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PLANT IMMIGRANTS

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE

This circular is made up principally of notes received from agricultural explorers, foreign collaborators, and correspondents, concerning the more important plants which have been received recently by the Office of Foreign Seed and Plant Introduction. It also contains reports on the behavior of plants which have been introduced in previous years.

Descriptions appearing here are revised and later published in the Inventory of Seeds and Plants Imported,--the permanent record of plant introductions made by this Office.

Plant Immigrants should be considered merely an ANNOUNCEMENT OF THE ARRIVAL OF PLANT MATERIAL. As a rule all material is propagated before being distributed; this may require several years.

The Annual Catalogue of New Plant Introductions describes briefly the plants available for distribution. Applications for seeds or plants listed in Plant Immigrants may be sent at any time, however, and will be filed in the order of their receipt. When material is ready for distribution, these requests will be given first attention; if their number is sufficient to exhaust the available supply of a given species, it will not be included in the Annual Catalogue.

Plant breeders and experimenters who desire plants not available in this country are invited to correspond with this Office which will endeavor to secure the required material through its agricultural explorers, foreign collaborators, or correspondents.

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

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Acanthosicyos horrida (Cucurbitaceae), 55486. From Pretoria, Transvaal. Seeds presented by Dr.I.B. Pole-Evans, through Dr. H.L. Shantz,physiologist in charge of Plant Physiological and Fermentation Investigations. "'Narras.' A remarkable cucurbitaceous plant which grows on the dunes of the Namib where subterranean waters exist. The plant subsists even when this water is at great depths. It forms thorny thickets on the sand hills of Southwest Africa, and is adapted to a hot,dry climate,with little or no rainfall. The fruit is about the size of an ostrich egg. Both the pulp and seeds are used as food by the natives. The fruits are produced in abundance and for about four months of the year the more primitive Hottentots are said to survive with practically no other source of food or water. The fruits are eaten and water is secured from them. The seeds when ripe are plump, about the size of a water-melon seed.

"The plant is one which should be of great value to our Indians of the Southwest if once established on the sand dunes of Arizona and southern California. It is doubtful if any plant can be secured which seems offhand to give greater promise in that region than does this cucurbit." (Shantz.)

Amygdalus persica (Amygdalaceae), 55487. **Peach.** From Santa Ines,Chile. Plants presented by Sr.don Salvador Izquierdo, Santiago, Chile. "'Pomona Improved.' Sr. Izquierdo writes that this is an improved form of the variety Pomona, grown at his nursery at Santa Ines. Preserved fruits which he has sent us to show the character of the variety, indicate that it is a fruit of unusually large size, deep yellow, clingstone, and of excellent quality for canning. It should be tried in California, where it may prove to have real value. Its season of ripening is not known." (Wilson Popenoe.)

Amygdalus persica (Amygdalaceae),55549. **Peach.** "Goodman's Choice." From Eastwood, New South Wales. Plants purchased from C.E.Vessey,Mount Tomah Nursery,through H. R. Wright, Avondale, Auckland, New Zealand. The following notes concerning the merits of this peach have been received from nurserymen in Australia:

From Herbert J. Rumsey, Dundas, New South Wales, June 13, 1922: "We have sent out a number of letters to friends who are in a position to know the behavior

of this peach and its comparison with Phillips Cling.* We have had a reply from Mr. Goodman, who states that this is easily the best quality canning peach the canners have ever seen, and that growers in this state (Victoria) are putting in more acres of it than of all other yellow clings together.

"His catalog description, quoted below, shows that it ripens about six weeks later than Tuscan Cling:

> 'Undoubtedly the greatest yellow-fleshed clingstone peach introduced for many years. The tree is a heavy bearer each season of medium-sized fruit that is admirable for canning. The skin has a red blush on the sunny side; the flesh is beautifully rich and translucent; the variety is remarkable for even crops and gradual ripening, which means so much when picking campaign is in progress. The fruit ripens towards the end of February, and, as the name indicates, represents my choice for canning.'

