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PLANT IMMIGRANTS

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is made up of descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, 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. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS which will be sent you in the autumn and in which will be listed all plants available at that time. Regular requests checked off on the check list sent out with the catalogue are not kept over from year to year. If you are especially interested in some particular plant in the catalogue write and explain in detail your fitness to handle it.

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.

David Fairchild,

Agricultural Explorer in Charge.

October 2, 1917.

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Aeschynomene sp. (Fabaceae.) 44040. Seeds from El Coyolar, Costa Rica. Presented by Mr. Carlos Wercklé. "Yellow sensitiva. A very dense growing leguminous annual, whose roots are always completely covered with nodules. People say they are a good forage, but I have never seen a cow eating them. Our best plant for nitrification of the soil." (Wercklé.)

Aleurites trisperma Blanco. (Euphorbiaceae.) 44061. Seeds from Philippine Islands. Presented by Mr. A. W. Prutch, through Mr. Adn. Hernandez, Director, Manila Bureau of Agriculture. "Mr. Prutch has returned from his trip to Cavite province with seeds and leaves of the *Aleurites trisperma* tree. The nuts were picked up under the trees where they had been lying since last August, which month the tree fruits. As you have already successfully introduced *A. moluccana* in the United States, it is quite possible that this species will also be successful. It is believed that this soft shell kind is superior, for in addition to the nut being easier to crack, the Bureau of Science has found that the oil so closely approximates the Chinese tung oil as to be practically indistinguishable therefrom. There is a slight difference between this oil and that of the *Aleurites moluccana*." (Hernandez.)

Callicarpa giraldiana Hesse. (Verbenaceae.) 44076. Cuttings from Jamaica Plain, Mass. Presented by the Arnold Arboretum. An ornamental shrub from western China, with dentate leaves 2 to 4 inches long, dense cymes of pink flowers on hairy stalks, and violet fruits. If sheltered this shrub will grow in the northern parts of the United States, and if killed to the ground, young shoots will spring up vigorously, producing flowers and fruit in the same season. (Adapted from Rehder, in Bailey, Standard Cyclopedia of Horticulture, vol. 2, p. 629, under *C. giraldii*.)

Campomanesia fenzliana (Berg) Glaziou. (Myrtaceae.) 44086. Seeds from Parana, Brazil. Presented by Mr. B. H. Hunnicutt, Lavras, Minas, Brazil. A small Brazilian myrtaceous tree with foliage resembling that of the European oaks. It reaches a height of 30 to 35 feet, and bears orange yellow fruits up to an inch in diameter, with edible pulp resembling that of the guava. (Adapted from note of Dorsett, Shamel and Popene.)

Cassia eremophila A. Cunningham. (Caesalpinaceae.) 44071. Plants from Wellington Point near Brisbane, Queensland, Australia. Presented by Mr. James Pink. "A very handsome flowering shrub." (Pink.) A woody plant, found in Australia, in all the colonies except Tasmania. The leaves are composed of two pairs of very narrow leaflets, and the pods are very smooth. In Australia both the pods and the leaves of this plant are eaten by stock. (Adapted from Maiden, Useful Native Plants of Australia, p. 121, and from Vogel, Synopsis Generis Cassiae, p. 47 as *Cassia nemophila*.)

Castilleja indivisa Engelm. (Scrophulariaceae.) 43985. Plants grown at the Plant Introduction Field Station, Chico, California, from seed collected by Dr. David Griffiths, of this Bureau, at Lyford, Texas, May 2, 1915. "One of the most showy of the winter annuals of southern Texas. The seedlings come up very abundantly upon the sandy coastal plain in autumn, developing slowly during the winter but rapidly in early spring, and dominating the color of acres of the landscape in late March and early April. Here its seeds are matured in late April and early May. There are few native plants more showy than this one. This whole group of painted cups, however, are considered somewhat difficult to grow, and are consequently little handled in the trade in this country, although commonly grown in England. Our efforts have met with success and failure in their handling. Recent trials indicate that the habits of the plant, as depicted above, should stand winter handling, and that they can be grown successfully as winter annuals in regions having mild winters with sufficient moisture for seed germination in autumn. It requires a comparatively low temperature for their development, experience at Chico, California, showing that the sudden transition from winter to summer, such as we have, dwarfs the plant before maturity, so that they produce but few of the colored bracts which are so attractive in all of the painted cups or Indian paint brushes." (Griffiths.)

