green, washed or overspread with maroon-purple at the stem end. The skin is not woody; it resembles both in thickness and texture that of such large-fruited Mexican varieties as 'Pueblo' and 'Gottfried.' The flesh is cream-colored, with a very few, inconspicuous fiber markings. The quality is very good. The seed is small, and tight in the cavity. The tree appears to bear fair, but not heavy, crops."

54271. "No. 628. Avocado No. 49. The parent tree stands in one of the huertas at the Hacienda San Vicente, about half a mile north of the house. This is a Mexican avocado, of much the same general character as 'Pueblo,' but having a relatively smaller seed than the latter. The fruit is broadly obovoid, 8 to 12 ounces in weight, and glossy maroon-purple when fully ripe. The skin is of average thickness for a large-fruited Mexican avocado, the flesh devoid of fiber, and of good quality. The seed is tight in the cavity; in some specimens it is very small, in others, medium-sized. The parent tree is a very old and large one, and is said to be very productive."

54272. "No. 629. Avocado No. 50. The parent tree stands in one of the huertas of the Hacienda San Vicente, about half a mile north of the house. This is a fine large Mexican avocado of attractive and convenient form, having a small seed and flesh of rich, pleasant flavor. The form is broadly elliptic to nearly round, the color deep purple when the fruit is fully ripe, and the seed tight in the cavity. This may possibly be a hybrid between the Mexican and West Indian, but I can see no definite indication that such is the case."

54276. "No. 633. Avocado No. 54. The parent tree is growing in the huerta rented by Rosa Gon-

zales, at the Hacienda Carpuela, at an altitude of 5,300 feet. This is a good-sized Mexican avocado of excellent quality. The seed is relatively quite small, and the tree is said to be very productive. The form of the fruit is obovoid, the color purple. Commonly it weighs about 9 ounces. The variety is well worthy of a trial in California, and in the cooler avocado-growing regions of Florida."

Rubus spp. (Rosaceae), 54279 and 54280. From Ibarra, Ecuador. Plants collected by Mr. Wilson Popenoe, agricultural explorer. Quoted notes by Mr. Popenoe.

54279. "No. 623. 'Mora común.' From the Hacienda La Rinconada, in the province of Carchi, at an altitude of about 11,000 feet. This is a very vigorous *Rubus*, forming large clumps up to 15 to 18 feet high. Its stout canes are thickly clothed with short, stiff, bright maroon-colored hairs, while its leaves are formed of five leaflets 3 to 4 inches long. The white flowers are produced in large, loose clusters which are sometimes more than a foot in length, and are followed by an abundance of oval, deep purple fruits about three-quarters of an inch long. The seeds are moderately large, but not very troublesome in the mouth. The flavor is practically the same as that of the cultivated blackberry of the North, and the quality is good. Because of its productiveness as well as this latter feature, the species is worthy of a trial in the southern and western United States."

54280. "No. 624. 'Mora blanca' (white blackberry), from the Hacienda La Rinconada, Province of Carchi, where it occurs as a wild plant, at altitudes of about 11,000 feet. This species of *Rubus* is low-growing, half-shrubby in habit, sending up canes to a height of 6 to 8 feet. The stems are light green, covered with short stiff hairs; the leaves are composed of five smooth leaflets 3 to 4 inches long. The white flowers, about an inch broad, are borne in many-flowered clusters up to a foot long. The fruits are abundantly produced; they are oblong to oval, up to three-quarters of an inch long, and cream-white when ripe. The seeds give little trouble when the fruit is eaten. The flavor of this excellent berry is sweet and pleasant; the species is, in fact, one of the most interesting and promising of all the forms of *Rubus* I have

collected in South America up to the present time. It should be given a careful trial in the southern and western portions of the United States."

Stevia rebaudiana (Asteraceae), 53918. From Buenos Aires, Argentina. Plants presented by the director of the Botanic Gardens, Asuncion, Paraguay, through Mr. D. S. Bullock, agricultural trade commission, U. S. Department of Agriculture, American Embassy, Buenos Aires. "This plant has been the subject of at least two rather detailed researches, as follows: Rasenack, P., Arbeiten aus dem Kaiserlichen Gesundheitsamte, 28 (1908), 420-443; and Dieterich, Karl, Pharmazeutische Zentralhalle, 50 (1909), 435-40; 458-62.

