Issued March 25, 1922.

U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY.

WILLIAM A. TAYLOR, *Chief of Bureau.*

INVENTORY

OF

SEEDS AND PLANTS IMPORTED

BY THE

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1917.

(No. 52; Nos. 44935 to 45220.)

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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INVENTORY OF SEEDS AND PLANTS IMPORTED BY THE OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1917 (NO. 52; NOS. 44935 TO 45220).

INTRODUCTORY STATEMENT.

This small inventory covers a period of the World War during which every energy which could be utilized was directed to the most active war work and the shipping of seeds and plants was nearest at a standstill.

A few of the introductions, however, merit mention in this introductory statement.

The success of such introduced forage grasses as Rhodes grass and Sudan grass in the South and Southwest makes the introduction of four forage grasses from New South Wales (Nos. 45037 to 45040) and a promising collection from the Belgian Kongo (Nos. 45204 to 45214) of particular interest to those who are pioneering in the live-stock industry in these warm regions.

Mr. Wilson Popenoe sent in from Guatemala seeds of an undescribed species of Persea (No. 44996), which, although having leaves very much like those of the avocado, has fruits with a fleshy, persistent calyx. The hybridizing which is going on between different races of *Persea americana* may make this species of value for hybridization purposes. Mr. Popenoe's large-fruited form of the coyó (No. 45081), which weighed 2 pounds and was of good quality, deserves to be called to the attention of tropical horticulturists and a comparison made on a considerable scale between it and the West Indian forms of avocado.

Just how different specifically the *Carica dodecaphylla* (No. 45141) of Argentina is from the ordinary *C. papaya* remains to be seen when they are grown side by side in Florida, but as already crosses between *C. candamarcensis* and *C. papaya* are being attempted it is important to bring into the hands of the plant breeders all the species and varieties obtainable.

Those interested in tropical species of Rubus may find in *Rubus racemosus* (No. 45044) from the Nilgiri Hills of India a useful form. The delicious rambutan of Java (*Nephelium lappaceum*) and the litchi of South China appear to have a rival in *N. bassacense* (No. 45131) from Cochin China, a species whose fruits have longer spines even than the beautiful rambutan.

The success of the Chinese grafted jujube in this country will make many experimenters interested in *Ziziphus mauritiana* (No. 44940), a tropical species the fruit of which is used, both fresh and dried, in India and of which the best variety comes from Kandahar.

Flavoring plants are not used as much in America as in France and Italy, except where Creole cooking still lingers. A tropical vine (No. 45220) with flowers and flower buds which impart a flavor of oysters to milk or potato soup may, however, interest those who live where the vine can be grown. One of the most conspicuous ingredients of the Japanese "rice tafel," or curry, of Java, is the pickled fruits of *Gnetum gnemon* (No. 45152), a shrub or small tree which furnishes not only singular potatolike fruits but edible leaves, which are stewed and eaten like spinach.

The Chinese pai ts'ai has met with such success in America and is now marketed by so many truck growers that a considerable number of people will be interested in a collection of varieties (Nos. 45185 to 45189) secured by Mr. Frank N. Meyer, which includes sorts which may be planted in April or May, others in August, and still others as late as September.

Ideal house palms are hard to find, and the pacayito of Guatemala (No. 44994) would seem to approach this ideal in that it has a graceful form while quite young, is suitable for the so-called fern dishes which adorn the center of the table, and because it fruits when not over a foot high, maturing its small, round, interesting seeds in the winter season.

The behavior on high pine land at Gotha, Fla., of the hardy palm, *Butia capitata* (No. 45009), a close relative of the genus Cocos, makes it seem worth while to distribute more widely over these pine lands this interesting species from Argentina, which bears showy, edible fruits.

Those who know Dr. Pittier well will be interested in his account of his experience with the fruit of an undescribed species of Calycophysum (No. 45219), which resembles a wild passion fruit but is intense orange-yellow in color and outdoes the red pepper in flavor. It occurs in the forests near Caracas, Venezuela.

The brilliant blue-flowered *Salvia patens* has made everyone who saw it long for a more robust form. It is possible that in *S. hempsteadiana* (No. 44995) Mr. Popenoe has found one which can be grown more satisfactorily as an annual in this country.

To any who have watched the growth of hybrid walnut trees and who believe, as Dr. Sargent does, in the future of hybrid trees for timber production, the introduction of a tropical black walnut from Porto Rico (No. 45033) can hardly fail to be of interest, particularly when the scarcity of black-walnut timber is considered. Whether it

will be feasible to plant a whole mountain slope in the Adirondacks with one of Japan's largest and loveliest flowering cherry trees for the production of cherry wood remains to be seen. *Prunus serrulata sachalinensis* (Nos. 45074 and 45178), which forms a forest tree 60 feet tall and several feet in diameter, is probably the best timber-producing species of the true cherries. In 1906 the writer introduced for his private place in Maryland a collection of Japanese cherry trees, buying them from the Yokohama Nursery Co., of Japan. Out of 23 varieties several have shown themselves particularly well adapted to the soil and climate of the region, and although the Japanese names which accompanied them are some of them not listed in the Arakawa collection it is deemed desirable to make a distribution of budded trees from these trees which have proved themselves so well suited to the conditions on the Atlantic seaboard (Nos. 45049 to 45062).

An unusual interest attaches to two species of Rubiaceæ, *Pavetta indica* (No. 45153) and *Psychotria bacteriophila* (No. 45155) from Java, because of the fact that their leaves have embedded in them nodules, like the nodules on the roots of leguminous plants, which furnish to the plants nitrogen gathered from the air. The question of whether or not these shrubs will be of service in Florida in the enrichment of the soil must be answered by actual tests.

The botanical determinations of seeds introduced have been made and the botanical nomenclature revised by Mr. H. C. Skeels and the descriptive and botanical notes arranged by Mr. G. P. Van Eseltine, who has had general supervision of this inventory, as of all the publications of this office. The manuscript of the inventory has been prepared by Mrs. Ethel M. Kelley.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., January 31, 1921.

INVENTORY.[1]

44935. BRASSICA PEKINENSIS (Lour.) Gagn. Brassicaceæ.

Pai ts'ai.

From Los Angeles, Calif. Purchased from Aggeler & Musser Co. Received July 6, 1917.

"A cabbage with short cylindrical solid heads. It is not suitable for spring planting, for when sown early it runs to seed without heading. It should be sown in seed beds late in July and transplanted to rich, moist earth, spacing 15 inches, in rows 2 to 3 feet apart. It should be harvested after the first light frost; the roots should be left on and the outer leaves removed. It may be stored in layers under dry straw with a heavy covering of soil. By cutting off all green leaf tips it can be cooked without the penetrating cabbage odor." (*Peter Bisset.*)

For previous introduction and further description, see S. P. I. No. 40604.

44936 and 44937. JUGLANS REGIA L. Juglandaceæ. **Walnut.**

From China. Nuts purchased from Mr. E. K. Lowry, manager, American Machinery & Export Co., Tientsin. Received July 2, 1917.

44936. "Sample No. 524. Soft shell, 1916 crop; grown in the district of Changli, northern China." (*Lowry.*)

44937. "Sample No. 525. Hard shell; grown in the Western Hills, west of Peking." (*Lowry.*)

44938. CANAVALI ENSIFORME (L.) DC. Fabaceæ. **Jack bean.**

From Mombasa, British East Africa. Presented by Kerslake Thomas & Co., Gotani estate, Changamwe, at the request of Mr. Henry P. Starrett, American consul, Mombasa. Received July 2, 1917. Quoted notes by Kerslake Thomas & Co.

"*Go-ta-ni* bean. It is an exceedingly heavy cropper, yielding about 2,200 pounds per acre under ordinary conditions. It is very hardy and a great drought resister. In this country it is a perennial, 2½ feet in height, and grows well on a clay loam and also on a light sandy soil. It would probably do well in the southern United States and California. Upon analysis it is found that the bean contains an exceptionally high percentage of albuminoids and oil, while the moisture is low. The high percentage of fiber is accounted

[1] All introductions consist of seeds unless otherwise noted.

It should be understood that the varietal names of fruits, vegetables, cereals, and other plants used in this inventory are those under which the material was received when introduced by the Office of Foreign Seed and Plant Introduction, and, further, that the printing of such names here does not constitute their official publication and adoption in this country. As the different varieties are studied, their identity fully established, their entrance into the American trade forecast, and the use of varietal names in American literature becomes necessary, the foreign varietal designations appearing there will be subject to change with a view to bringing the forms of the names into harmony with recognized American codes of nomenclature.

for by the tough consistency of the outer covering of the bean. There is nothing to indicate that it would not be fit for food, although the tough outer covering would better be removed. No prussic acid has been detected in the macerated product."

Received as a hybrid between the so-called Madagascar butter bean (*Phaseolus lunatus*) and the sword bean (*Canavali gladiatum*).

44939. VICIA FABA L. Fabaceæ. **Broad bean.**

From Camden, N. J. Presented by Mr. A. T. Ivanhoe. Received July 2, 1917.

"In Russian called *Konskie Bobi* (horse bean), or plain *Bob*. Plant at the same time as peas in good garden soil which is not too dry." (*Ivanhoe.*)

44940. ZIZIPHUS MAURITIANA Lam. Rhamnaceæ. **Bor.**
(*Z. jujuba* Lam., not Mill.)

From Seharunpur, India. Seeds presented by Mr. A. C. Hartless, superintendent, Botanic Garden. Received July 2, 1917.

"The tree is mainly cultivated for its fruit, which on the wild or commoner kinds is more or less globose, and on the cultivated and improved kinds ovoid or oblong. The pulp is mealy, sweetish, with a pleasant taste, and some of the cultivated kinds are very good indeed. The dried fruits are sold in the bazaars of the Panjab under the name of *unab;* the best kind is imported from Kandahar." (*D. Brandis, Forest Flora of India, p. 88.*)

44941 and 44942. CARICA PAPAYA L. Papayaceæ. **Papaya.**

From Honolulu, Hawaii. Presented by Mr. J. M. Westgate, Agricultural Experiment Station. Received July 5, 1917.

These papaya varieties were introduced for comparative studies in papain content and fruit production.

44941. "No. 2594." 44942. "No. 3598–12."

44943 to 44953. TRITICUM AESTIVUM L. Poaceæ. **Wheat.**
(*T. vulgare* Vill.)

From Paris, France. Presented by Vilmorin-Andrieux & Co. Received July 6, 1917.

The following varieties were sent in response to a request for rust-resistant wheats. (Quoted notes by Vilmorin-Andrieux & Co.)

44943. "*Alliés Hybrid.*"
44944. "*Autumn Victoria.*"
44945. "*Bearded Pearl of Nuisement.*"
44946. "*Crépi.*"
44947. "*Dattel Hybrid,* or *White Marvel.*"
44948. "*Early Noé,* or *Blue.*"
44949. "*Japhet,* or *Red Marvel; yellow grain.*"
44950. "*Jolly Farmer's Hybrid,* or *Sensation.*"
44951. "*Massy Hybrid.*"
44952. "*Red-Bearded Autumn.*"
44953. "*Treasure Hybrid.*"

44954. BIXA ORELLANA L. Bixaceæ. **Annatto tree.**

From Sao Paulo, Brazil. Presented by the Empreza Editora de Chacaras e Quintaes. Received July 6, 1917.

"*Urucú.*" A large-leaved tropical tree, about 30 feet high, with panicles of showy pinkish flowers. It is cultivated in the East and West Indies for the

annatto dye prepared from the orange-red pulp which surrounds the seeds. This dye is the coloring matter chiefly used in butter and cheese. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 1, p. 510.*)

44955 and 44956.

From Auckland, New Zealand. Presented by Mr. H. R. Wright, Avondale Nursery. Received July 6, 1917.

44955. IXERBA BREXIOIDES A. Cunn. Escalloniaceæ.

"*Tawari.*" A beautiful evergreen tree, sometimes 70 feet tall, with thick, leathery, coarsely serrate leaves 3 to 7 inches long and very handsome waxy, white flowers 1½ inches wide, occurring in flat panicles. It is a native of New Zealand, where it is not common, and is considered by some to be the most beautiful tree indigenous to that country. (Adapted from *Laing and Blackwell, Plants of New Zealand, p. 186.*)

44956. RYMANDRA EXCELSA Salisb. Proteaceæ.
(*Knightia excelsa* R. Br.)

A New Zealand tree, sometimes 100 feet in height, with stiff, linear-oblong, roughly toothed leaves 4 to 8 inches long and racemes of red, velvety flowers 2 to 3 inches long and 2 inches in diameter. The tree bears a considerable resemblance to the Lombardy poplar when seen from a distance. The wood is much used for cabinetwork. (Adapted from *Laing and Blackwell, Plants of New Zealand, p. 146.*)

44957 to 44961.

From Richmond, Victoria, Australia. Presented by Mr. F. H. Baker. Received July 7, 1917.