"We know the behavior of the clings generally in this state, and we find that they have a great tendency to be uneven in shape. Our own nurseryman states that Goodman's Choice is one of the best late peaches that he has come across, but as we have no growers for canneries around there, we can not give an authoritative report from that point of view ourselves."

From G.W. Peart, manager for C.J. Goodman, Bairnsdale, Victoria, June 14, 1922: "The flesh of this peach is wonderfully rich for canning purposes and the processed product is just as superior in appearance to other varieties as it is in taste. In quality it is superior to Phillips Cling. Canners in this state declare that they can obtain more dozens of high grade quality canned peaches from a ton of Goodman's Choice than from any other variety. This means that canners pay higher prices for Goodman's Choice. The variety is a regular cropper and has never failed to set a good crop in 12 years except once when a record late frost ruined all the stone crops in the district. Unlike Phillips Cling all the fruits on the tree come up to first-class cannery requirements." In another letter, dated June 30, 1922, Mr. Peart says further: "This peach originated about 18 years ago in one of our canning peach orchards at Mossiface, Victoria.

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*Phillips Cling is at present the standard canning variety in California.

After careful testing, the late Charles J. Goodman planted 3,000 trees in 1910 and we commenced to sell trees in 1915. Today I am selling more trees of this variety than of any other clingstone peach. Z.Akers, Shepparton Fruit Preserving Co., Shepparton, Victoria, has a block of 6-year-old Goodman's Choice and he claims to have harvested an average crop of 3½ bushels of fruit per tree when the trees were just four years old."

From E. Meeking, Senior Fruit Inspector, Melbourne, Victoria, June 14, 1922: "The Goodman's Choice variety of peach is considered, in the opinion of those competent to judge, the best canning peach which has yet been produced. It is a good cropper, produces uniform fruits, is of excellent color and texture, and its flavor is considered superior to that of any other canning peach yet produced."

From L.J. Wicks, Highbury, South Australia, July 13, 1922: "As a canning fruit Goodman's Choice is certainly O. K. The texture is just right; it makes a rather pale sirup which, however, is remarkably clear."

Amygdalus persica x *communis* (Amygdalaceae), 55470. Peach-almond hybrid. From Mexico, D.F., Mexico. Seeds presented by Prof. Juan Balme. The peachmond, a supposed peach-almond hybrid, is interesting to those engaged in breeding stone fruits.

Bolusanthus speciosus (Fabaceae), 55555. From Barberton, Transvaal. Seeds presented by George Thorncroft. A small, ornamental, leguminous tree from southeastern and southern Africa, with compound, deciduous leaves and long racemes of violet flowers which have given the name "Rhodesian wisteria" to the tree in some districts. The hard, white, durable timber is used only for wheel-spokes. The tree is subtropical in its requirements, grows best in good deep soil, and is propagated only by seeds. (Adapted from The Garden, vol. 78, p. 64.)

Capsicum annuum (Solanaceae), 55472-55475. **Red pepper.** From Valencia, Spain. Seeds presented by Henry C. A. Damm, American consul.

55472. "Paprika" No. 1.
55473. "Paprika" No. 2.
55474. "Pimiento largo dulce de España."
55475. "Pimiento Morron."

Dioscorea alata (Dioscoreaceae), 55559-55562. **Greater yam.** From Montserrat, British West Indies. Tubers presented by W. Robson, curator, Agricultural Experiment Station. Quoted notes by R. A. Young.

55559. "'West White.' This is a white-fleshed yam; firm but mealy when cooked, and of good flavor."

55560. "'West Red.' The inner skin of this yam is deep purple and the flesh is purplish, mottled with deeper purple; it is mealy when cooked, but rather lacking in flavor."

55561. "'Barbados Red.' The inner skin is purple, and the flesh is light purple with scattered fibers of deeper purple. The flesh is rather firm but mealy when cooked, and of very good flavor."