"The latter reported the presence of two glucosides, rebaudin and eupatorin, whereas Rasenack found only one, which he terms only 'eupatoriums-sstoff.' Both investigators were interested in this material as a possible substitute for licorice, but determined that the active principles were not closely allied to glycyrrhizin. Dieterich reports that the glucosides are present in very small amounts, that their isolation is rather expensive and attended by considerable difficulty, and that the crude preparation comparable to licorice extract is with difficulty soluble and has a very bitter aftertaste. He states also that the plant is a very small one which occurs only in the mountainous regions of Paraguay. For these reasons he is very skeptical as to its potential commercial value, although both he and Rasenack suggest the advisability of cultivation experiments outside of South America." (E. E. Stanford.)

For previous introduction see S. P. I. No. 47515, Plant Immigrants No. 159, July, 1919, p. 1459.

Vaccinium sp. (Vacciniaceae), 54281. From Ibarra, Ecuador. Plants collected by Mr. Wilson Popenoe, agricultural explorer. "No. 621. 'Mortiño' from Hacienda La Esperanza, near El Angel, Ecuador, at an altitude of about 11,500 feet. A very abundant plant native throughout the Ecuadorean highlands at altitudes between 10,000 and 12,000 feet. It is not cultivated. The fruit is sometimes brought into the markets of Andean villages. In some parts of the country its ripening season, March to August,

zales, at the Hacienda Carpuela, at an altitude of 5,300 feet. This is a good-sized Mexican avocado of excellent quality. The seed is relatively quite small, and the tree is said to be very productive. The form of the fruit is obovoid, the color purple. Commonly it weighs about 9 ounces. The variety is well worthy of a trial in California, and in the cooler avocado-growing regions of Florida."

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is the occasion for picnics in the campo (country), the inhabitants of the towns and villages betaking themselves to the páramos (alpine plains), where this plant grows abundantly, to gather and eat the fruit.

"The mortiño is a slender, handsome shrub about 6 feet high (often lower than this), with very small, elliptic leaves crowded on the stems, and small bell-shaped, deep pink flowers produced in great abundance. The fruit is roundish, up to about one-third of an inch in diameter, deep glaucous blue, juicy, subacid and pleasant to the taste, containing several very small seeds. It greatly resembles some of the blueberries of the United States, and could probably be developed into a much more valuable fruit than it is today." (Popenoe.)

Notes on Behavior of Previous Introductions.

Mr. Nelson L. Elkins, Irvington, Ala., writes September 6, 1921:

"In the early spring of 1918 you sent me a plant of the Chinese dwarf lemon *Citrus limonia*, S.P.I. No. 23028) which was planted in a grove of Satsuma orange trees at the edge of the grove, and has never been protected in any way. It has withstood the same temperatures as the Satsumas; has never showed the least sign of being frosted even at the most tender tip ends of new growth; seems to be a very thrifty grower; and is now 8 feet high, with a spread of about 12 feet. Last year, its first bearing season, the tree bore about two dozen lemons of ordinary size. This year it has several hundred fruits of various sizes."

Mr. Benjamin Buckman, Farmingdale, Ill., reports September 10, 1921:

"*Castanea mollissima*, S.P.I. No. 36666, of which you sent me several plants some years ago has three burs on it this year; they are not yet ripe. The plants are low and very branchy. So far, there is no chestnut blight here and no weevil.

"I still watch with interest *Cydonia oblonga*, S.P.I. No. 33213, as it is vigorous and hardy and free from blight. I feel sure it will fruit next year. All other quinces here are tender and blighted."

Miss Frances Edge McIlvaine, Glen Isle Farm, Downingtown, Pa., writes August 12, 1921:

"*Iris ensata*, S.P.I. No. 40766, sent me in February, 1918, from Chico, Calif., has now grown into a good-sized clump. Its leaves have attained a length of some 2 to 2½ feet. Its flowers are very small, a pale blue, but so fugacious one has to be out very early to see them. The introducer's note said:

"The long grasslike leaves are very strong and fibrous and may be used in the garden for tying purposes instead of raffia."

"This could not be tested until this season. I am happy to say, however, that it is quite true. And in another year's time it may become one of the most important plants in my working garden. I tied the strong stalks of dahlias this June, using the ribbonlike leaves of the Iris, wrapping them twice around the dahlia stalk and around a 3-inch stake. It has dried and held perfectly. This will be a great labor-saver, as one could plant it about a garden at convenient intervals and have at hand a perennial source of tying material which is always urgently needed."