44957. ALBIZZIA LOPHANTHA (Willd.) Benth. Mimosaceæ.
(*Acacia lophantha* Willd.)

"*Cape* or *crested wattle.* Collected near Hursts Bridge, Victoria. Before planting soak in boiling water and allow to cool." (*Baker.*)

A shrub or small tree 6 to 20 feet high, with graceful, feathery foliage and yellowish summer-blooming flowers in spikes about 2 inches in length. The flat, oblong pods are thickened at the edges. The shrub is a native of Western Australia, often cultivated as a greenhouse shrub in temperate regions, and is now naturalized in southern California. (Adapted from *Botanical Register, vol. 5, pl. 361,* and from *Bailey, Standard Cyclopedia of Horticulture, vol. 1, p. 243.*)

44958. BRACHYCHITON ACERIFOLIUM F. Muell. Sterculiaceæ.
(*Sterculia acerifolia* A. Cunn.)

An Australian tree, up to 35 feet in height, with very dark-green, shining, maplelike leaves 6 to 10 inches wide and scarlet bell-shaped flowers which hang from the tree in large clusters. It is sometimes called the *Australian flame tree,* because of the fact that when it comes into bloom upon shedding its leaves in midsummer the tree appears like a huge flame. In the Pacific States it is considered a very fine avenue tree. (Adapted from *The Pacific Garden, November, 1913.*)

44959. EUCALYPTUS CALOPHYLLA Lindl. Myrtaceæ.

Variety *rosea.* A medium-sized Australian tree with dense foliage and dark, corky, deeply furrowed bark. The thick, firm leaves are ovate-lanceolate, and the large pink flowers appear in large clusters. It is an ornamental tree of slow growth, not enduring frost or drought, and

44957 to 44961—Continued.

is used as a shade tree in California. The wood is tough and used for building, but is not durable under ground. The bark is rich in kino, and the fall bloom is valuable for bees. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 2, p. 1152.*)

44960. EUGENIA VENTENATII Benth. Myrtaceæ.

An Australian tree 40 to 60 feet high and 2 to 3 feet in diameter, with oblong-lanceolate leaves 3 to 5 inches long and flowers in compound panicles. The fruit is a roundish 1-seeded drupe about half an inch in diameter. The wood is of a gray or pinkish hue and beautifully marked. It is close grained, hard, heavy, and tough and is used for tool handles, flooring, etc. (Adapted from *Maiden, Useful Native Plants of Australia, p. 532,* and from *Bailey, Queensland Flora, part 2, p. 658.*)

44961. PANDOREA AUSTRALIS (R. Br.) Spach. Bignoniaceæ.
(*Tecoma australis* R. Br.)

A beautiful climbing vine with abundant, dark-green foliage of handsome appearance and loose terminal panicles of yellowish flowers. It is a native of New South Wales, where it is called the *wonga-wonga* vine, and is cultivated in the southern United States. It requires a rich soil and must be watered freely during the dry spring months. If frozen it readily sprouts from the vigorous rootstock. (Adapted from *W. C. Steele,* in the *Florida Agriculturist, Oct. 23, 1901.*)

44962. PISTACIA CHINENSIS Bunge. Anacardiaceæ.

Chinese pistache.

From Chefoo, China. Seeds obtained through Mr. Lester Maynard, American consul. Received July 10, 1917.

A beautiful Chinese tree with graceful pinnate leaves which are at first dark red, then glossy green, and finally, in autumn, become scarlet, purple, and yellow. Trees of previous introductions have done so well in many parts of our country that we can now recommend this beautiful tree for park and avenue planting. Where the winters are not too severe it has withstood temperatures of 4° F. without injury, as at Washington, D. C. When planted in a well-drained situation it is especially valuable for the Southern and Pacific Coast States and should become a welcome addition to the list of cultivated trees because of the beautiful autumnal coloration of its foliage. Individual specimens sometimes live to be centuries old and attain great size. The tree may prove a good stock for *Pistacia vera* L., the edible pistache nut.

44963 and 44964. SACCHARUM OFFICINARUM L. Poaceæ.

Sugar cane.

From St. Croix, Virgin Islands. Cuttings presented by Dr. Longfield Smith, director, Agricultural Experiment Station. Received July 10, 1917.

44963. *Santa Cruz 12/37.* **44964.** *Santa Cruz 13/32.*

44965 to 44993.

From Argentina. Presented by Mr. W. Henry Robertson, American consul general, Buenos Aires. Received July 3, 1917. Quoted notes by Dr. D. N. Shoemaker.

These seeds are a collection obtained by the Argentine Department of Agriculture from various parts of Argentina.

44965 to 44993—Continued.

44965 to 44967. PHASEOLUS LUNATUS L. Fabaceæ. **Lima bean.**

44965. (No. 2. Estación Experimental, La Banda, Santiago del Estero.) *Manteca.* "A form of *White Sieva Lima.*"

44966. (No. 3. Estación Experimental, Tigre.) *Manteca.* "A form of *White Sieva Lima.*"

44967. (No. 17.) *Small Sieva Manteca.* "The *Small Sieva Lima.*"

44968. PHASEOLUS COCCINEUS L. Fabaceæ. **Scarlet Runner bean.**

(No. 5.) *Colorado de España.* "Identified as the ordinary *Scarlet Runner.*"

44969 to 44980. PHASEOLUS VULGARIS L. Fabaceæ. **Common bean.**

44969. (No. 1. Estación Experimental, La Banda, Santiago del Estero.) *Blanco criollo.* "Similar to *California Small White* bean."

44970. (No. 4.) *Blanco de manteca pequeño.* "Similar to *Medium* beans of New York State."

44971. (No. 6.) *100 × 1* (dwarf). "A bright-brown small bean not like any well-known variety in the United States."

44972. (No. 8.) *Dutch Case Knife.* "The variety as grown in the United States.

44973. (No. 9.) *Bicolor.* "A large bean with white ground color over half of the bean on the dorsal side; remainder of the bean brown and purple mottled. Not like any variety commonly grown in the United States."

44974. (No. 10.) *Bicolor.* "Identical with No. 9."

44975. (No. 11.) *Thorburn Large.* "Similar to *Giant Stringless Green Pod.*"

44976. (No. 12.) *Hardlong French.* "A small white bean the size of *California Small White.*"

44977. (No. 13.) *Hudson Wax* (dwarf). "This is not *Hudson Wax;* the seeds are black. It may be Wax Podded."

44978. (No. 14.) *Negro de Belgica* (dwarf). "This variety has small black beans."

44979. (No. 15.) *Blanco de manteca pequeño.* "White beans, about the size of *Medium* beans of New York State."

44980. (No. 18.) *Southern Prolific.* "True to name as grown in the United States."

44981 to 44991. PISUM SATIVUM L. Fabaceæ. **Garden pea.**

44981. (No. 19.) *Ojo negro.* "A large smooth pea with a black hilum."

44982. (No. 20.) *Mararilla del mercado.* "A slightly wrinkled white pea."

44983. (No. 21. Estación Experimental, La Banda, Santiago del Estero.) *Automovil.* "A large wrinkled pea."

44984. (No. 22. Estación Experimental, La Banda, Santiago del Estero.) *Orgullo del mercado.* "A small wrinkled pea."

44985. (No. 23. Estación Experimental, La Banda, Santiago del Estero.) *William Hurst* (dwarf). "A small wrinkled pea."

44965 to 44993—Continued.

44986. (No. 24. Estación Experimental, La Banda, Santiago del Estero.) *De 40 dias.* "A greenish medium-sized semiwrinkled pea."

44987. (No. 25. Estación Experimental, La Banda, Santiago del Estero.) *Senador* (dwarf). "A medium-sized wrinkled pea."

44988. (No. 26. Estación Experimental, La Banda, Santiago del Estero.) *Cien por uno.* "A medium-sized wrinkled pea."

44989. (No. 27. Estación Experimental, La Banda, Santiago del Estero.) *Telegrafo.* "A rather small wrinkled pea."

44990. (No. 28. Estación Experimental, La Banda, Santiago del Estero.) *Gladiador* (dwarf). "A large wrinkled pea."

44991. (No. 29. Estación Experimental, Tigre.) *Comun.* "A small, smooth, green pea."

44992 and 44993. VIGNA SINENSIS (Torner) Savi. Fabaceæ. **Cowpea.**

44992. (No. 7.) *Careta.* "Identified as a black-eyed cowpea."

44993. (No. 16.) *Southern Creaseback.* "Identified as a cowpea."

44994 to 44999.

From Guatemala. Collected by Mr. Wilson Popenoe, Agricultural Explorer of the Bureau of Plant Industry. Received July 19, 1917. Quoted notes by Mr. Popenoe.

44994. CHAMAEDOREA sp. Phœnicaceæ. **Pacayito palm.**

"(No. 150. July 9, 1917.) Plants of a dwarf palm collected in dense forests near Purula, Department of Baja Vera Paz, at an altitude of approximately 5,500 feet.

"This species is usually called by Spanish-speaking Guatemalans *pacayito*, which means 'small pacaya.' By the Indians of Alta Vera Paz, who speak the Kekchi language, it is called *ko-kiip*, which also means 'small pacaya,' and in Purula I heard it called *pamak*. This name is doubtless given because of the resemblance to the common *pacaya*, a palm which is extensively cultivated in Guatemala for its edible flower buds. Probably the name *pacayito* may be chosen as best suited to use in the United States.

"Judging from accounts given me by various residents of Vera Paz, this palm commonly occurs in the mountains of that region at altitudes of about 4,000 to 6,000 feet. It always grows in dense forests and must be considered a shade and moisture loving species. The soil in which it grows is nothing but decayed leaves for the first several inches and is kept continually moist by the abundant rains of this region. In Coban the *pacayito* is a favorite house plant, being grown in pots and tubs and used to decorate living rooms and patios. In the city of Guatemala it is occasionally used for the same purpose, the plants being brought down from Coban.

"In the forests the *pacayito* seems never to reach a greater height than 3 feet. It is a true dwarf (one might almost call it a miniature palm), for it reaches maturity and comes into flower when not over a foot high. This dwarf habit makes it of unusual interest as a pot plant for the North, as it can be fruited in an ordinary living room when growing in an 8-inch pot.

"It makes its character leaves almost as soon as the young plant is out of the seed. I have seen many plants in the forest which were not

44994 to 44999—Continued.

over 4 inches high and already had two to four fully characterized leaves. When quite small it strongly resembles *Cocos weddelliana*, but the pinnæ are somewhat broader and not so numerous. For fern dishes in the Northern States it should have great value.

"When mature, the plant has a slender trunk, perhaps half an inch thick and 2 feet high. The leaves are a foot to 18 inches in length, rather finely pinnate, deep green, graceful, with the rachis stiff but arching slightly. In Vera Paz the flowers are produced in June and July, and the small, round seeds, about as large as small peas, ripen in December.

"Since it is found at considerable elevations in Vera Paz, it seems likely that this palm will be sufficiently hardy for cultivation in the open in California and Florida. It should be provided with ample shade, however, and planted in a very moist situation in soil containing a large proportion of leaf mold.

"As a house plant for the Northern States and for use in fern dishes it seems to me that this plant possesses unusual possibilities, and I strongly recommend it for trial."

For an illustration of the pacayito palm, see Plate I.

44995. SALVIA HEMPSTEADIANA Blake. Menthaceæ.

"(No. 151. July 9, 1917.) Plants of an herbaceous perennial collected on the banks of a small stream at Purula, Department of Baja Vera Paz (altitude 5,200 feet).

"The plants commonly grow 1½ to 2 feet in height, and soon after the beginning of the rainy season (May) send up spikes of brilliant blue flowers, tubular in form and about an inch long. It is a conspicuous thing when in bloom, and is strongly recommended for trial in California and Florida, where it should be hardy."

44996. PERSEA sp. Lauraceæ.

"(No. 152a. Seeds from the Chuacus Mountains, near Rincon Grande, about 5 miles from Salama, at an approximate altitude of 3,000 feet. July 9, 1917.)

"I do not know what this species may be; possibly it is as yet undescribed. Only one tree has been seen up to the present, and this was erect, rather slender in habit, and 30 feet in height. The foliage strongly resembles that of *Persea americana*, but is more heavily pubescent beneath than is common in that species. In form and size the leaves could not be distinguished from some of the cultivated avocados. The young leaves and branchlets are covered with a velvety tomentum.

"The fruits, which ripen in June, are oval or oblong-oval in outline, about 1½ inches in length, shining black in color, with a membranous skin and a very small amount of greenish pulp having a strongly resinous taste. The seed is quite large in comparison with the size of the fruit, elliptical in outline, with the seed coats thin, brownish, and brittle, and adhering closely. The cotyledons are whitish, with the embryo at the base of the seed. The fruit is distinct from that of the avocado in having a large, fleshy, bluntly toothed calyx, pinkish or whitish in color, which remains on the tree when the fruit falls.

"This species is introduced in connection with the experiments now being carried on with a view to determining the best stock on which to bud the avocado."

44997. DIPHYSA sp. Fabaceæ.

"(No. 153a. July 9, 1917.) Seeds of a leguminous shrub common in the mountains of the northern part of the Department of Baja Vera Paz,

44994 to 44999—Continued.

between Salama and Santo Tomas. It grows in dry, rocky places and also along the banks of streams, reaching a height of about 3 feet under the former conditions and 6 feet under the latter. The foliage is coarsely pinnate, with oval, glaucous leaflets. The flowers, which are produced in clusters of considerable size, are of a deep lilac and quite attractive. In form they resemble the flowers of the common pea, but are smaller, being about half an inch broad. The shrub seems well worthy of trial in California and Florida."

44998. TABEBUIA PENTAPHYLLA (L.) Hemsl. Bignoniaceæ.

"(No. 154a. July 9, 1917.) *Matiliscuate.* Seeds of a handsome flowering tree found in north-central Guatemala, especially in the Valley of Salama, and commonly growing near small streams. I have seen it at altitudes of 2,000 to 3,500 feet. The tree is about 35 feet high at maturity, with a spreading crown, deciduous during the latter part of the dry season (January to March), and producing large clusters of pink flowers which make the tree a mass of color visible for some distance. Its flowering season is from January to March, and the seeds, which are produced in long, slender pods, ripen in May and June.

"As an ornamental tree for cultivation in southern Florida and possibly also in California the *matiliscuate* seems well worthy of trial. Its only defect is its habit of dropping its leaves during the dry months of the year. If it flowers in the same months in Florida as it does in Guatemala, however, it should be a valuable addition to the flowering trees of that region. It thrives on heavy but rocky land and does not seem to require a large amount of water."

44999. PERSEA SCHIEDEANA Nees. Lauraceæ. Coyó.

"(No. 161. Bud wood from the sitio of Don David Pierri, San Cristobal, Vera Paz, July 3, 1917.)