55562. "'Bottle-Necked Lisbon.' This is a white-fleshed yam which, when cooked, is mealy and of good flavor."

Dioscorea cayenensis (Dioscoreaceae), 55482. **Yellow Guinea yam.** From Guantanamo, Cuba. Tuber collected at Baltimore, Md., by C.E.Prince, Inspector, Federal Horticultural Board. "A yellow-fleshed yam having a somewhat bitter taste, but otherwise of very good quality. The vine is dark green, and thorny." (R. A. Young.)

Dioscorea cayenensis (Dioscoreaceae), 55567. **Yellow Guinea yam.** From Ogbomosho, Nigeria. Tubers presented by Dr. George Green. (Nos. 11, 12, and 14.)

"Three tubers, apparently all of the same variety, from a mixed lot; the flesh is cream colored, instead of yellow as in the variety of this species previously received from West Indian sources, and is less bitter; the quality is good. The vine is a glossy dark green and thorny, with alternate leaves." (R. A. Young.)

Dioscorea rotundata (Dioscoreaceae), 55568. **White Guinea yam.** From Ogbomosho, Nigeria. Tuber presented by Dr. George Green. (No. 1.) "The specimen received is white fleshed, mealy, and of fair flavor when cooked. The vine is round stemmed, glaucous, and armed on the lower parts with short but strong recurved thorns. The leaves are opposite, and on the lower parts of the main stem are modified into bracts from the axils of which arise lateral branches. The variety appears to be different in quality from the one commonly grown in Porto Rico." (R. A. Young.)

Garcinia mangostana (Clusiaceae), 55496. **Mangosteen.** From Peradeniya, Ceylon. Plants presented by Dr. F. A. Stockdale, Director of Agriculture for Ceylon, through Mrs. Arthur Curtis James. "In the hope of establishing the mangosteen in our tropical dependencies, many importations of seeds and plants have been made during the last 20 years. Indeed, the Office has made it a point never to miss an opportunity to secure new stock, whether in the form of a shipment of seeds by parcel post, or a wardian case of young plants which some traveler returning from the East has generously volunteered to bring home. This lot of plants, which Mrs. Arthur Curtis James secured from the Botanic Garden at Peradeniya, Ceylon, has been carefully brought back by her on the deck of the yacht Aloha." (Wilson Popenoe.)

"This delicious fruit is about the size of a mandarin orange, round and slightly flattened at each end, with a thick, smooth, rich red-purple rind which, when cut, exposes the white segments lying loose in the cups. The cut surface of the rind is a most delicate pink. The separate segments are whitish and covered with a delicate network of fibers. The texture of the pulp resembles that of the plum, and the flavor is indescribably delicious." (David Fairchild.)

Hordeum vulgare pallidum (Poaceae), 55551. **Barley.** From Valparaiso, Chile. Seeds purchased through S. Reid Thompson, American vice consul in charge. "In Chile 'Forjara' barley is cut twice for hay, and after that a third crop gives a good yield of grain. If this barley would give similar results in Oregon it would be of very great value." (F. C. Reimer, Oregon Agricultural College Experiment Station.)

Juniperus procera (Pinaceae), 55484. **East African cedar.** From Jamaica Plain, Mass. Seeds presented by Prof. C. S. Sargent, Arnold Arboretum, Harvard University. "This is probably the largest and handsomest juniper in the world. It is a native of the high mountains of eastern tropical Africa, and should prove an extremely valuable tree in the mountains of the West Indies; it may grow in the southern United States." (Sargent.)

Lycopersicon esculentum (Solanaceae), 55483. **Tomato.** From Naples, Italy. Seeds presented by the Italian School of Agriculture at Portici, through Homer M. Byington, American consul, Naples, Italy. "'King Humbert.' This belongs to the group of tomatoes used by the

Italians for making tomato paste. The fruits are pear shaped. The vine is very vigorous and quite productive." (D. N. Shoemaker.)