Chamaedorea sp. (Phoenicaceae.) 44059. Seeds of **Pacaya palm** from Coban, Guatemala. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "Nearly every garden in Coban contains a number of these small, attractive palms, planted not so much for ornament as for the edible inflorescences which they produce. In

other parts of the Alta Verapaz the pacaya is also quite common, and it is grown in the southern part of Guatemala as well. Since it succeeds here at elevations of 5000 feet or even higher, where the winters are quite cool, it would seem that it ought to be a success in southern California and Florida, though it is difficult to predict what effect the sandy soil of the latter state may have upon it. The palm grows to a height of about 15 feet, having a slender stem about two inches in diameter, and handsome leaves somewhat reminding one of *Chrysalidocarpus lutescens* (*Areca lutescens*). The foliage is of a rich green color. The inflorescences are produced along the trunk, in the winter and spring, and apparently more or less throughout the year. Before the spathe has opened it is removed from the palm, opened, and the tender inflorescence, nearly white in color, and finely branched, is removed and eaten. Its preparation for the table consists in dipping it in a batter made of eggs and then frying it, in enveloping it in an omelet, in boiling it and serving it as a vegetable, or in mixing it with other vegetables to form a salad. When very young and tender its flavor is agreeable but when older, and nearly ready to emerge from the spathe, the inflorescence has a strongly bitter taste which makes it disagreeable. It should, therefore, be used when quite young. The pacaya palm grows in a variety of soils, seeming to do well on clay and also on black sandy loam. An abundance of lime in the soil does not seem to injure it. It is frequently planted in gardens among coffee bushes, and in many sections it is planted beneath large trees, where it may have partial shade. I have seen many beneath large avocado trees, inter-planted with coffee bushes. It may be necessary to furnish shade for the palms in California and Florida, by means of a slat house or some such device, or they might be planted beneath large trees, as they are here in Guatemala. The pacaya, as an article of food, is extensively used in Guatemala, and by local standards commands a good price, single inflorescences usually selling at 2 to 5 for a peso ($2\frac{1}{2}$ cents). The spathes are pulled from the palms, tied together in small bundles, and thus brought to market." (Popenoe.)

Colocasia esculenta (L.) Schott. (Araceae.) 44066.
Tubers of Taro from Oilla, Texas. Presented by Mr. S. Kato. "Yatsu-gashira-imo. A Japanese variety of taro of

the dasheen type. It is said to be the best variety grown in Japan. These specimens grown in Texas, though very small, were mealy and of fine flavor." (R. A. Young.)

Cotoneaster divaricata Rehder & Wilson. (Malaceae.)
43991. Seeds from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A deciduous upright shrub from central and western China, with shining oval leaves $1/3$ to $3/4$ inch long. The pink flowers are usually in threes, and the bright red fruit, containing 2 stones, is $1/3$ inch long. A very handsome shrub when studded with its bright red fruits, and hardy at the Arnold Arboretum. (Adapted from Rehder, in Bailey, Standard Cyclopedia of Horticulture, vol. 3, p. 865.)

Cotoneaster horizontalis perpusilla Schneider. (Malaceae.)
43992. Seeds from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A low Chinese shrub of prostrate habit with almost horizontal branches in two dense series and roundish oval leaves less than $1/3$ inch long. The flowers are erect, pink, and either solitary or in pairs, and the bright red oval fruit, $1/4$ inch in diameter, usually contains 3 stones. One of the most effective fruiting shrubs for rockeries. (Adapted from Rehder, in Bailey, Standard Cyclopedia of Horticulture, vol. 3, p. 865.)

Cotoneaster hupehensis Rehder & Wilson. (Malaceae.)
44079. Cuttings from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A shrub, native of central and western China, up to 5 feet in height, with slender spreading branches, oval or elliptic leaves with gray wool on the lower surfaces, 6 to 12 white flowers in each of the numerous cymes, and red, nearly globular fruits about $1/3$ inch in diameter. This is one of the handsomest of Cotoneasters in bloom, and is hardy as far north as Massachusetts. (Adapted from Rehder, in Bailey, Standard Cyclopedia of Horticulture, vol. 2, p. 867.)