"The *coyó, chucte, shucte,* or, as it is sometimes called, *chaucte,* is a species of Persea which is undoubtedly indigenous in this region. It is reported also from Zacapa and Chiquimula, but I have seen it only here up to the present. The tree grows on the banks of streams, where the soil is moist and rich. The hills in this region are dry, rocky, and covered with a scanty vegetation of cacti, Pereskia, thorny leguminous shrubs and small trees, and a few other plants. As well as being indigenous in this region, the *chucte* must be classed as a cultivated fruit tree, since it is occasionally, but not often, planted in gardens.

"At the present time the *chucte* is neither in flower nor in fruit. It is said to bloom in February and to ripen its fruit in May and June, continuing until August. One of the two trees which I have seen (this one standing on the north bank of the Rio Motagua a short distance above El Rancho) was about 60 feet in height. The other one was not more than 45 feet high. The general appearance of the tree, its habit of growth, size, and character of bark and foliage are remarkably suggestive of an avocado of the West Indian type, but on closer examination it is seen that the leaves are larger than is common with the avocado, the venation is impressed on the upper surface of the leaf, and, most conspicuous of all, the ends of the young branchlets and the petioles are covered with a ferruginous tomentum. The foliage is said to fall just before the tree comes into bloom, the flowers making their appearance along with the new leaves.

THE PACAYITO, A NEW ORNAMENTAL PALM FROM GUATEMALA.
(CHAMAEDOREA SP., S. P. I. No. 44994.)

These graceful dwarf palms are used very effectively for home decoration in Guatemala. The palms shown here were in the "corredor" of the residence of Don Enrique Dieseldorff at Coban. It is a question whether or not they will endure the steam heat of buildings in the colder parts of the United States, but they will surely be of value on the west coast and in the Gulf region. (Photographed by Wilson Popenoe, Coban, Guatemala, September, 1917; P17473FS.)

A YOUNG COYÓ TREE IN GUATEMALA. (PERSEA SCHIEDEANA NEES., S. P. I. No. 44999.)

Wilson Popenoe considers the coyó a better flavored fruit than the avocado, to which it is closely allied. Unfortunately, horticulturists have given it no attention up to the present time; doubtless careful selection and breeding will produce superior varieties, and it deserves to be called to the attention of all tropical horticulturists, as it constitutes a new fruit. It occurs in Guatemala at altitudes ranging from 300 to 6,000 feet and will also possibly succeed in southern California and in southern Florida. (Photographed by Wilson Popenoe, Sepacuite, Guatemala. November 28, 1916; P16963FS.)

44994 to 44999—Continued.

"The leaves are clustered at the ends of the branchlets, though not crowded. The leaf blades are oblong-elliptic, truncate at the base, sharply acute to shortly acuminate at the apex, 8 to 12 inches long, 4 to 7 inches broad, bright green and glabrous above, glaucous and rather heavily pubescent below; the pubescence is ferruginous on the midrib and to a less degree on some of the larger transverse veins. The venation is slightly impressed on the upper surface and very prominent below. The petioles are 1 to 1¾ inches long, narrowly canaliculate toward the articulation with the leaf blade, and ferruginous pubescent like the branchlets from which they arise.

"The fruit is described as long and slender, almost black, with a large and long seed and thin flesh. The flavor is described as rich and bland, similar, but superior, to that of the avocado. It is highly esteemed by the inhabitants, and it is stated that it has even been shipped to the city of Guatemala and sold in the market there." (Quoted from description furnished with Mr. Popenoe's No. 72.)

For an illustration of a coyó tree, see Plate II.

45000 and 45001.

From Amsterdam, Netherlands. Procured through Mr. Frank W. Mahin, American consul, from J. B. Wijs & Zoon. Received July 21, 1917.

"Official statistics as to the exports of these mustards are lacking, but it is estimated that they aggregate about 4,000 tons annually, while the home consumption is about 500 tons. This seed in Holland is sown in May in sandy soil and must grow for two years." (*Mahin.*)

These seeds were introduced for the Bureau of Chemistry, for investigations of commercial mustards.

45000. BRASSICA ALBA (L.) Boiss. Brassicaceæ. **White mustard.**

45001. BRASSICA NIGRA (L.) Koch. Brassicaceæ. **Black mustard.**

45002 and 45003. LINUM USITATISSIMUM L. Linaceæ. **Flax.**

From Amsterdam, Netherlands. Procured through Mr. Frank W. Mahin, American consul, from J. B. Wijs & Zoon. Received July 21, 1917.

These seeds were introduced for the Office of Fiber-Plant Investigations.

45002. No. 1. *Blue blossom.* **45003.** No. 2. *White blossom.*

45004. HYPHAENE THEBAICA (L.) Mart. Phœnicaceæ. **Doum palm.**

From Cairo, Egypt. Fruits presented by Mr. F. G. Walsingham, Horticultural Division, Gizeh Branch, Ministry of Agriculture. Received July 21 and 27, 1917.

"Obtained in the District of Aswan, Upper Egypt, where the species is fairly abundant." (*Walsingham.*)

An Egyptian palm, 3 to 9 meters (10 to 40 feet) in height, with a trunk about 30 centimeters (a foot) in diameter, either simple or, more frequently, dichotomously branched. The 20 to 30 fan-shaped leaves on the ends of each branch are sheathed at the base by spiny margined petioles. The spadices are 80 to 100 cm. (32 to 40 inches) in length, and up to 5 cm. (2 inches) thick at the base. The fruit is usually an obliquely ovoid nut about 6 cm. (2⅜ inches) long. (Adapted from *Muschler, Manual Flora of Egypt, vol. 1, p. 188.*)

45005. Craniolaria annua L. Martyniaceæ.

From Kew, England. Presented by Sir David Prain, director, Royal Botanic Gardens. Received July 23, 1917.

A coarse, wide-spreading, rank annual, about 2 feet high, with large, opposite, palmately lobed leaves with dentate margins, racemes of white flowers, and a two-valved many-seeded capsule with a long incurved beak. It is a native of northern South America, where it is known as *Creole scorzonera* and where the thick, fleshy root is preserved in sugar as a comfit. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 2, p. 877.*)

45006 to 45008.

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received July 23, 1917.

45006. Foeniculum vulgare Hill. Apiaceæ. **Fennel.**

Fenouil doux. The sweet fennel is quite popular as a winter and spring vegetable in southern Europe. The young shoots are eaten like asparagus tips, either plain boiled or served with a sauce. The plant will grow on very stony, steep slopes, where it serves as a soil binder, but it responds readily to better treatment. (Adapted from *letter of Dr. A. Robertson Proschowsky dated June 30, 1917.*)

45007. Musa paradisiaca seminifera (Lour.) Baker. Musaceæ. **Plantain.**

A wild seed-bearing form of the plantain, having small, oblong, greenish fruits full of seed. These fruits are about a third of the size of the common banana and are of pleasant taste, although encumbered by numerous seeds. The plant is quite ornamental and hardier than the common banana, so that it might be possible, by selection or hybridization, to extend the range of banana culture. (Adapted from *letter of Dr. A. Robertson Proschowsky dated June 30, 1917.*)

45008. Priotropis cytisoides (Roxb.) Wight and Arn. Fabaceæ.

A leguminous bush with slender branches, trifoliate leaves 2 to 3 inches long, and numerous many-flowered racemes of pale-yellow flowers. It is a native of the tropical region of the eastern Himalayas and is cultivated in Nice, France, where from November to April the abundant nectariferous flowers furnish about the only food available to the bees. Its winter-blooming habit and attractive flowers make it a desirable ornamental for regions not subject to severe frost. (Adapted from *Hooker, Flora of British India, vol. 2, p. 65,* and from *letter of Dr. A. Robertson Proschowsky dated June 30, 1917.*)

45009. Butia capitata (Mart.) Becc. Phœnicaceæ. **Palm.**

From Gotha, Fla. Fruits presented by Mr. H. Nehrling. Received July 23, 1917.

"This is the most massive of hardy Cocos species which I have. The bunches of fruits usually weigh about 50 pounds each. I raised the plant from seeds received from the late Dr. Hermann Burmeister, of Buenos Aires, who informed me that the seeds had been collected by Dr. Niederlein at Entre Rios, Argentina, about 22 years ago. These Cocos species are the most beautiful and hardy on the high pinelands, and most of them are edible and very aromatic." (*Nehrling.*)

45010. SPONDIAS LUTEA L. Anacardiaceæ. **Yellow mombin.**

From Bahia, Brazil. Presented by Dr. Leo Zehntner. Received July 24, 1917.

"This species is generally considered inferior in quality to the red mombin (*Spondias mombin*). Its cultivation is much less extensive, but it occurs abundantly as a wild tree in many tropical regions. The name hog-plum, which has been applied to it in the West Indies, has perhaps given it a worse reputation than it merits. This name should not, as Cook and Collins point out, cast any reflection on the character of the fruit, inasmuch as it refers to the fact that hogs are extremely fond of it and fatten upon the fruit which falls to the ground from wild trees in the forest.

"The tree is tall and stately in appearance. Under favorable conditions it may reach 60 feet in height. The leaves are 8 to 12 inches long, composed of 7 to 17 ovate-lanceolate or lanceolate-serrulate leaflets, oblique at the base and 2½ to 4 inches in length. The yellowish white flowers are borne in loose panicles 6 to 12 inches long. The fruit is ovoid, commonly an inch in length, bright yellow, with a thin skin and an oblong seed of relatively large size. The flesh is yellow, very soft and juicy, and of subacid, rather pungent flavor. Many varieties are scarcely pleasant to the taste; others are sweet and agreeable. The fruit is usually eaten while fresh.

"This species is considered to be cosmopolitan in the Tropics. In Spanish-speaking countries it is called *jobo*. In Brazil it is known as *cajá*. In the French colonies the names *mombin jaune* and *prune myrobalan* are current.

"Occasional trees are seen in cultivation throughout tropical America. Cook and Collins state that it is planted extensively in Porto Rico. In southern Florida it succeeds, but has never become common. In California no trees of fruiting age are known. The species is rather susceptible to frost; it is found in the Tropics only at low elevations, and it probably will not withstand temperatures much below the freezing point, particularly when young." (*Wilson Popenoe.*)

45011 to 45018.

From Venezuela. Presented by Mr. H. M. Curran. Received July 24, 1917.

45011. ACACIA sp. Mimosaceæ.

"(Caracas, 500 to 3,000 feet elevation.) *Cují.* A Prosopislike tree with a short trunk; requires more moisture than Prosopis." (*Curran.*)

45012. ACACIA FARNESIANA (L.) Willd. Mimosaceæ.

"*Cassie.* From Caracas."

A much-branched shrub 6 to 10 feet high, with compound leaves having linear leaflets and very fragrant deep-yellow flowers in large, globular heads. The cylindrical, indehiscent pods finally become turgid and pulpy. The shrub is probably a native of tropical America, but is now cultivated as an ornamental in many places and is grown in France for perfume. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 1, p. 188.*)

45013. BUMELIA sp. Sapotaceæ.

"(La Guaira, June, 1917.) A small tree growing in the forests along the coast, bearing large quantities of edible black fruits." (*Curran.*)

45014. FURCRAEA sp. Amaryllidaceæ.

"(No. 1128. Caracas and Puerto Cabello, 4,000 to 5,000 feet. June 27, 1917.) The cultivated *cocuisa*, one of the fiber plants of Venezuela." (*Curran.*)

45011 to 45018—Continued.

45015. MALPIGHIA sp. Malpighiaceæ.

"(Puerto Cabello.) *Simaruco.* A tree or shrub; ornamental when in fruit; fruits red, edible." (*Curran.*)

45016. PASSIFLORA QUADRANGULARIS L. Passifloraceæ. **Granadilla.**

"(La Guaira. June, 1917.) *Oyama.* Fruits large, 8 inches long and 6 inches in diameter. Used as a preserve." (*Curran.*)

A stout quick-growing climber, with large oval leaves and square stems. Its large greenish yellow fruit is not unlike a short and thick vegetable marrow and contains in its hollow center a mass of purple subacid pulp mixed with the flat seeds. The root is usually swollen and fleshy and is sometimes eaten like a yam. The plant is propagated by seeds or cuttings, and the flowers should be fertilized by hand to insure good crops. Although a native of tropical America, this plant is widely cultivated throughout the tropical regions of the Old World. (Adapted from *Macmillan, Handbook of Tropical Gardening and Planting, p. 180.*)

45017. RUBUS sp. Rosaceæ. **Blackberry.**

"(No. 1119. Caracas, June, 1917.) The common blackberry of the upper slopes, 4,000 to 6,000 feet altitude." (*Curran.*)

45018. (Undetermined.) Araceæ.

"(No. 1140. Puerto Cabello, June, 1917.) A terrestrial or epiphytic aroid; suitable as a house plant." (*Curran.*)

45019. ASIMINA TRILOBA (L.) Dunal. Annonaceæ. **Papaw.**

From De Kalb, Mo. Cuttings presented by Mr. J. C. Roach. Received July 27, 1917.

"(July 23, 1917.) *Long John* papaw. Grown on the John Cole farm, 3 miles south of De Kalb." (*Roach.*)

The fruit of this variety is of unusual shape, very long in proportion to its breadth (sometimes almost like a banana in form), and weighs 7 or 8 ounces. The quality is good but not equal to that of several others, and the fruit is a good shipper, perhaps the best of all, the skin being notably tough and thick. (Adapted from *Journal of Heredity, January, 1917*, in which is described the offer of the American Genetic Association which brought this and many other varieties of papaws together for comparative study.)

45020 to 45022.

From Guatemala. Collected by Wilson Popenoe, Agricultural Explorer of the Bureau of Plant Industry. Received July 26, 1917. Quoted notes by Mr. Popenoe.

45020. ANNONA CHERIMOLA Mill. Annonaceæ. **Cherimoya.**

"(No. 164. Bud wood from the sitio of Julio Guerra, Antigua, July 16, 1917.)

"An unusually productive and otherwise desirable cherimoya from the garden of Julio Guerra, who keeps a small tienda across the street from the rear of the Hotel Rojas. This is the most productive tree I have seen in this entire region, though I have examined a large number, not only in Antigua but in many of the surrounding villages.