Introduced for the use of specialists in tomato breeding.

Lycopersicon esculentum (Solanaceae), 55503. **Tomato.** From Buenos Aires, Argentina. Seeds presented by D.S. Bullock, agricultural commissioner, Bureau of Markets and Crop Estimates, U. S. Department of Agriculture. "Perfeccion." Introduced for the use of specialists of this Bureau who are engaged in tomato breeding experiments.

Millettia megasperma (Fabaceae), 55565. From Abergeldie, New South Wales. Seeds presented by Hugh Dixson, Summer Hill. "This plant is quite unlike Chinese or Japanese varieties of wisteria. It has dark-green foliage, and is a rank grower when established,- mine is growing over a park railing 90 feet long, 4 feet wide, and 5 feet high, and has to be kept within bounds on width and height. It is not particular as to soil, but I would not advise a heavy clay. The plant stands 8° to 10° of frost without injury. The flowers are darker purple than those of the Chinese variety, sweet scented, and are borne in dense panicles. It is a very shy seeder, with seldom more than one seed in a pod, but it strikes root freely when layered and also from cuttings. The root of a layer afterwards potted had the largest number of nodules I have ever seen on any leguminous plant. It is an exceedingly rare plant simply because it is not known." (Dixson.)

Nageia nagi (Taxaceae), 55477. From Okitsu, Shizuokaken, Japan. Seeds presented by T. Onda, director, Government Horticultural Experiment Station. An evergreen subtropical tree 30 to 60 feet high, with very narrow, bluish green sharp-pointed leaves about 3 inches long and arranged in two rows on the branches. The fruit is a small, fleshy, purplish black drupe which emits a balsamlike fragrance when cut. In Japan, where this tree is native, the white, fine-grained wood is used for furniture and general building. Propagation is easily carried on by seeds, of which the tree produces an abundance. (Adapted from Useful Plants of Japan, Agricultural Society, Tokio, p. 145, and from Revue Horticole, vol. 86, p. 77.)

THE CURUBA, FAVORITE FRUIT OF THE COLOMBIANS.

(*Passiflora mollissima* (H. B. K.) Bailey, S. P. I. No. 51399.)

In Bogota, capital of the Republic of Colombia, no fruit is more popular than the curuba. Usually it is prepared for eating in the form of a "sorbete," or sherbet. The pulp is put through a sieve to remove the numerous seeds and is then mixed with milk and sugar. Like many other passifloras, the plant is of value as an ornamental; it is a vigorous climber with attractive foliage and beautiful deep-pink flowers 3 inches in diameter. It is sufficiently hardy for cultivation in California, where it has been planted occasionally, but where its fruit has never been appreciated, probably because the proper way of eating it was not known. (Photographed by Wilson Popenoe, Bogota, Colombia, September 19, 1920; P18056FS.)

Pl. 312.

A NEW BEAN FOR SUBTROPICAL REGIONS.

(*Erythrina edulis* Triana, S. P. I. No. 51357.)

The "chachafruto," or "balu," is a gigantic bean produced by a small tree which grows in the Andes of Colombia. The pods, which are borne in clusters, contain two to six plump, dark-brown seeds, each 2 inches long by more than an inch in thickness. When boiled, these have the flavor of Lima beans, with an added trace of sweetness. They are very agreeable to the taste and are considered an excellent food in Colombia. Probably they can be grown in southern Florida and in a few parts of California, as well as in many other subtropical regions. The tree is much like the common *Erythrina cristagalli* in appearance; it reaches 20 or 25 feet in height and bears handsome orange-scarlet flowers. (Photographed by Wilson Popenoe, Fusagasuga, Cundinamarca, Colombia, September 15, 1920; P18058FS.)

Prunus majestica (Amygdalaceae), 55476, 55498, and 55500. From China. Seeds collected by J.F. Rock, Agricultural Explorer of the Bureau of Plant Industry. Quoted notes by Mr. Rock.