Cotoneaster tenuipes Rehder & Wilson. (Malaceae.)
43995. Seeds from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A gracefully-branched, deciduous shrub, from western China, up to 7 feet high, with oval or elliptic-oval, sharp-pointed leaves, about one and three fifths inches long. The flowers

are unknown as yet, but the fruits are nearly black, usually solitary, and contains 2 stones. (Adapted from Sargent, *Plantae Wilsonianae*, vol. 1, part 1, p. 171.)

Dahlia imperialis Roez1. (Asteraceae.) 43981. Cuttings of *dahlia* from Tactic, Depto. de Alta Verapaz, Guatemala. Collected by Mr. Wilson Popenoe, Agricultural Explorer. "Double white variety. The pink tree Dahlia is common throughout a large part of Guatemala. I have seen it from Antigua to Coban often in great abundance, its huge single pink flowers, four inches in diameter, making it a very striking thing. The pink form, which apparently is the typical one, is the only form which I have seen in the southern part of Guatemala, but in the vicinity of Tactic there are three other forms. None of these is so common as the pink form, but all are seen occasionally in gardens. The forms in question are: a single white, identical with the typical single pink except in its color, which is pure white; a double pink, of the same lilac pink shade as the typical form but with double flowers, three inches in diameter; and a double white form, of the same character as the double pink but pure white. The tree dahlia is called *shikar* in the Pokomchi dialect, which is the language of the Indians at Tactic. It is very commonly planted around gardens and door-yards to form a hedge; large cuttings, 3 to 4 feet long and of stems one to two inches in diameter, being inserted in the ground, and apparently rooting very readily. The plants grow to 15 feet in height, and when in full bloom, as they are at this season of the year, are a glorious sight. Tactic is made beautiful by this common plant, and it would seem well worth while to test it for hedges in California, where the pink form has already been introduced and is offered in the trade. The variety sent in under this number is the double white, which seems to be one of the most beautiful of all. The flowers of this form are extensively used by the Indians of Tactic for decorating the images of saints which they have in their houses and in the churches." (Popenoe.)

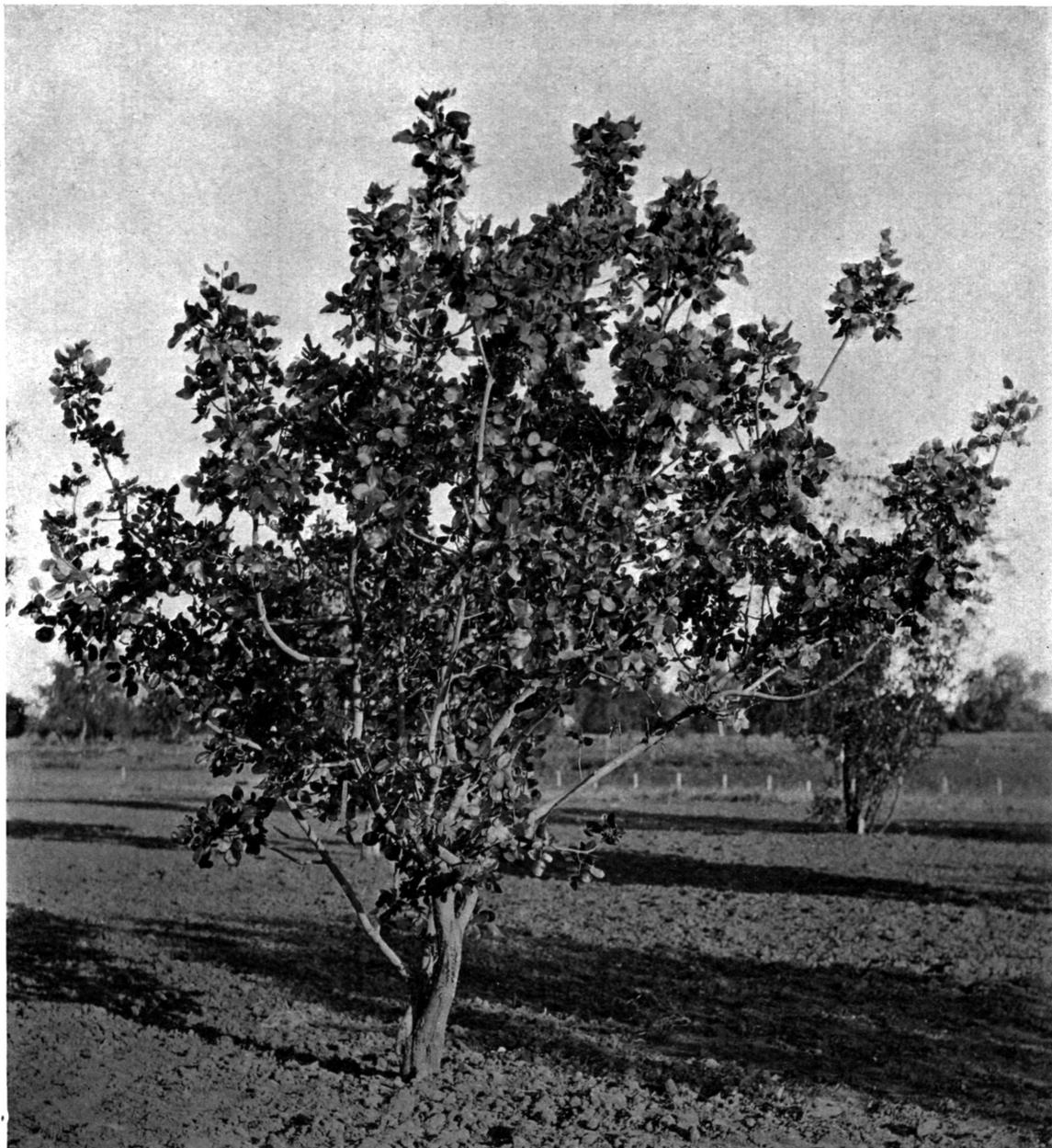
Deguelia dalbergioides (Baker.) Taubert. (Fabaceae.) 44073. Seeds from Ceylon. Presented by Father Jerome, St. Leo Abbey, St. Leo, Florida. A small, spreading tree, 15 to 20 feet high, found in the Malay Archipelago and Java. The branchlets are brown-silky, the dark green compound leaves are 6 to 8 inches long,