"There is one peculiarity worthy of mention. Both this tree, and the one in Duenas, from which I obtained bud wood (No. 49, S. P. I. No. 43485), have been topped within the last few years, and the present crown is all new wood. These two trees are the only ones I have seen

45020 to 45022—Continued.

bearing good crops of fruit, and this naturally brings up the question, Is the productiveness of these trees due to the fact that they have been topped? It rather looks as though it may be, and it would be well worth while experimenting with some of the old seedling trees in southern California to see if topping would render them more productive. Topping is not done here with the intention of making the trees produce more fruit; it has been purely accidental in these two cases. The large limbs have been cut back within a foot or two of their union with the trunk. From the stubs numerous sprouts have made their appearance, and on these much more fruit is produced than upon the fruiting branches of the ordinary crown.

"The tree from which this bud wood was taken has a trunk about 10 inches in diameter, and the crown is now about 10 feet broad. I counted over 50 fruits on the tree, which is a large crop for a cherimoya.

"In form the fruits are heart shaped or bluntly conical, much freer from irregularities than many varieties, of large size, averaging about a pound in weight. The surface is clean and almost smooth, the carpellary areas being indicated by raised lines.

"This is a variety of pleasing form and appearance, of good size for handling and marketing, and the quality seems to be good. It ripens earlier here than most of the other seedlings, the first fruits having already dropped, while the fruits on most of the other trees I have seen are still immature. It should be tried in California."

45021. ANNONA CHERIMOLA Mill. Annonaceæ. **Cherimoya.**

"(No. 165. Cuttings from the sitio of Julio Guerra, Antigua, July 16, 1917.) A productive variety of the *cherimoya*, or *anona* as it is called in the Guatemalan highlands.

"The tree is small, though not young. Apparently it has been cut back heavily, leaving only one limb of the several which formerly composed the crown. The height of the tree at present is about 15 feet, while the trunk is about 8 inches thick at the base. The crown is slender and unsymmetrical.

"At this date (July 16) the tree is carrying 102 young fruits and is still flowering. The season of ripening is from November to January. In form the fruits are cordate to conical. When ripe the larger ones will weigh more than 1 pound. The surface is rough, the carpellary areas on some specimens giving rise to short protuberances, while on other specimens the protuberances are almost wanting.

"Julio Guerra says the ripe fruit has very white flesh and is of good quality. The unusual productiveness of the parent tree commends the variety for trial in California and Florida."

45022. CHAMAEDOREA sp. Phœnicaceæ. **Pacaya palm.**

"(No. 167a. Seeds from San Cristobal, Department of Alta Vera Paz, July 16, 1917.) Nearly every garden in Coban, San Cristobal, and other towns of Alta Vera Paz contains a number of these attractive palms, grown not so much for ornament as for the edible inflorescences which they produce. In some parts of central Guatemala, such as San Antonio Aguas Calientes, the *pacaya* is occasionally seen, but it appears to be much more abundant in Vera Paz than in any other section of the Republic. It is cultivated at varying altitudes, the lowest observed being about 3,000 feet and the highest 5,200. From the fact that it succeeds at such high elevations as 5,000 feet it must be considered

45020 to 45022—Continued.

slightly hardy and may be found sufficiently so to be grown outdoors in southern California and Florida.

"The palm grows to a height of 15 to 25 feet, more commonly the former than the latter. The trunk is slender, erect, and about 2 inches thick. The leaves are 3 to 6 feet long, with 18 to 24 pairs of pinnæ subopposite toward the base of the rachis, often becoming alternate farther up. The lowermost pinnæ are narrow and not over 8 or 10 inches long; farther up they become 18 or 20 inches long and nearly 2 inches wide. In general, the foliage of this palm suggests that of the well-known *Areca lutescens* (properly *Chrysalidocarpus lutescens*) of northern conservatories. It is graceful, of rich green color, and in every way pleasing.

"The inflorescences appear from October to May, a few coming at other seasons of the year. They appear along the trunk a short distance beneath the lowermost leaves. Before the spathes burst and the flowers appear, these buds, which are 8 to 12 inches in length, are cut for use. The part which is eaten is the tender, white, much-branched inflorescence within the spathe. 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 most agreeable. When the buds are nearly ready to burst, the inflorescence frequently has a bitter taste, which is objectionable to some people, though much liked by others.

"This palm grows on a variety of soils, seeming to do well on clay and also on black sandy loam. It is frequently planted in gardens among coffee bushes, and in some sections it is planted beneath the shade of large trees. It may be necessary to supply shade for the plant in regions such as southern California. If so, this can be easily done by means of a lath or slat house.

"As an article of food the pacaya is much used in Guatemala and by local standards commands a good price, single inflorescences selling commonly at five or six for a peso (2½ cents) in the regions where they are grown. The leaves are widely used for decorative purposes, being cut to adorn houses during the many fiestas which take place in this country."

45023. SOLANUM TUBEROSUM L. Solanaceæ. **Potato.**

From Honolulu, Hawaii. Tubers presented by Mr. J. M. Westgate, agronomist in charge, Hawaii Agricultural Experiment Station. Received July 24, 1917.

Portuguese Red. These were submitted by Mr. J. B. Thompson, superintendent of the Glenwood Experiment Station, Hawaii. They are important because they are remarkably immune to the diseases (late-blight, wilt, etc.) which affect the ordinary potato." (*Westgate.*)

45024. RIBES SPECIOSUM Pursh. Grossulariaceæ. **Gooseberry.**

From Los Angeles, Calif. Presented by Mr. P. D. Barnhart. Numbered August 2, 1917.

"The books say that this is evergreen, but this is not true, for no matter how much water may be applied to it during the rainless season, it sheds its leaves and becomes dormant. As soon as the rains set in it springs into life, the rich, dark-green foliage appearing as though it were varnished. The new growth is bright red, thickly beset with spines of the same color. The brilliant

red flowers are pendent all along the stems of the previous year's growth. A hillside covered with these plants is a glorious sight. For some reason very few of the bushes set fruit." (*Barnhart.*)

45025. ULMUS PUMILA L. Ulmaceæ. **Elm.**

From Peking, China. Collected by Mr. Frank N. Meyer, Agricultural Explorer of the Bureau of Plant Industry. Received July 24, 1917.

A rather low Chinese tree, from 10 to 16 meters (35 to 50 feet) in height, with a short trunk up to 2.6 meters (8½ feet) in circumference. The bark is rough and deeply corrugated, and the spreading branches form a bushy crown. It is grown all over northern China and Manchuria as an avenue, shade, and timber tree. The strong Chinese carts are constructed chiefly from its wood. It resists drought, extremes of temperature, and neglect remarkably well and thrives in the semiarid regions of the Great Plains as well as in the Southwest. (Adapted from *notes of Frank N. Meyer*, and from *Sargent, Plantae Wilsonianae, vol. 3, p. 244.*)

45026 and 45027. BASELLA RUBRA L. Basellaceæ.

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received July 26, 1917.

45026. An East Indian annual or biennial cultivated in the Tropics as a potherb, like spinach. It is branched, grows to about 6 feet high, and has fleshy, green leaves and small greenish or reddish flowers. The leaves are produced very freely during the summer, when they are eaten as greens. The seeds are sown early in March or April in a warm place and in May or June are transplanted to the foot of a wall with a southern exposure. The plants should be supported by a trellis. The seeds are said to retain their viability for about five years. (Adapted from *Vilmorin-Andrieux & Co., Plantes Potageres, p. 32.*)

45027. Variety *cordifolia*. This is the largest variety of this species and the most cultivated, being used to cover trellises and dwellings. It is the most succulent variety also and is more used as a potherb than the others. (Adapted from *Hooker, Flora of British India, vol. 5, p. 21.*)

45028. SECURIDACA LAMARCKII Griseb. Polygalaceæ.
Easter blossom.

From St. Vincent, British West Indies. Presented by the agricultural superintendent, Botanic Gardens, at the request of Mr. A. G. Howell, Imperial Department of Agriculture. Received July 27, 1917.

A climbing woody vine with oval leaves up to 2 inches in length and scattered, lax, simple racemes of rosy scentless flowers, each about half an inch long. The fruit is a samara, somewhat similar to the samara of the maple tree. This vine is a native of Jamaica and St. Vincent and probably other islands of the British West Indies. (Adapted from *Grisebach, Flora of the British West Indian Islands, p. 30.*)

45029 to 45031. SACCHARUM OFFICINARUM L. Poaceæ.
Sugar cane.

From St. Croix, Virgin Islands. Cuttings presented by Dr. Longfield Smith, Agricultural Experiment Station, Christiansted. Received July 31, 1917.

Introduced for the Sugar Experiment Station, New Orleans, La.

45029. *Santa Cruz 14/7.*

45030. *Santa Cruz 14/47.*

45031. *Santa Cruz 13/13.*

45032. PHYTELEPHAS MACROCARPA Ruiz and Pav. Phœnicaceæ.
Ivory-nut palm.

From Panama, Canal Zone. Presented by Mr. B. H. A. Groth, National School of Agriculture. Received July 28, 1917.

An arborescent palm with a thick, rough, creeping trunk, from the under surface of which roots are given off. The leaves which crown the trunk closely resemble those of the coconut palm in size, shape, and disposition. The flowers emit a powerful perfume, especially the large, white, pistillate flowers, which are, however, few in number. The ripe fruit consists of three portions—an exterior part which is dark, rough, and woody; a middle part, which consists of a yellowish, oily, sweet-tasting pulp; and an inner part, the seed, which is the vegetable ivory of commerce. These fruits grow on the trunk just above the bases of the leaves in bunches of six or seven and are called *cabeza de negro* by the natives of Colombia. The palm is a native of South America and Central America. The albumen of the seed is the so-called vegetable ivory, and this becomes whiter and more opaque on exposure to the air. (Adapted from *West Indian Bulletin, vol. 9, p. 279, 1908.*)

45033. JUGLANS PORTORICENSIS Dode. Juglandaceæ.
Porto Rican walnut.

From Mayaguez, Porto Rico. Seeds presented by Dr. D. W. May, agronomist in charge, Agricultural Experiment Station. Received July 28, 1917.

A Porto Rican walnut tree 20 to 25 meters (65 to 80 feet) in height, with slightly hairy, compound leaves composed of 7 to 13 pairs of broadly oval, pointed leaflets. The round brownish red fruit, 3 to 5 centimeters (1 to 2 inches) long, incloses a wrinkled subconical nut. (Adapted from *Bulletin Société Dendrologique de France, No. 13, p. 201, 1909.*)

45034 to 45036. Poaceæ.

From Port au Prince, Haiti. Presented by Capt. John Marston, civil administrator. Received July 28, 1917.

45034 and 45035. ORYZA SATIVA L. **Rice.**

Haitian Rangoon rice. Grown at the Thor Experiment Station, Port au Prince.

45034. Small dark-seeded form.

45035. Large light-seeded form.

45036. ZEA MAYS L. **Corn.**

"Selected maize. A prolific bearer throughout Haiti—in the mountains, along the beach, and in the valleys and lowlands." (*Marston.*)

45037 to 45040.

From Burringbar, New South Wales, Australia. Presented by Mr. B. Harrison. Received July 30, 1917.

45037. ANDROPOGON ERIANTHOIDES F. Muell. Poaceæ. **Grass.**

"*Satintop.*" An erect glaucous grass, 2 or 3 feet high, with rather narrow leaves and usually three or four sessile, erect spikes about 3 inches in length. It is a native of New South Wales and Queensland, where it is considered a very superior grass for forage purposes. It produces a heavy crop of rich, succulent foliage, spreads from the roots, and also seeds freely. (Adapted from *Bentham, Flora Australiensis,*

45037 to 45040—Continued.

vol. 7, p. 529, and from *Maiden, Useful Native Plants of Australia, p. 73.*)

45038. ANDROPOGON INTERMEDIUS R. Br. Poaceæ. **Grass.**

An erect grass with rather narrow leaves and slender spikes, growing in large clumps, 2 feet or more in height. It is a native of Australia, where it is used as a forage grass. It is readily propagated from the roots. (Adapted from *Bentham, Flora Australiensis, p. 531,* and from *Agricultural Gazette, New South Wales, May 2, 1914.*)

45039. CHAETOCHLOA BARBATA (Lam.) Hitchc. and Chase. Poaceæ. **Grass.**

A weak-stemmed annual grass which grows freely in open and waste ground from the West Indies to Brazil. It is a native of tropical Asia, and in Australia has been recommended as a forage grass. (Adapted from *Hitchcock and Chase, Grasses of the West Indies,* and from *letter of B. Harrison.*)

45040. PANICUM DECOMPOSITUM R. Br. Poaceæ. **Grass.**

A tall, coarse, succulent, semiaquatic grass, cultivated in many parts of Australia as a forage crop. It produces an abundance of forage and is greatly relished by stock. It has yielded under cultivation as much as 3 tons of hay per acre. The seeds are produced in December and January. (Adapted from *Maiden, Useful Native Plants of Australia, p. 97.*)

45041 to 45043. HORDEUM VULGARE COELESTE L. Poaceæ. **Barley.**

From Nanking, China. Presented by Mr. J. H. Reisner, College of Agriculture and Forestry, University of Nanking. Received July 30, 1917.

"Hull-less barley, collected in Chinese fields, June, 1917. These hull-less barleys mature earlier than the hulled varieties and are harvested early in May." (*Reisner.*)

45041. Light.

45042. Medium.

45043. Dark.

45044. RUBUS RACEMOSUS Roxb. Rosaceæ. **Blackberry.**

From Kingston, Jamaica, British West Indies. Seeds presented by Mr. William Harris, Hope Gardens, Department of Agriculture. Received July 31, 1917.

A rambling bush, with the branchlets, petioles, and inflorescence covered with glandular hairs and with straight or hooked prickles on the stems. The leaves are composed of five to seven oval or roundish dentate leaflets, and the large red flowers are in axillary or terminal corymbs. The plant is a native of the Nilgiri Hills, India. (Adapted from *Hooker, Flora of British India, vol. 2, p. 340.*)

45045. BUTIA ERIOSPATHA (Mart.) Becc. Phœnicaceæ. **Palm.**

(*Cocos eriospatha* Mart.)