55476. "(No. 2967. Manoh, Yunnan. March 30, 1922.) A large, handsome tree, 40 to 50 feet in height, with large green leaves and oblong, bright-red, bitter, fleshy fruits. It grows at altitudes of 6,000 feet on ridges with *Pyrus yunnanensis*, and is very drought resistant, enduring drought for seven months or more. It can also withstand the intense heat of April and the freezing temperatures of winter. It is a prolific bearer, but is useful only as a stock plant and as an ornamental."

55498. "(No. 3066. Near Chukai, Yunnan. April 5 1922.) A lovely tree with large serrate leaves; the branches were bent with their load of large, oblong deep-red, cherrylike fruits. It is early fruiting, the fruits appearing in late February or early March, and the tree seems to be absolutely free from insect or fungous pests. It occurs throughout the Black River Valley at altitudes of about 5,000 feet on mountain slopes, also near Szemao, where it is rare, and more commonly near Nanchien. The Chinese name is 'Yin to' or 'Yin tao.'"

55500. "(Szemao, Yunnan. March 18, 1922.) These seeds were sent to me at Talifu from the mountains near Szemao; they are said to be from the first wild edible cherries which come to market."

Pyrus spp. (Malaceae), 55497 and 55550. **Pear**. From Talifu, Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the Bureau of Plant Industry. Quoted notes by Mr. Rock.

55497. "(Talifu. April 18, 1922.) An edible pear about the size of a large apple; the flesh is light yellow and the skin is thin, firm, and light citron colored with a red hue, - hence the name 'Wu pa li,' (touched-by-the-fire pear). The tree grows on the side of the lake opposite to Talifu."

55550. "(Talifu. May 4, 1922.) 'Tangli.' This pear is oblong in outline, russet-brown, slightly acid but also sweet; it is better cooked than fresh. This variety is grown at Haitung, on Lake Erh Hai, about 10 miles from Talifu, and ripens from April to August."

Rumex tuberosus (Polygonaceae), 55494. **Sorrel**. From Algiers, Algeria. Seeds presented by Dr. L. Trabut.

"A very good sorrel from the Atlas region of Algeria." (Trabut.)

"The leaves are often used as a vegetable." (Dragendorff, Die Heilpflanzen, p. 190.)

Saccharum officinarum (Poaceae), 55501. **Sugar cane.** From Nanchien, Yunnan, China. Cuttings collected by J. F. Rock, Agricultural Explorer of the Bureau of Plant Industry. "(Nanchien, Yunnan. April 27, 1922.) The cane is erect, tall, of a uniform reddish yellow color, and very juicy and sweet. It is cultivated throughout the central portion of Yunnan south of Menghwa, and also near Puerhfu in southern Yunnan; it is grown at an altitude of 5,000 to 6,000 feet and even higher. The region is very dry, and arid mountains form the slopes of the valleys." (Rock.)

Salpichroa rhomboidea (Solanaceae), 55478. From Buenos Aires, Argentina. Seeds presented by Sr. Benito Carrasco, director, Botanic Garden. Introduced for use in tomato-breeding experiments.

An ornamental relative of the tomato, with white flowers and edible, white, transparent berries which resemble the pineapple in flavor. Because of its attractive appearance and creeping habit it is very effective for covering bare places. (Adapted from The Garden, vol. 35, p. 367.)

Severinia buxifolia (Rutaceae), 55495. From Buitenzorg, Java. Seeds presented by the director, Botanic Garden. A much-branched, thorny shrub which is not uncommon in southern China and French Indo-China; it has oval, shiny green leaves, axillary clusters of small white flowers, and small berrylike fruits which become very dark red or nearly black. In Louisiana this handsome shrub has proved useful for hedges, especially the forms which have thorns 2 or 3 inches long; furthermore, it is easily propagated from cuttings. Experiments have shown that Severinia can withstand unusually large amounts of salt in the soil, and it may prove of interest as a stock for citrous fruits in regions having alkali in the soil or salty irrigation water. (Adapted from Swingle, Journal of the Washington Academy of Sciences, vol. 6, p. 651.)