the rose-colored flowers are in numerous short-stalked racemes, and the thin, flat pods are up to $2\frac{1}{2}$ inches long. (Adapted from J. D. Hooker, Flora of British India, vol. 2, p. 241, under *Derris dalbergioides*.)

Garcinia dioica Blume. (Clusiaceae.) 44085. Seeds from Lawang, Java. Presented by Mr. M. Buysman. "The fruit of this tree is eaten." (Buysman.) A Javanese tree up to 60 feet high, with membranous, lance-shaped leaves up to 5 inches long, pink flowers in few-flowered axillary or terminal clusters, and nearly globular fruits up to one and three fifths inches in greatest diameter. The natives of Java call this tree *Tjeuri* and *Kemedjing*. The wood is of little use, but in some portions the fruits are sought for the sake of the taste of the seed-coats. (Adapted from S. H. Koorders and Th. Valetton, Boonsoorten op Java, Bijdrage No. 9, pp. 369-372.)

Genipa americana L. (Rubiaceae.) 44090. Seeds of **Genipap** from Lamao, Bataan, P. I. Presented by Mr. P. J. Wester, Lamao Experimental Station through Mr. Adn. Hernandez, Director, Manila Bureau of Agriculture. A large stately tree, native of the American tropics, growing 60 feet in height, with dark green leaves a foot or more long. The edible fruits are about the size of an orange. (Adapted from the note of Dorsett and Popenoe.)

Poa flabellata (Lam.) Hook. f. (Poaceae.) 44000. Seeds of **Tussock** grass from Stanley, Falkland Islands. Procured from Mr. W. A. Harding, Manager, Falkland Islands Company, through Mr. David J. D. Myers, American Consul, Punta Arenas, Chili. A coarse grass, native of the Falkland Islands, growing on peat soils near the sea. The plant forms dense masses of stems, which frequently rise to a height of from 4 to 6 feet, and the long, tapering leaves hang gracefully over in curves, from 5 to 8 feet long and an inch wide at the base. The plant is much relished by cattle, being very nutritious and containing saccharin. The inner portion of the stem, a little way above the root, is soft and crisp, and flavored like a hazel nut; the inhabitants of the Falkland Islands are very fond of it. They also boil the young shoots and eat them like asparagus. (Adapted from Hogg, Vegetable Kingdom, pp. 823-824.)



A SICILIAN PISTACHE TREE IN CALIFORNIA, *PISTACIA VERA*, S. P. I. No. 12782.