From Gotha, Fla. Fruits presented by Mr. H. Nehrling. Received August 1, 1917.

"A most beautiful glaucous pinnate-leaved palm with slightly violet-colored leaf stems. The seeds were received under the name of *Cocos blumenavia* from

Blumenau, in Brazil, in 1892. This palm bore its first bunches of fruit four years ago. The large cream-colored flower cluster is inclosed in a spathe densely covered with a felty, brown, soft wool. The fruits have no odor. They are the size of a very large cherry or small plum, are yellow, and are covered with deep-brown spots. The fruit is the most delicious of all the hardy Cocos and reminds one of the flavor of a very good, sweet plum. The palm grows on high, dry pineland and is hardier than the orange." (*Nehrling.*)

Cocos blumenavia Hort., is referred by Beccari, L'Agricoltura Coloniale, vol. 10, p. 612, to his new genus Butia, as either *Butia eriospatha* or *B. capitata.*

45046. PYRUS USSURIENSIS Maxim. Malaceæ. **Pear.**

From Charles City, Iowa. Cuttings presented by Mr. Charles G. Patten. Received August 4, 1917.

The origin of these cuttings is given in the following account: In Grundy Center, Iowa, there is a pear tree which endured the extremely cold winters of 1883 to 1885. This tree, now owned by Mr. O. A. Bardhall, a tailor, was imported from China as a sand pear by John S. Collins & Sons, of New Jersey, and was supposed by them to bear fruit nearly the size of *Flemish Beauty,* but only of cooking quality. The extreme hardiness of the tree appealed to Mr. Charles G. Patten, of Charles City, Iowa, who planted one in his orchard, and the following year planted two more. The second year after that the tree bore fruit, but on account of its early blooming and consequent lack of pollination bore only a scanty number of small, green-colored, hard pears. (Adapted from *Charles G. Patten, Report of the Iowa State Horticultural Society for 1912, p. 162.*)

45047. MELICOCCA BIJUGA L. Sapindaceæ.

From Caracas, Venezuela. Presented by Mr. Henry Pittier, Agricultural Experiment Station. Received August 6, 1917.

"A small or middle-sized tree with thick foliage. The round or oval fruits are about the size of a pigeon's egg and are borne in racemes hanging from the ends of the branchlets. Each fruit has a single seed, with a layer of sweet, jellylike pulp between the seed and the green pericarp. The roasted seeds are said to be of fine flavor. The tree grows from sea level to 1,200 meters (3,900 feet) and should thrive in Florida." (*Pittier.*)

45048. DOVYALIS TRISTIS (Sond.) Warb. Flacourtiaceæ.

From Pretoria, Transvaal, South Africa. Seeds presented by Mr. I. B. Pole Evans, chief, Division of Botany, Department of Agriculture, Union of South Africa. Received August 6, 1917.

"A tree which occurs on the kopjes (low hills) around Pretoria and which bears an abundance of small fruits. These fruits make a delicious jelly." (*Evans.*)

Usually an unarmed shrub or small tree, 10 to 15 feet high, with leathery, obovate, glabrous leaves with shining upper surfaces. The inconspicuous flowers appear in November, followed in January by the roundish, yellow, pulpy fruits, which are about half an inch long. The fruits are highly flavored and are eaten raw or made into jelly. (Adapted from *Sim, Forests and Forest Flora of Cape Colony, p. 130.*)

45049 to 45064. PRUNUS spp. Amygdalaceæ.

Japanese flowering cherry.

Grown at the Plant Introduction Field Station, Rockville, Md., from scions presented by Mr. David Fairchild from his place, "In the Woods," Chevy Chase, Md. The collection came originally from the Yokohama Nursery Co., of Japan, in 1905. Numbered August 27, 1917. Quoted notes by Mr. Fairchild.

If anyone would grow these lovely flowering trees, he should be prepared to protect them from the San Jose scale by spraying them every spring before they flower (February or March) with the lime-sulphur solution.

45049 to 45052. PRUNUS SERRULATA Lindl.

45049. "Variety *Naden.* One of the loveliest of the very double, delicate pink varieties. Late flowering, about May 1. Flowers hang in clusters of two to five on long stems. Buds at first deep pink and truncate as though their tips had been cut off; they expand slowly and form wonderful, double, very large (1½ inches), flat flowers with petals of a delicate pink, deeper colored at the margins. Flowers in rifts. Tree extremely Japanesque. Fairly vigorous. One of the loveliest for small-lawn planting."

45050. "Variety *Hosokawa.* A very beautiful double-flowered form with truncate deep-pink buds and flat light-pink flowers in clusters of two to three on rather long pendent flower stalks. Very floriferous. Resembles closely the *Naden* [S. P. I. No. 45049], but the tree appears to be less vigorous. Late bloomer (May 1 in Maryland)."

45051. "Variety *Ōjōchin.* Flowers very slightly double, large (1½ inches), almost pure white, on short upright stems; slightly fragrant, late flowering (May in Maryland). Though the flowers are not borne in masses and the tree is not, therefore, as showy as trees of other varieties, the unusual size and beauty of the individual flowers, which resemble single roses, make it attractive for dooryards. Foliage bronze and golden in autumn. Tree not very vigorous."

45052. "Variety *Daizen.* Single, white, medium-sized flowers (1 inch) with distinct cherry fragrance. Midseason (Apr. 20 to May 1 in Maryland). The flowers are scattered most attractively through the tree, but the green leaves come out early, mixing with the flowers and preventing the tree from being very striking. Not one of the showy varieties, but an unusually vigorous grower that produces many seeds. Foliage in autumn golden yellow.

45053. PRUNUS SIEBOLDII (Carr.) Wittmack.

"Variety *Mikuruma-gayeshi.* Early flowering (Apr. 10 to 20 in Maryland), very light pink, semidouble, medium large flowers on long upright stems. Very floriferous. Tree vigorous and because of earliness of flowering a very desirable variety, though the individual flowers perhaps are not so lovely as very double late-blooming sorts.

45054 to 45062. PRUNUS SERRULATA Lindl.

45054. "Variety *Amenogawa.* Translated meaning, 'milky way.' One of the most striking varieties because of its upright or fastigiate growth. Peculiarly suited for architectural uses. Medium size,

45049 to 45064—Continued.

white to very light pink flowers on short stems borne in great masses, concealing the branches. As seen from below, the tree suggests the characteristic name. Tree not very vigorous."

45055. "Variety *Ussussumi*. Very late variety (May 1 in Maryland), with hanging, large, very double flowers borne in clusters. The petals are tinged with light brown, giving them a strange, though not unattractive appearance. The leaves, coming out at the same time as the flowers, are dark bronze. In autumn they turn to claret red after a sharp frost. Tree a fairly rapid grower, but trunk inclined to be tender. Very floriferous."

45056. "Variety *Murasaki*. Deep pink, semidouble flowers (1 inch) on short upright stems; very free flowering. While perhaps not quite so delicate as some of the very double light-pink varieties, this makes a striking show from a distance and for park use can be highly recommended. Tree low-heading, vigorous, flowering in midseason (Apr. 20 to May 1 in Maryland). Young foliage bronze color; in autumn golden yellow."

45057. "Variety *Chōshu*. Very large deep-pink double flowers (1½ inches), borne on long pendent stems in clusters of two to five. Flower buds very deep pink. Late flowering (May 1 in Maryland). Young foliage a beautiful bronze; in autumn gold and crimson. Tree not very vigorous or floriferous."

45058. "Undetermined variety. Single, medium sized (1 inch across), white flowers borne very profusely in short upright clusters; not fragrant. Midseason (Apr. 10 to 20). Tree a vigorous grower; very Japanesque. Trunk not often diseased. On fairly fertile soil forms a tree 20 feet tall in 10 years. Named, evidently incorrectly, *Jobeni*."

45059. "Variety *Asagi*. A rare variety with pale-green flowers, which when they first open have a strange but very attractive appearance; later the centers of the flowers turn red and they are then less attractive. Not showy at a distance, but delicately beautiful for use in house decoration. Tree rather delicate; late bloomer."

45060. "Variety *Wasemiyako*. Large, semidouble, almost pure white flowers, upright on short stems, very attractively arranged on the branches. Midseason (Apr. 20 in Maryland). Tree only fairly vigorous. Suitable for lawn planting, and showy from a distance."

45061. "Variety *Miyakobeni*. Midseason variety (Apr. 10 to 20 in Maryland) with semidouble flowers, 1¼ inches across, borne on short upright stems in clusters of two or three. Buds pointed; quite pink. Flowers pale pink when young, turning reddish with age; slightly fragrant. Tree very floriferous; a vigorous grower, attaining 20 feet in 10 years."

45062. "Variety *Toranowo*. Large (1½ inches) extremely double flowers; deep pink when in bud, becoming delicate light pink in full bloom; hanging on long stems in clusters of two to five. Buds flat as though tips were cut off. Not so free flowering as *Naden* [S. P. I. No. 45049], but with deeper pink flowers; prominent green pistils. Tree fairly vigorous."

45049 to 45064—Continued.

45063 and 45064. PRUNUS MUME Sieb. and Zucc. **Japanese apricot.**

45063. "Variety *Tsukasa-shibori*. Semidouble, very light pink flowered variety, blooming in Maryland in the middle of April. Though spoken of as the 'flowering plum of Japan,' the 'mume' of Japan is really an apricot. The delicate fragrance of the flowers, the extremely picturesque habit of growth of the tree, and its extreme earliness (April in Maryland), make it worthy of extensive trial. It rarely sets fruit in America. Fruits sour, but delicious when pickled."

45064. "Variety *Oteno*. The 'Japanese flowering plum' is really an apricot. The picturesque form of the tree and its extremely beautiful and fragrant blossoms, combined with the fact that it is one of the earliest of all trees to bloom, often so early that the snow falls on it, have made it the favorite of Japanese poets. It is hardy in the Atlantic Coast States, and even though its blossoms often are killed by frost it is worthy of extensive trial. Its fruits are sour and remind one of the American wild plum in flavor. When pickled they form part of the army ration of Japan."

45065. COLOCASIA sp. Araceæ. **Taro.**

Grown for botanical study at the Plant Introduction Field Station, Brooksville, Fla., from tubers received in March, 1912, from Mr. J. St. Clair White, Gough, S. C.

"This is the 'yellow tanyah,' grown in small patches by some of the planters along the Cooper River and in the coast region of South Carolina. It derives its name from the yellowish color of the cooked corms and cormels, as contrasted with the much darker, somewhat bluish color of the 'blue tanyah,' the only other variety commonly grown in the same region. The yellow tanyah plant is of slightly smaller growth than the so-called blue variety. The corms and cormels are also smaller, and the buds of these are white, while those of the blue tanyah are pink. The corms of the yellow tanyah are extremely acrid and require two hours' boiling in preparation for the table. The flavor is pronounced and is richer than that of the blue tanyah. The yellow tanyah strongly resembles the *Igname branca*, or white taro [S. P. I. No. 19996], of Madeira." (*R. A. Young.*)

For an illustration of this taro, see Plate III.

45066 to 45069.

From Puerto Bertoni, Paraguay. Presented by Dr. Moises S. Bertoni. Received August 1, 1917. Quoted notes by Dr. Bertoni.

45066. ARECASTRUM ROMANZOFFIANUM AUSTRALE (Mart.) Becc. Phœnicaceæ. **Pindo palm.**

"(May, 1917.) *Pindó-poí*. A very tall palm with a habit like a slender reversed pyramid. In the forests of eastern Paraguay it frequently becomes 20 meters or more in height, equaling the tallest trees of the fine forest which covers a great part of this region. The mature specimens of this palm furnish a very hard and resistant wood for 6 to 12 meters from the base of the trunk."

45067 and 45068. EUGENIA UNIFLORA L. Myrtaceæ. **Pitanga.**

45067. "(June, 1917.) *Añangapiríh-apuá*. A fruit tree 3 to 8 meters high. It prefers to grow in wooded lowlands drained by

45066 to 45069—Continued.

arroyo basins or on rocky slopes; in such situations the little tree becomes tall, with few branches and short twigs. In open places and in good soil it becomes less tall and more branched. The fruit is quite similar in appearance and taste to the pitanga of Brazil, but the tree is more resistant to cold, for it grows in localities where the minimum temperature reaches —5° or —6° C."

45068. "(June, 1917.) *Añangapirîh* variety. A variety of the preceding; equally edible."

45069. TRICHILIA CATIGUA Juss. Meliaceæ. **Katiguá.**

" (June, 1917.) A small ornamental tree found throughout the forests of Paraguay. The bark, according to our analyses, contains 20.5 per cent of crude tann'n and a large proportion of coloring matter for dyeing. The leather thus tanned is of red color, which is much esteemed."

45070 to 45072. VITIS VINIFERA L. Vitaceæ. **Grape.**

From Melbourne, Australia. Cuttings presented by Mr. François de Castella, Government viticulturist, Department of Agriculture, Victoria, Australia. Received August 6, 1917. Quoted notes by Mr. Castella.

45070. "*Red May.* A seedling of *Bicane* or *Raisin des Dames* which originated in the Bendigo District of this State (Victoria). It is a fine grape, of good flavor, and carries very well considering its juiciness."

45071. "*Doradillo.* The well-known grape of southern Spain. It is a very heavy bearer and is being much planted in this State (Victoria) for brandy distillat'on."

45072. "*King George V.* A *Gros Colman* sport, which is inferior to that variety, for the bunches are very badly filled although the berry is larger."

45073. BUTIA CAPITATA ODORATA (Barb.-Rodr.) Becc. Phœnicaceæ. (*Cocos odorata* Barb.-Rodr.) **Palm.**

From Gotha, Fla. Presented by Mr. H. Nehrling. Received July 27, 1917.