Solanum tuberosum (Solanaceae), 55557 and 55558. **Potato.** From Ibarra, Ecuador. Seeds presented by Sr. don Jose Felix Tamayo. Seeds obtained for the use of

plant breeders. Quoted notes by Wilson Popenoe.

55557. "'Cueruda blanca' (white cueruda) potato seed from the 1921 crop, from the hacienda La Rinconada, in the province of Carchi, where it is cultivated at altitudes between 11,000 and 12,000 feet.

"This is the most important commercial potato of Carchi Province. At Ibarra, where it is one of the favorite varieties on the market, it is known as 'pastuza.' It yields heavily, and the whitish brown, somewhat flattened, oval tubers are of good size and quality. The eyes are very shallow and not numerous."

55558. "'Cueruda morada' (purple cueruda) potato seed from the 1921 crop, from the hacienda La Rinconada, province of Carchi, where it is cultivated at altitudes between 11,000 and 12,000 feet.

"Commercially one of the best and most important varieties in northern Ecuador, though it is not quite so extensively grown as 'Cueruda blanca.' The tubers are oval, flattened, purple, with whitish areas around the shallow eyes; they possess excellent keeping qualities."

Telfairia pedata (Cucurbitaceae), 55504. From Nairobi, Kenya Colony. Seeds presented by A. Holm, director, Department of Agriculture. "A perennial climber, indigenous to eastern Africa, which grows very luxuriantly in this colony. The kernels of the seeds are used by the natives, both as a food stuff and as a source of edible oil.

"The following analysis of the seeds has been published by Gilber (see Sadebeck, Die Kulturgewächse der Deutschen Kolonien und Ihre Erzeugnisse, Jena, 1899, p. 245):

	Per cent
Moisture	6.54
Ash	2.04
Oil	36.02
Protein	19.63
Woody fiber	7.30
Nitrogen-free extractive matter	28.45

"These seeds are flat, irregularly circular in shape, and about 1¼ to 1½ inches in diameter. The single seeds average 4.9 grams in weight.

"The Imperial Institute of London has reported as follows:

"'The seeds consist approximately of fibrous husk 11 per cent, shell 38 per cent, and kernel 51 per cent.'

"The kernel yields 56.9 per cent of slightly reddish brown oil.

"The oil from seeds from Zanzibar gave the following analysis:

Specific gravity at 15° C.	0.919
Acid value	2.6
Saponification	196.00
Iodin value	89.00

"This is a non-drying oil, and has a pleasant, slightly sweet taste. It would be suitable for soap manufacture, and also as an edible oil. The seed is used by Europeans in this colony both as a nut and as a flavoring for cakes.

"The reason these seeds are not more used is due to the hardness of the shell and the difficulty of removing it, as well as to the intensely bitter, green skin which separates the kernel from the shell. If a method could be found of removing the tough fibrous husks and this bitter skin, it would appear that the seed would be of considerable commercial value, both for its edible oil and for the manufacture of soap, as well as for the resultant oil cake which would probably make a good cattle feed. It would be impossible, however, to use the cake after pressing the unhusked seeds on account of the bitter skin.

"A German syndicate of soap and candle manufacturers at Mannheim has investigated the possibilities of these seeds, but expressed the opinion that it would be inadvisable to place consignments of the seeds on the European market until a machine had been invented for rapidly and cheaply shelling them.

"These seeds grow very rapidly in any place which is not touched by frost. The fruit containing the seeds is about a foot in diameter when ripe. The vine climbs over neighboring trees and requires no care." (S. W. Eels, American consul, Nairobi, Kenya Colony.)

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
BUREAU OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

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