Early introductions of the pistache nut trees made by Fairchild and Swingle from Greece and Syria in 1899 and 1900 have grown well in California and their behavior has been under observation for some time by Messrs. W. T. Swingle and G. P. Rixford. The prospect of commercial pistache nut culture in California is emphasized by the vigor and health of this tree, introduced by Mr. T. H. Kearney from Bronte, Sicily, in 1905. It is a female and fruiting this season. Photographed (P19669FS) by P. H. Dorsett, Chico, Cal., Field Station, May 9, 1916.



AN ORNAMENTAL TROPICAL YAM, *DIOSCOREA* SP., S. P. I. No. 38134.

The ordinary cinnamon vine (*Dioscorea batatas* Decsne.) which is related to this species, produces such quantities of small aerial tubers resembling miniature potatoes, and these produce such persistent vines that they are a veritable nuisance in a border. This large-leaved species, however, which produces aerial tubers as large as a good-sized potato, has distinct possibilities as a screen vine for porches and may prove valuable treated as an annual much above the frost line. Photographed (P19630FS) by P. H. Dorsett at Miami Field Station, June 16, 1916.

Prunus bokhariensis Royle. (Amygdalaceae.) 43988. Cuttings of **plum** from Saharanpur, India. Presented by Mr. A. C. Hartless, Superintendent, Government Botanical Gardens. "Alucha black." A plum from Chinese Turkestan, with medium-sized golden-yellow, clingstone fruits of fine flavor, which ripen late in July. They are excellent for preserves and jellies. (Adapted from note of Frank N. Meyer.)

Psidium guajava L. (Myrtaceae.) 43998. Seeds of **white guava** from Caracas, Venezuela. Collected by Dr. J. N. Rose, U. S. National Museum. "Seeds of a very large guava, the largest I have ever seen. It was 4 inches long and resembled somewhat a large Bartlett pear. It may be known to you, but was new to me. It was called at Caracas the Peruvian guava, but I saw nothing like it in Peru in 1914. It has only recently been introduced into Caracas. I obtained the seeds from Mr. Frederick L. Pantin, Acting Manager of the Caracas and La Guaira railroad." (Rose.)

Pyrus amygdaliformis Villars. (Malaceae.) 44041. Cuttings of **pear** from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A small tree, native of southern Europe, occasionally 20 feet or more high, or sometimes merely a large rounded shrub. The leaves, which are very variable in shape and size, are from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches in length, the white flowers, 1 inch wide, are produced in April in corymbs, and the round, yellowish-brown fruits are about an inch in diameter. The chief merit of this tree is its picturesqueness in age. (Adapted from W. J. Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 273.)

Pyrus betulae-folia Bunge. (Malaceae.) 44042. Cuttings of **pear** from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A slender, fast-growing, graceful tree from northern China, attaining a height of 20 to 30 feet, with the young shoots thickly covered with a persistent gray felt. The dark green oval or roundish, dentate, long-pointed leaves are 2 to 3 inches long, the white flowers, $\frac{3}{4}$ inch wide, occur eight to ten in corymbs, and the grayish-brown roundish fruits are about the size of a pea. The Chinese use this as a stock on which to graft fruiting pears. (Adapted from W. J. Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 279.)

Pyrus calleryana Decaisne. (Malaceae.) 43987. Scions of pear from Jamaica Plain, Mass. Presented by the Arnold Arboretum. This wild Chinese pear is not uncommon in western Hupeh at an altitude of from 1000 to 1500 m., and is easily recognizable by its comparatively small, crenate leaves and small flowers. This pear maintains a vigorous and healthy appearance under the most trying conditions, and might prove to be a very desirable blight-resistant stock. Also the woolly aphid, which attacks other species of pears, has not been known to touch this species. (Adapted from Compere, Monthly Bulletin California State Comm. Hort. vol. 4, pp. 313, 314, and from Rehder, Chinese Species of Pyrus, Proc. Am. Acad. vol. 50, pp. 237-238.)

Pyrus oblongifolia Spach. (Malaceae.) 44050. Cuttings of pear from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A small tree, occasionally 20 feet or more high, common in Provence, France. The leaves are oval or oblong, and the fruits, which are yellowish, tinged with red on the sunny side, are about $1\frac{1}{2}$ inches in diameter. In Provence it is known as the *Gros Perrussier*. (Adapted from W. J. Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 273.)