"The partially bright-red fruit, larger than those of *Cocos australis*, comes from a taller, open tree. There are not many fruits in a bunch, and I have not tasted them, but they appear to be good. This tree was also grown from seed received from Blumenau, Brazil, in 1890, which was collected by Gaertner from wild trees growing in stony or rather dry soil. These Cocos palms (*Cocos australis*, *C. gaertneri*, *C. datil*, *C. campestris*, *C. eriospatha*, and several others) all have rather hard bluish green leaves and thrive to perfection on our high, dry Flor'da pineland. I think they will grow all along the South Atlantic and Gulf coast. They all are fine ornamentals in any garden." (*Nehrling.*)

45074. PRUNUS SERRULATA SACHALINENSIS (Schmidt) Makino. (*P. sargentii* Rehder.) [Amygdalaceæ. **Sargent's cherry.**

From Jamaica Plain, Mass. Seeds presented by Dr. C. S. Sargent, Arnold Arboretum. Received August 3, 1917.

A handsome large tree, of great ornamental value; hardy as far north as Massachusetts and bearing profusely, in early spring, handsome rose-pink single flowers.

45075 and 45076. PROSOPIS CHILENSIS (Molina) Stuntz. Mimo-
(*P. juliflora* DC.) [saceæ. **Algaroba.**

From Oran, Province of Salta, Argentina. Presented by Mr. S. W. Damon. Received August 10, 1917.

Introduced for the work of the Office of Forage-Crop Investigations.

45075. *White.* **45076.** *Black.*

45077. ANNONA CHERIMOLA Mill. Annonaceæ. **Cherimoya.**

From Jujuy, Argentina. Seeds presented by Mr. S. W. Damon. Received August 11, 1917.

Reported to be frost resistant, having withstood 9 or 10 degrees C. of frost. Said to be a fine anona, weighing up to 2 kilograms.

45078 to 45081.

From Guatemala. Collected by Mr. Wilson Popenoe, Agricultural Explorer of the Bureau of Plant Industry. Received August 8, 1917. Quoted notes by Mr. Popenoe.

45078. PERSEA AMERICANA Mill. Lauraceæ. **Avocado.**
(*P. gratissima* Gaertn. f.)

"(No. 171. Avocado 31. From Mazatenango, Department of Suchitepequez. Altitude 1,148 feet.) *Nimah.* Bud wood of a variety obtained especially for trial in Florida, since it comes from the hot lowlands and may be better adapted to the conditions which obtain in extreme southern Florida than are those from the Guatemalan highlands.

"This is a pear-shaped fruit, sometimes curved, with a well-defined neck. It is of medium size, weighing about 11 or 12 ounces, deep green in color, with a rough surface and a thick, tough skin. The flesh is deep yellow in color, free from fiber, and of rich flavor. The seed is medium sized. On the whole the variety is satisfactory in point of flavor and quality, yet it is not good enough to be included in the Guatemalan collection on these characteristics alone."

45079. CHAMAEDOREA sp. Phœnicaceæ. **Pacayito palm.**

"(No. 168a. July 22, 1917.) Seeds of a dwarf palm which grows in the forests of the Department of Baja Vera Paz at altitudes of 4,000 to 5,000 feet.

"The Indians term this plant *ko-kiip*, which means 'small pacaya,' but as this name is applied to several other dwarf palms it does not possess much significance.

"On the mountain sides, under dense forest, this dwarf palm grows abundantly, apparently thriving in the deepest shade and in soils which are nothing but decaying vegetation. It has a slender stem, less than half an inch thick, which at times becomes half trailing, as it grows to 4 or 5 feet in length and is not strong enough to support the weight of the foliage. Probably if the plant received more light than it does in the dense forest it would remain erect and develop a stiffer trunk.

"In the young plants the leaves are once divided, resembling a fishtail in outline. They are about 6 inches in length and breadth and of light-green color. As the plant becomes older, the foliage becomes pinnate, with about three pairs of pinnæ, the terminal pair larger than the rest and joined together for some distance along the rachis.

45078 to 45081—Continued.

"This is an interesting and decorative small palm, which may be of value for house decoration in the United States. Since it comes from a cool climate it may be adapted to open-air culture in California and Florida."

45080. MIKANIA sp. Asteraceæ.

"(No. 169a. July 22, 1917.) Seeds of an herbaceous climber from the borders of Lake Amatitlan (altitude 3,900 feet). It scrambles over bushes and low vegetation, producing freely its flame-scarlet flowers, about an inch in diameter. Apparently it is a very rapid grower, and when in full bloom it is quite showy. It seems worthy of a trial in the United States."

45081. PERSEA SCHIEDEANA Nees. Lauraceæ. **Coyó.**

"(No. 170a. July 23, 1917.) Seeds of a very large variety of coyó from the town of El Rancho, in eastern Guatemala. The fruits from which these seeds were taken weighed from 1 to 2 pounds each. They were bright green in color, with very thick skins and milky white to brownish white flesh of very rich, nutty flavor. They contained a little fiber, but not as much as is commonly found in the coyó.

"These seeds should be planted in California and Florida and fruited as seedlings."

45082. BELOU MARMELOS (L.) Lyons. Rutaceæ. **Bel.**

(*Aegle marmelos* Correa.)

From Burma. Seeds presented by Rev. William H. S. Hascall, Riverside, R. I. Received August 6, 1917.

"This small tree, which is closely related to the orange, is grown in India, Ceylon, and near-by regions for its fruits. These are not much eaten by Europeans, but are popular among the natives. They are considered to have medicinal value.

"In size and form the fruit resembles an orange, but it has a hard, woody shell, inclosing a yellowish, somewhat mucilaginous pulp. The flavor is sweet and somewhat mawkish to the unaccustomed palate.

"The bel tree has been planted in southern Florida and gives promise of succeeding there, although its growth is slow. It is probably too susceptible to frost for cultivation in California." (*Wilson Popenoe.*)

45083. PERSEA AMERICANA Mill. Lauraceæ. **Avocado.**

(*P. gratissima* Gaertn. f.)

From Bogota, Colombia. Seeds presented by Sr. Alvaro Uribe. Received August 11, 1917.

"One of the best Colombian avocados, which grows at elevations of from 3,000 to 4,500 feet at temperatures ranging from 20° to 26° C. and ripens in April. The fruits are well shaped and excellent in taste. The trees are very robust and require only sufficient moisture in the air." (*Uribe.*)

45084. THEOBROMA CACAO L. Sterculiaceæ. **Cacao.**

From Tjikeumeuh, Buitenzorg, Java. Presented by the manager of the experimental garden, Tjikeumeuh, at the request of Dr. P. J. S. Cramer, chief of the Plant Breeding Station, Buitenzorg, Java. Received August 13, 1917.

"*Djati Roenggo* hybrid."

THE YELLOW TANYAH, AN EDIBLE AROID FOR THE SOUTHEASTERN COAST REGION. (COLOCASIA SP., S. P. I. No. 45065.)

The yellow tanyah, *Colocasia* sp., of the coast regions of South Carolina and Georgia. This is the smaller and richer flavored of the two kinds of taro, or tanyah, grown for perhaps two centuries in that section. The corms and cormels are extremely acrid and require boiling for two hours to prepare them for the table. The flesh is white, but becomes slightly yellowish in cooking. The flavor is rich but pronounced, and a taste for it usually has to be acquired. This taro is of an undetermined species of Colocasia related to the dasheen, *C. esculenta* (L.) Schott, and to the culcas, or Egyptian taro, *C. antiquorum* Schott. (Photographed by R. A. Young at the Plant Introduction Field Station, Brooksville, Fla., October 16, 1912; P13878FS.)

A PROMISING HYBRID ANONA. (ANNONA CHERIMOLA × A. SQUAMOSA, S. P. I. No. 45181.)

The cherimoya has not fruited well in Florida, but the sugar-apple has. Since the cherimoya is much superior in flavor and shipping qualities to the sugar-apple it is believed that in this hybrid an advantageous combination of characters has been obtained and that a free-fruiting type of hybrid is now available. Since it ripens in the winter like the cherimoya and is a delicious table fruit, it will be valuable for marketing in the tourist season. This hybrid was produced by Mr. Edward Simmonds, superintendent of the Plant Introduction Garden at Miami, Fla. (Photographed by Wilson Popenoe, at Miami, Fla., August 4, 1914; P16124FS.)

45085 to 45087.

From Venezuela. Collected by Mr. H. M. Curran. Received August 14, 1917.

45085. BAUHINIA sp. Cæsalpiniaceæ.

"From Guanta, Venezuela. A small ornamental leguminous tree growing in dense stands on the crest of hills in the dry, rocky, coast regions around Guanta." (*Curran.*)

45086. SPONDIAS LUTEA L. Anacardiaceæ. **Yellow mombin.**

"From the Orinoco Delta, Venezuela. A tree 100 feet in height and 3 feet in diameter, yielding large yellow edible fruits. Common name *jobo*." (*Curran.*)

45087. MANICARIA SACCIFERA Gaertn. Phœnicaceæ. **Lemiche palm.**

"From the Orinoco Delta, Venezuela." (*Curran.*)

45088. TABEBUIA PENTAPHYLLA (L.) Hemsl. Bignoniaceæ.

From Puerto Cabello, Venezuela. Seeds presented by Mr. H. M. Curran. Received August 16, 1917.

"*Apamato.* A timber tree with a profusion of ornamental pink flowers." (*Curran.*)

45089. CITRUS NOBILIS DELICIOSA (Ten.) Swingle. Rutaceæ. **Tangerine.**

From Paranagua, Brazil. Cuttings purchased from Rev. R. E. Pettigrew. Received August 16, 1917.

"June 14, 1917. A tangerine orange. Known here as *Mimosa*. Assunguy River, about 30 miles north of Paranagua, State of Parana, Brazil." (*Pettigrew.*)

These cuttings were sent in response to a request for a Brazilian tangerine. Said to be "the finest tangerine that grows, as large as a grapefruit, and to retail in New York at 25 cents each."

45090. NEPHROLEPIS sp. Polypodiaceæ. **Fern.**

From Santiago de las Vegas, Cuba. Plants presented by Mr. H. A. Van Hermann, Agricultural Experiment Station. Received August 17, 1917.

"From the mountains of Cuba." (*Van Hermann.*)

Introduced for the monographic studies of Nephrolepis by Mr. R. C. Benedict, of the Brooklyn Botanic Garden.

45091. PERSEA AMERICANA Mill. Lauraceæ. **Avocado.**

(*P. gratissima* Gaertn. f.)

From the city of Guatemala, Guatemala. Seeds obtained by Mr. Wilson Popenoe, Agricultural Explorer of the Bureau of Plant Industry. Received August 23, 1917.

Ordinary varieties of avocados from the Guatemalan markets; sent in to be grown as stocks for the better varieties of Guatemalan avocados.

45092. LIVISTONA AUSTRALIS (R. Br.) Mart. Phœnicaceæ. **Australian fan palm.**

From Sydney, New South Wales. Seeds presented by Mr. W. J. Allen, Department of Agriculture, New South Wales, through Prof. S. C. Mason, of the Bureau of Plant Industry. Received August 23, 1917.

A tall, slender palm, 12 to 18 inches in diameter and 100 to 130 feet in height. Native to eastern Australia. The moderately hard wood is light colored and is occasionally used for light construction. The leaves are used for baskets; and the unexpanded fronds, after being dipped in boiling water, are dried and the fiber used in making hats resembling Panamas. The "cabbage," either raw or cooked, is highly esteemed by the natives. (Adapted from *Maiden, Useful Native Plants of Australia.*)

45093. KENNEDYA STERLINGII Lindl. Fabaceæ.

From Sydney, New South Wales. Presented by Mr. Hugh Dixson. Received August 24, 1917.

"Put seed into boiling water; when cool, sow. Plant out seedlings in sandy, peaty soil, well drained. Plants will not stand temperatures below frost point." (*Dixson.*)

A trailing or twining leguminous perennial with trifoliolate leaves, the leaflets orbicular, and with scarlet or pale vermilion flowers in one or three pairs. Native to Western Australia. (Adapted from *Botanical Register, plate 1845.*)

45094. HOHERIA POPULNEA A. Cunn. Malvaceæ.

From Avondale, Auckland, New Zealand. Seeds presented by Mr. H. R. Wright. Received August 24, 1917.

"Commonly called *lacebark.*" (*Wright.*)

A handsome small tree or shrub, 10 to 30 feet in height, with very variable leaves and snow-white flowers produced in great profusion. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 3, p. 1496.*)

45095. ANACARDIUM OCCIDENTALE L. Anacardiaceæ. **Cashew.**

From Pernambuco, Brazil. Seeds presented by Mr. Arminius T. Haeberle, American consul. Received July 17, 1917.

A spreading tree, 30 to 40 feet in height, with large leathery leaves, bearing fruits consisting of a large, swollen, pear-shaped stalk, 2 to 4 inches long, and a small kidney-shaped nut, about an inch long, at the extremity. The stalk is juicy and acid and is used in preserves; the nut has an edible seed, which is roasted and served as a dessert. The tree is supposed to be a native of the West Indies and is propagated from seeds or by layering. (Adapted from *Macmillan, Handbook of Tropical Gardening and Planting, p. 134.*)

45096. BERBERIS TRIFOLIOLATA Moric. Berberidaceæ. **Barberry.**

Plants grown at the Plant Introduction Field Station, Chico, Calif., from seeds originally received from Dr. David Griffiths, collected in Texas. Numbered August 31, 1917.

Evergreen shrub, 2 to 5 feet in height, often forming large thickets. The leaves compound, the three leaflets each three to five lobed and spiny. Berries red, aromatic, and acid, about as large as peas; ripening in May; much used for tarts, jellies, etc. (Adapted from *Contributions from the U. S. National Herbarium, vol. 2, p. 10.*)

45097 to 45100. AMYGDALUS COMMUNIS L. Amygdalaceæ.
(*Prunus amygdalus* Stokes.) **Almond.**

Selected varieties from seedlings of the Jordan almond, grown at the Plant Introduction Field Station, Chico, Calif., under S. P. I. No. 29515. Numbered for convenience in recording distribution.

45097. Tree No. 4. **45099.** Tree No. 8.

45098. Tree No. 6. **45100.** Tree No. 12.

45101 and 45102. CARISSA GRANDIFLORA (E. Mey.) DC. Apocynaceæ. **Carissa.**

Grown at the Plant Introduction Field Station, Miami, Fla., from seedlings of S. P. I. No. 32482. Numbered for convenience in recording distribution.

Selected varieties from seedlings of S. P. I. No. 32482, chosen because of their compact, bushy habit and their fruitfulness.

45103. CRESCENTIA ALATA H. B. K. Bignoniaceæ.

Grown at the Plant Introduction Field Station, Miami, Fla., from seed received from Mr. David Fairchild. Numbered for convenience in recording distribution.

A small ornamental tree, 10 to 20 feet high, with fascicled, trifoliolate leaves, closely allied to the calabash tree, *Crescentia cujete*. The brownish rank-scented flowers are borne singly upon the trunk; and the hard, globose fruits are about 2 inches in diameter. This tree is occasionally cultivated in the Philippines, where it was introduced from Mexico at an early date.

45104 and 45105.

Grown at the Plant Introduction Field Station, Miami, Fla., from seed brought in by Mr. Wilson Popenoe, from Cuba, in May, 1915. Numbered for convenience in recording distribution. Quoted notes by Mr. Popenoe.

45104. CHRYSOPHYLLUM CAINITO L. Sapotaceæ. **Caimito.**

"In Cuba, in Jamaica, and in several other tropical American countries the caimito is a common dooryard tree and its fruit is held in the same esteem as that of the sapote and the sapodilla. As an ornamental tree it is excellent, since it has deep-green glossy foliage, satiny brown beneath. The fruits are as large as apples and either green or purple in color. They have soft, melting flesh of sweet, agreeable flavor, suggesting the sapodilla. The tree is successful in Florida as far north as Palm Beach and should be more commonly planted in that State."

Purple variety.

45105. TAMARINDUS INDICA L. Cæsalpiniaceæ. **Tamarind.**

"A magnificent evergreen tree, widely cultivated in many tropical countries, preferring deep alluvial soil and abundant rainfall. The plump, slightly curved pod has a thin, brittle shell which incloses a soft brownish edible pulp containing sugar with acetic, tartaric, and citric acids. The fruit is widely used in India and Arabia as an article of diet and in Latin America as the chief constituent of a refreshing beverage."

45106. ANNONA CHERIMOLA Mill. Annonaceæ. **Cherimoya.**

From Brisbane, Australia. Seeds presented by Mr. Leslie Gordon Corrie. Received August 23, 1917.

Seeds of a cherimoya growing wild in Queensland. To be grown as stocks for improved varieties.

45107 to 45109.

From Matania el Saff, Egypt. Presented by Mr. Alfred Bircher, Middle Egypt Botanic Station. Received August 24, 1917. Quoted notes by Mr. Bircher.

45107. CHRYSOPHYLLUM MONOPYRENUM Swartz. Sapotaceæ. **Satin leaf.**

"A sapotaceous tree, up to 35 feet in height; native of the West Indies. The leaves are broad, green above, and covered with a rusty or white tomentum beneath. The small white flowers are clustered at the nodes or in the axils. The fruit is oblong, egg shaped, blackish, 1½ inches in length, usually 1-seeded, and is said to be insipid. At Matania el Saff the tree has changed its flowering time and now bears flowers in July instead of November, as formerly."

45108. EUGENIA PUNGENS Berg. Myrtaceæ. **Guabiyú.**

"A bush from South America, with pungent leaves and myrtlelike flowers. The black fruits, mostly in pairs, hang on slender peduncles; they are about an inch across and contain a sweet yellow flesh, inclosing one or two large green seeds. Although the fruit at present is insipid in flavor, it might be improved by continuous culture."

45109. EUGENIA SUPRA-AXILLARIS Spring. Myrtaceæ.

"A glossy leaved evergreen shrub from eastern Brazil, bearing clusters of white flowers. The black globose 1-seeded fruits are sessile, in clusters of 3 to 10, and are about the size of small cherries. The flesh surrounding the hard round seed has a sweet, very resinous taste, somewhat resembling juniper berries. Formerly it flowered in November, but it now blooms in July."

45110. JASMINUM ANGULARE Vahl. Oleaceæ. **Jasmine.**

From the Union of South Africa. Seeds presented by Mr. I. B. Pole Evans, chief, Division of Botany, Department of Agriculture, Pretoria. Received August 24, 1917.

"Collected in the eastern Province of the Cape Colony." (*Evans.*)

A climbing shrub with angled twigs and trifoliolate leaves. The flowers are white and in three to seven flowered terminal or axillary cymes; the tube of the corolla is half an inch long. Native of South Africa.

45111 and 45112.

Seeds presented by Dr. David Griffiths, of the Bureau of Plant Industry. Received July 24, 1917.

45111. BAILEYA MULTIRADIATA Harv. and Gray. Asteraceæ.

A very handsome composite, common on the mesas of the Southwest in early spring. The large heads of yellow flowers with showy, bright-yellow persistent rays, which are reflexed in age, are sometimes produced throughout the summer and until late in the fall. (Adapted from *Wooton and Standley, Flora of New Mexico, p. 718.*)

45111 and 45112—Continued.

45112. ORTHOCARPUS PURPURASCENS Benth. Scrophulariaceæ.
Purple escobita.

A California annual about 1 foot high, with gaudy bracts and crimson or purplish corollas about 1 inch long. A common showy plant grown in the Sierra Nevada foothills, interior valleys, and coast ranges. (Adapted from *Jepson, Flora of Middle Western California, p. 414.*)

45113. HORDEUM VULGARE PALLIDUM Seringe. Poaceæ.
Black-kernel barley.

From Siokhe, Fukien, China. Presented by C. E. Gauss, American consul, Amoy, China, who obtained it from Rev. H. J. Voskuil. Received August 24, 1917.

"This appears to be the subvariety *coerulescens*." (*H. V. Harlan.*)

45114 to 45130. COCOS NUCIFERA L. Phœnicaceæ. **Coconut.**

From Ceylon. Presented by Mr. Alex. E. Rajapakse, Mudaliyar, Magdalene House, Negombo, at the request of the Ceylon Agricultural Society, Peradeniya. Received through Mr. Walter A. Leonard, American consul, Colombo, Ceylon, August 25, 1917.

A collection of the various forms of coconuts grown in Ceylon, secured for trial and comparative study in southern Florida.

45114. Greenish red. Large nuts.

45115. Brownish green. Very large size.

45116. Red. Medium size, rather long.

45117. Dark green. Large nuts.

45118. Deep red. Round, medium size.

45119. Green. Very long, medium size.

45120. Brown (light). Medium.

45121. Green. The ordinary variety.

45122. Light brown. Round, medium size.

45123. Green. Similar to S. P. I. No. 45121, but smaller.

45124. Light red. Similar to S. P. I. No. 45120, but smaller.

45125. Green. Perfectly round.

45126. Red. Small nut with a very thick kernel.

45127. Greenish red. Similar to S. P. I. No. 45125, but different in color.

45128. White King coconut.

45129. King coconut.

45130. (Maldivian.) Greenish.

45131. NEPHELIUM BASSACENSE Pierre. Sapindaceæ.

From Saigon, Cochin China. Seeds presented by the director, Department of Agriculture and Commerce. Received August 27, 1917.

A rather tall tree found in Cochin China, resembling *Nephelium lappaceum* in general appearance, but having straighter spines, red hairs on the lower surfaces of the leaves, etc. Its horticultural value is about the same as the rambutan (*N. lappaceum*). (Adapted from *Pierre, Flore Forestiere de la Cochinchine, plate 319.*)

45132 to 45137. SACCHARUM OFFICINARUM L. Poaceæ.

Sugar cane.

From Honolulu, Hawaii. Cuttings presented by the experiment station of the Hawaiian Sugar-Planters' Association. Received August 23, 1917.

45132. *Demerara No. 1135.*

45133. "*Hawaiian No. 20.* Of a greenish yellow color, turning slightly red when exposed to the sun; internodes long and the rind hard; resists insects quite well and withstands winds better than many of the other varieties. It is a very popular cane in Hawaii to-day." (*Philippine Agricultural Review, July, 1914.*)

45134. "*Hawaiian No. 27.* Very large, erect, dark-green or yellow stalk; somewhat resembles *Lahaina,* but has shorter internodes; rind firm but not quite as hard as *Hawaiian No. 20;* stools well and gives a good tonnage; juice usually rich in sucrose." (*Philippine Agricultural Review, July, 1914.*)

45135. *Hawaiian No. 109.* A rose-colored seedling of the *Lahaina* variety, with hard rind, very slight rooting tendency, medium eyes and internodes. It is of good milling quality, of good hopper resistance, has eight canes in the stool, and no recumbency. The purity of the juice is 92.3 per cent and the sucrose percentage 17.9. (Adapted from *Circular No. 4, Report of the Experiment Station of the Hawaiian Sugar-Planters' Association, 1907, p. 12.*)

45136. *Hawaiian No. 146.* A yellow seedling of Barbados 306, with no recumbency, very fair hopper resistance, 10 canes in the stool, medium internodes, prominent eyes, hard rind, and no rotting tendency. It is of good milling quality, and the percentage of sucrose is 16.0 and of purity 90.4. The weight of the cane per foot is 8.5 ounces. (Adapted from *Circular No. 4, Report of the Experiment Station of the Hawaiian Sugar-Planters' Association, 1907, p. 14.*)

45137. "*Hawaiian No. 227.* An erect and tall cane; rind of a yellowish color and very hard; leaves stand up well and have a midrib which is slightly greenish but not conspicuous. Tonnage and purity results at the bureau experiment station the past year were very satisfactory." (*Philippine Agricultural Review, July, 1914.*)

45138 to 45140. SACCHARUM OFFICINARUM L. Poaceæ.

Sugar-cane.

From Honolulu, Hawaii. Seeds presented by the experiment station of the Hawaiian Sugar-Planters' Association. Received August 23, 1917.

45138. "*Lahaina.* Stalk of medium size, yellowish green in color, and somewhat recumbent on account of the extremely soft outer tissue; internodes very long. This cane was once the popular cane of Hawaii." (*Philippine Agricultural Review, July, 1914.*)

45139. *Demerara No. 1135.*

45140. *Hawaiian No. 109.* See S. P. I. No. 45135 for description.

45141. CARICA DODECAPHYLLA Vell. Papayaceæ. **Papaya.**

From Misiones, Argentina. Seeds presented by Mr. Gustavo Haack, Buenos Aires, through Mr. W. Henry Robertson, American consul general, Buenos Aires. Received August 27, 1917.

"*Yacaratí-á.* A papaya, native to the Provinces of Misiones and Corrientes, Argentina. The trunk attains a circumference of 5 feet. The wood is much softer than that of the ordinary papaya; in fact, it may be said that there is no wood at all, simply bark. It is so easily worked that the peons with machete alone are able to make a canoe from the trunk in a very short time. When the tree becomes old the trunk often assumes a bottlelike shape, similar to that of the Palo borracho (*Chorisia insignis*). The fruit is large and is edible, either raw or cooked." (*Venturi and Lillo, Contribución al Conocimiento de los Arboles de la Argentina, p. 80*).

45142 to 45151. TRITICUM AESTIVUM L. Poaceæ. **Wheat.**
(*T. vulgare* Vill.)

From Sydney, Australia. Presented by Mr. George Valder, undersecretary and director, Department of Agriculture. Received August 27, 1917.

45142. *Bunyip.* A very early wheat, grown for grain only.

45143. *Comeback.* An early wheat used both for grain and hay.

45144. *Firbank.* A very early wheat used for both grain and hay.

45145. *Florence.* "It was noticed that during the 1916–17 season, when a great deal of rust was experienced all over this State, the Florence proved more rust resistant than any of the other varieties sent." (*Valder.*)

45146. *Marshall's No. 3.* A late wheat recommended for both grain and hay.

45147. *Rymer.* A late variety of wheat recommended for both grain and hay.

45148. *Sunset.* A very early wheat.

45149. *Warren.* A midseason wheat recommended for both grain and hay.

45150. *Yandilla King.* A late wheat recommended for both grain and hay.

45151. *Zealand.* A late wheat grown for hay only.

45152 to 45155.

From Buitenzorg, Java. Seeds presented by the director of the Botanic Garden. Received August 6, 1917.

45152. GNETUM GNEMON L. Gnetaceæ.

An evergreen shrub or small tree extending from the Khasi Hills of India southward to Singapore and Java. The sessile orange-colored fruits are about an inch long and are eaten by the natives. The leaves are eaten boiled like spinach, and the bark is said to furnish a strong bast fiber. (Adapted from *Koorder and Valeton, Boomsoorten op Java, vol. 61, p. 349.*)

45153. PAVETTA INDICA L. Rubiaceæ. **Pawatta.**

A common and very variable bush or small tree found throughout India and Malaysia. It bears few-flowered clusters of fragrant white

45152 to 45155—Continued.

flowers. The root is used medicinally as a diuretic and purgative; it is bitter, but not of an unpleasant flavor. The fruit is said to be pickled and eaten in Madras, and the flowers are also used as a food by some of the hill tribes. (Adapted from *Watt, Dictionary of Economic Products of India, vol. 6, p. 115.*)

45154. PHAEOMERIA MAGNIFICA (Roscoe) Schum. Zinziberaceæ.
(*P. imperialis* Lindl.)

A perennial herb of large dimensions, reaching a height of 20 feet when planted in a rich soil. The leaves are 1 to 2 feet long, lanceolate or elliptic, the upper side green, the lower side reddish brown. Flowers numerous, with large, bright scarlet and green bracts crowded in a globose head. This species, originally from Mauritius, is sometimes grown as a hothouse ornamental. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, p. 1109.*)

Received as *Elettaria speciosa*, but now considered as belonging to the genus Phaeomeria.