Pyrus ovoidea Rehder. (Malaceae.) 44051. Cuttings of pear from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A Chinese tree of pyramidal habit, 30 to 50 feet high, with oval-oblong, sharply serrate leaves 3 to 5 inches long, white flowers in 5 to 7 flowered racemes, yellow, juicy, somewhat astringent exactly egg-shaped fruits up to $1\frac{3}{4}$ inches long. In autumn the foliage turns a bright scarlet, and the flowers appear a week ahead of other species of pears. (Adapted from A. Rehder, Proceedings of the American Academy of Arts and Sciences, vol. 50, pp. 228-229, and from Bailey, Standard Cyclopedia of Horticulture, vol. 5, p. 2869.)

Pyrus salicifolia Pallas. (Malaceae.) 44053. Cuttings of pear from Jamaica Plain, Mass. Presented by the Arnold Arboretum. Var. *pendula* Hort. A very elegant tree, native of southeastern Europe and Asia Minor, from 15 to 25 feet high, with pendulous branches, narrow lance-shaped, finally shiny green leaves $1\frac{1}{2}$ to $3\frac{1}{2}$ inches long, pure white flowers, $\frac{3}{4}$ inch wide in dense small corymbs, and pear-shaped fruits 1 to $1\frac{1}{4}$ inches long. The leaves and flowers of this very

ornamental pear often open simultaneously, producing a charming effect. (Adapted from W. J. Bean, *Trees and Shrubs Hardy in the British Isles*, vol. 2, pp. 292-293.)

Pyrus ussuriensis Maximowicz. (Malaceae.) 44056. Cuttings of pear from Jamaica Plain, Mass. Presented by the Arnold Arboretum. A tree, native of Amur and Ussuri, Siberia, from 20 to 30 feet high, with broadly oval, sharply serrate, acuminate leaves, many-flowered racemes of white flowers, and roundish-oval, umbilicate, mild-flavored fruits over an inch in diameter, crowned by the persistent calyx. In autumn the foliage turns a shining brownish-red, making the tree very ornamental. (Adapted from E. Regel, in *Gartenflora*, vol. 10, pp. 374-375, plate 345.)

Rhus rufa Teijsm. & Binn. (Anacardiaceae.) 44075. Seeds from Ceylon. Presented by Father Jerome, St. Leo, Florida. An erect, smooth-barked tree, native of the peninsula of Menado, island of Celebes, Dutch East Indies, with leaves composed of 12 to 14 pairs of oblong lance-shaped leaflets with reddish-hairy lower surfaces, and axillary and terminal panicles of white, sessile flowers. The fruits are black, dry, nearly globular drupes containing kidney-shaped seeds. The inhabitants of Menado call this *Kajoe-Kambing*. (Adapted from J. E. Teijsman and D. Binnendijk, *Natuurkundig Tijdschrift voor Nederlandsch Indie*, vol. 27, p. 52.)

Sorbus pohnuashanensis (Hance) Hedlund. (Malaceae.) 43996. Seeds from Jamaica Plain, Mass. Presented by the Arnold Arboretum. An evergreen shrub from northern China, with reddish-brown twigs, leaves composed of 6 to 7 pairs of elliptic or lance-elliptic leaflets from one and three-fifths inches long, and red fruits about one-third inch in diameter. This shrub is in cultivation at the Arnold Arboretum. (Adapted from Schneider, *Illustriertes Handbuch der Laubholzkunde*, vol. 1, p. 672.)

Uvaria rufa (Dun.) DeCandolle. (Annonaceae.) 44091. Seed of *banauac* from Lamac, Bataan, P. I. Presented by Mr. P. J. Wester, Lamac Experimental Station, through Mr. Adn. Hernandez, Director, Manila Bureau of Agriculture. A much-branched shrub from Java, with a stem about the diameter of a man's arm, alternate, elliptic-

oblong, acute or obtuse leaves $2\frac{1}{2}$ to 5 inches long, purplish-red solitary flowers about an inch wide, and oblong, kidney-shaped, red fruits about $1\frac{1}{2}$ inches long, in bunches of 18 or 20, with whitish, scant, juicy, aromatic, sub-acid flesh without a trace of sugar and containing many seeds. (Adapted from Blume, Flora Java, Annonaceae, pp. 19-21, plate 4, and from P. J. Wester, Philippine Agricultural Review, vol. 6, no. 7, p. 321.)

Notes from Correspondents abroad.

Mr. Frank N. Meyer writes from Ichang, Hupeh, China, April 16, 1917:

"The day before yesterday I returned here from a sixteen days' trip into the mountains and plain of this section of the immense Hupeh Province, investigating mainly problems connected with *Pyrus calleryana*, *Pistacia chinensis*, tung oil and some minor things."

"*Pyrus calleryana* is simply a marvel. One finds it growing under all sorts of conditions, one time on dry, sterile mountain slopes; then again with its roots in standing water at the edge of a pond; sometimes in open pine forest, then again among scrub on blue-stone ledges in the burning sun; sometimes in low bamboo jungle in the company of the Chinese pistache, *Vitex negundo*, *Cudrania triloba*, the jujube, *Ulmus parvifolia*, *Rosa multiflora*, etc., and then again along the course of a fast flowing mountain stream or on the occasionally burned over slope of a pebbly hill.

"The tree is nowhere found in groves, always as scattered specimens and but very few large trees were seen. There are reasons for that, namely the natives cut down the larger specimens for their lumber, from which fine furniture is made, while if a young tree occurs at a suitable place it is most times used as a stock for an improved variety of pear.

"We made a trip of three days to the northwest from here to look at a very large specimen of a wild pear from which a large village had obtained its name (Tang li shu ya) but the tree had become old and had been cut down 40 to 50 years already. It was said to measure something like 11 or 12 feet in circumference. The largest trunk I measured was 6 feet in circumference, but it was as a stock for an improved pear.

"The name of this wild pear is everywhere around here "Tang li", meaning "Crab-apple pear", on account of the resemblance of its fruit to wild crab apples

(*Malus baccata*). There is very much variation in the trees as regards appearance, pubescence of leaves, size of fruits and of flowers, etc. Some trees present a silvery-gray appearance while others are quite green. Whether all of these strains will be equally immune is yet to be solved.

"This pear will be of immense value as a stock for the very greater part of the United States, but more especially so for those parts where the summers are hot and the winters only moderately cold. As a factor in hybridisation work it offers but little prospect since the fruits are ridiculously small, often only the size of a small choke-cherry. *Pyrus ussuriensis* however offers much better promise for breeding work, that is, to obtain a hardy pear for cold regions, but as a stock it probably cannot be grown in regions where summer temperatures go high. Professor Reimer stated to me last September that the leaves of it got slightly scorched at Talent during a hot spell in July, I believe. In China, to my knowledge, I have never seen a specimen of *Pyrus ussuriensis* in a real hot part of the country; it always occurs there where the real *Malus baccata* thrives and *Juglans mandshurica*. Both of these plants love relatively cool summers, just like I do myself.

"And now as regards collecting a large quantity of seeds of the wild *calleryana* pear, for which purpose I made this special sixteen-day trip. Well, around Ichang itself there are too few trees and they are too small; around Kingmen, however, four to five days march due northeast, we found many trees and I have advanced my interpreter 100 Hupeh dollars, which he has been paying out as bargain money to various parties around Kingmen and in the early days of September of this year the natives will try to bring to us in Kingmen about 5000 cattles of fresh ripe fruits and we will have to arrange about prices and about cleaning methods.

"So we have to be again here in early September and if not, the advance money is spent in vain and of course no seeds will be received by anybody.

"The climate around Kingmen is much more continental than in Ichang, as the cold winds from Honan strike right down there on their way into Hunan. The Rev. J. S. Johnson, of the Swedish-American Missionary Covenant, who is stationed at times in Kingmen, told me that this winter the ice was 7 to 9 inches thick and his mandarin orange trees had suffered very

severely. In fact, one tree on an exposed place I looked at critically and gave but little hope for recovery except possibly for sprouts from near the base.

"Evergreens like *Ligustrum lucidum*, *Pittosporum tobira*, *Euonimus japonicus*, *Eriobotrya japonica* and *Cupressus funebris* had not suffered at all. The climate struck me as being very similar to that of southwest Louisiana and northeast Texas. Rice, cotton, and soy beans are the main summer crops, while field and green peas, broad beans, lentils, rape, barley, wheat and various strains of *Brassica* are the main winter crops.

"Well this is about all about *Pyrus calleryana*. I may add that I took several interesting photographs and collected herbarium specimens of various types. The small quantity of dried up fruits I found had no living seeds in them, since they had been subjected to seven months exposure to the elements since they were ripe."

United States Department of Agriculture.
Bureau of Plant Industry.
Office of Foreign Seed and Plant Introduction.
Washington, D.C.

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