45155. PSYCHOTRIA BACTERIOPHILA Valet. Rubiaceæ.

A shrub, 2 to 3 meters (7 to 10 feet) high, native of the Comoro Islands, Madagascar. The elliptic or ovate-oblong, fleshy, dark-green leaves are short petioled and usually thickly covered with little tubercles formed by bacteria. The greenish white flowers are in numerous dense thyrses up to 3 inches long, and the fruits are subglobular drupes about one-quarter of an inch in diameter. (Adapted from *Valeton, Icones Bogoriensis, vol. 3, plate 271.*)

45156. LITCHI CHINENSIS Sonner. Sapindaceæ. **Lychee.**
(*Nephelium litchi* Cambess.)

From Canton, China. Seeds presented by Mr. Ung Wah. Received August 23, 1917.

"*Sunhing* lychee."

45157. SAPINDUS OAHUENSIS Hillebr. Sapindaceæ.
Hawaiian soap tree.

From Kealia lands, Waianae Mountains, Oahu, Hawaii. Presented by Mr. J. F. Rock, Honolulu. Received August 29, 1917.

A tree, 20 to 30 feet tall, remarkable in the genus for its simple leaves, which never show any indication of division. It is found in the valleys of the Kaala Range on the island of Oahu, where it is conspicuous from a distance because of its pale foliage. The flesh of the shiny fruits is full of saponin and forms a strong lather when beaten up in water. (Adapted from *Hillebrand, Flora of the Hawaiian Islands, p. 85.*)

45158 and 45159.

From Calcutta, India. Presented by Mr. C. C. Calder, Royal Botanic Garden. Received August 31, 1917.

45158. BLUMEA MYRIOCEPHALA DC. Asteraceæ.

"(From Kalighora, at 1,000 feet elevation, March 5, 1917.)"

A shrubby composite, with stems as thick as the forefinger and very stout branches; native of the Sikkim Himalayas east to Burma. Flower heads very numerous, one-fourth to one-third of an inch long, clustered in pyramidal panicles. (Adapted from *Hooker, Flora of British India, vol. 3, p. 268.*)

45158 and 45159—Continued.

45159. PARAMIGNYA MONOPHYLLA Wight. Rutaceæ.

A stout, climbing, evergreen shrub, native of the Sikkim Himalayas and the mountains of Khasi at elevations of 2,000 to 5,000 feet. The wood is white, hard, and close grained. The root has a bitter saline taste, contains large crystals of oxalate of lime, and is used by the country people of Goa as an alterative tonic. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 6, p. 110.*)

45160. BELOU MARMELOS (L.) Lyons. Rutaceæ. **Bel.**
(*Aegle marmelos* Correa.)

From Zafarwal, Punjab, India. Presented by Rev. H. S. Nesbit, American United Presbyterian Mission. Received September 7, 1917.

"Large specimens of bel fruit, about the largest I have ever seen, their average size being three times that commonly attained by this fruit." (*Nesbit.*)

For further description, see S. P. I. No. 45082.

45161. CLAUCENA LANSIUM (Lour.) Skeels. Rutaceæ. **Wampi.**
(*C. wampi* Oliver.)

From Canton, China. Seeds presented by Mr. Ung Wah. Received August 23, 1917.

A low, spineless tree, native of South China, where it is commonly grown for its fruits. Experiments are now being carried on with the *wampi* as a stock for citrus fruits.

45162 to 45166.

From Venezuela. Presented by Mr. H. M. Curran. Received August 23, 1917.

45162 and **45163.** CITRULLUS VULGARIS Schrad. Cucurbitaceæ. **Watermelon.**

"From the Guajira Indian plantation, Isla de San Carlos, May 9, 1917."

45164. BAUHINIA sp. Cæsalpiniaceæ.

"From Quanta, June, 1917. A small leguminous tree with velvety leaves." (*Curran.*)

45165. PROSOPIS CHILENSIS (Molina) Stuntz. Mimosaceæ. **Algaroba.**
(*P. juliflora* DC.)

"A leguminous tree, with small flowers in little heads or spikes. The pod is more or less thickened, and the leaves are composed of a large number of leaflets. This tree is a native of Mexico and the West Indies." (W. *Harris*, under *S. P. I. No. 42643.*)

45166. TABEBUIA PENTAPHYLLA (L.) Hemsl. Bignoniaceæ.

"From Puerto Cabello, June, 1917. *Apamato.* A timber tree with a profusion of ornamental pink flowers." (*Curran.*)

45167 to 45169.

From Paraguay. Presented by Dr. Moises S. Bertoni, Puerto Bertoni. Received September 6, 1917. Quoted notes by Dr. Bertoni.

45167. EUGENIA sp. Myrtaceæ.

"No. 7639. June, 1917. A shrub, 1 to 1½ meters high, from the meadows or savannahs of northeastern Paraguay at elevations of 170

45167 to 45169—Continued.

to 230 meters. The fruits are small, of an orange-yellow color, and the leaves are used in making a native medicine."

45168. PASSIFLORA sp. Passifloraceæ. **Granadilla.**

"An ornamental vine from the fields and prairies of northeastern Paraguay at altitudes of 170 to 260 meters. The annual growth, which is 1 to 2 meters, is ashy white in color. May, 1917."

45169. PSIDIUM sp. Myrtaceæ. **Guava.**

"*Araçá mbayá.* A shrub, 2 to 3 meters high, which grows among rocks and stones at altitudes of 170 to 230 meters. The fruit is sweet, nonacid, yellow when ripe, ovate, and 2 centimeters or more in length."

45170 to 45175.

From Soochow, China. Presented by Mr. N. Gist Gee, Soochow University. Received September 10, 1917.

45170. CITRULLUS VULGARIS Schrad. Cucurbitaceæ. **Watermelon.**

Chinese name *Ma ling kua* (*Mo. ling quo*), meaning horse-bell melon.

45171 to 45175. CUCUMIS MELO L. Cucurbitaceæ. **Muskmelon.**

45171. Chinese name *Huang mi lü* (*Waung mih loo*), meaning yellow honey melon.

45172. Chinese name *P'in kuo kua* (*Bing quo quo*), meaning apple melon.

45173. Chinese name *Zeh lung quo*, meaning lined melon.

45174. Chinese name *Su hsiang kua* (*Soo shang quo*), meaning soochow sweet-smelling melon.

45175. Chinese name *Ch'ing p'i lü jou kua* (*Tsing bi loh nyoh quo*), meaning blue-skin green-flesh melon.

45176. PRUNUS MUME Sieb. and Zucc. Amygdalaceæ. Japanese apricot.

Grown at the Plant Introduction Field Station, Chico, Calif., from scions presented by Mr. David Fairchild, from his place, "In the Woods," Chevy Chase, Md. The collection was imported in 1905–6 through the Yokohama Nursery Co., of Japan. Numbered September 26, 1917.

"Variety *Ginfukurin.* A white-flowered variety of the so-called 'Japanese flowering plum tree.' These are among the most picturesque of all flowering trees and compose a large part of the illustrations on Japanese screens. Because of their extreme earliness and the fragrance of their blooms they deserve a place in our gardens. The fruits are sour, but have a delicious wild flavor about them. The flowers of many varieties are often caught by the frost, but the *Ginfukurin* is rather slow in coming into bloom and so is more likely to escape." (*Fairchild.*)

45177. TETRAZYGIA BICOLOR (Mill.) Cogn. Melastomaceæ.

(*Miconia bicolor* Triana.)

From Homestead, Fla. Seeds presented by Mr. Charles A. Mosier. Received September 13, 1917.

A low ornamental shrub, 5 to 10 feet high, remarkable for the white powdery down of the branchlets and the inflorescence. Leaves 3 to 5 inches long, entire; flowers white, in five to seven flowered cymes. Native to the West Indies. (Adapted from *Grisebach, Flora of the British West Indian Islands, p. 254,* as *Tetrazygia angustifolia argyrophylla.*)

45178. PRUNUS SERRULATA SACHALINENSIS (Schmidt) Makino. (*P. sargentii* Rehder.) [Amygdalaceæ. **Sargents' cherry.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received August 8, 1917.

"*Yamazakura* (mountain cherry)." A deciduous tree, 40 to 80 feet in height, with a trunk sometimes 3 feet in diameter and sharply serrate oval leaves, which are often reddish when young. The deep-pink flowers, from 1¼ to 1½ inches wide, are produced in short-stalked umbels of two to six flowers. The fruit is a small black cherry, one-third of an inch in diameter. This tree, a native of Japan, is probably the finest timber tree among the true cherries and is also remarkable for its beautiful flowers, which appear in April. The seeds germinate freely after lying dormant for a year. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 250.*)

45179 and 45180.

From Dominica, British West Indies. Seeds presented by Mr. Joseph Jones, curator, Botanic Gardens. Received September 20, 1917.

45179. DURIO ZIBETHINUS Murray. Bombacaceæ. **Durian.**

"I believe Dominica is the only place in the western Tropics in which the durian tree has fruited. It first bore fruit in this island as far back as 1892." (*Jones.*)

"The durian grows on a large and lofty forest tree, somewhat resembling an elm in its general character, but with a more smooth and scaly bark. The fruit is round or slightly oval, about the size of a large coconut, of a green color, and covered all over with short, stout spines, the bases of which touch each other and are consequently somewhat hexagonal, while the points are very strong and sharp. It is so completely armed that if the stalk is broken off it is a difficult matter to lift one from the ground. The outer rind is so thick and tough that from whatever height it may fall it is never broken. From the base to the apex five very faint lines may be traced, over which the spines arch a little; these are the sutures of the carpels and show where the fruit may be divided with a heavy knife and a strong hand. The five cells are satiny white within and are each filled with an oval mass of cream-colored pulp, embedded in which are two or three seeds about the size of chestnuts. This pulp is the eatable part, and its consistence and flavor are indescribable. A rich butterlike custard highly flavored with almonds gives the best general idea of it, but intermingled with it come wafts of flavor that call to mind cream cheese, onion sauce, brown sherry, and other incongruities. Then, there is a rich glutinous smoothness in the pulp which nothing else possesses, but which adds to its delicacy. It is neither acid, nor sweet, nor juicy, yet one feels the want of none of these qualities, for it is perfect as it is. In fact, to eat durians is a new sensation, worth a voyage to the East to experience.

"When the fruit is ripe it falls off the tree, and the only way to eat durians in perfection is to get them as they fall; and the smell is then less overpowering. When ripe, it makes a very good vegetable if cooked, and it is also eaten by the Dyaks raw. In a good season large quantities are preserved salted in jars and bamboos and kept the year round, when it acquires a most disgusting odor to Europeans, but the Dyaks appreciate it highly as a relish with their rice. There are in the forest two varieties of wild durians with much smaller fruits, one of them orange

45179 and 45180—Continued.

colored inside; and these are probably the origin of the large and fine durians, which are never found wild. It would not, perhaps, be correct to say that the durian is the best of all fruits, because it can not supply the place of the subacid, juicy kinds, such as the orange, grape, mango, and mangosteen, whose refreshing and cooling qualities are so wholesome and grateful; but as producing a food of the most exquisite flavor it is unsurpassed. If I had to fix on two only, as representing the perfection of the two classes, I should certainly choose the durian and the orange as the king and queen of fruits." (*A. R. Wallace, The Malay Archipelago, p. 57.*)

45180. GARCINIA MANGOSTANA L. Clusiaceæ. **Mangosteen.**

A moderate-sized conical tree, with large leathery leaves, indigenous to Malaya. Its globular purplish brown fruit, about the size of an apple, is famed as one of the most delicious fruits of the Tropics. The delicate white juicy pulp surrounding and adhering to the seed is the part eaten. In striking contrast to it is the dense, thick, reddish rind, containing tannic acid and a dye. The tree is of very slow growth and does not usually come into bearing until about 9 or 10 years old. The essential conditions for it are a hot, moist climate and deep, rich, well-drained soil. Propagation is usually by seed, but may also be effected by "gootee" or layering. (Adapted from *Macmillan, Handbook of Tropical Gardening and Planting, p. 164.*)

45181. ANNONA CHERIMOLA × SQUAMOSA. Annonaceæ. Anona.

Grown at the Plant Introduction Field Station, Miami, Fla., from garden No. 1803, tree C. Numbered September 25, 1917.

A hybrid between the cherimoya and the sugar-apple, produced by Mr. Edward Simmonds, of the Miami Field Station. It combines the unusual sweetness of the sugar-apple with the firmness and better shipping quality of the cherimoya. The trees show unusual vigor, having withstood the freeze of February, 1917, without being much damaged.

For an illustration of this anona, see Plate IV.

45182 to 45189.

From China. Seeds collected by Mr. Frank N. Meyer, Agricultural Explorer of the Bureau of Plant Industry. Received September 18, 1917. Quoted notes by Mr. Meyer.

45182 and 45183. AMARANTHUS GANGETICUS L. Amaranthaceæ. **Amaranth.**

45182. "(No. 2385a. Hankow, China. March 9, 1917.) A green-leaved amaranth, much cultivated in central China as a garden vegetable and eaten, when young, like spinach. The plant stands any amount of moist heat and can be sown at intervals throughout the summer. As the seedlings suffer a good deal at times from damping-off, the Chinese generally have the beds raised slightly above the surrounding land and then cover the surface with a sifted mixture of soot, ashes, and lime, which acts as a fertilizer as well as a fungicide. Chinese name *Pai han ts'ai*, meaning white amaranth vegetable. This *Han ts'ai* probably can be made a popular hot-weather vegetable throughout the southern sections of the United States."

45182 to 45189—Continued.

45183. "(No. 2386a. Ichang, Hupeh, China, March 24, 1917.) Mixed strains of *Han ts'ai*, a leaf vegetable for hot weather. It thrives best in well-drained, rich, light soil, but it is not very particular after once having started well. Mix seeds with sifted dry soil or sand and sow broadcast over a well-prepared bed; or sow between the poles on which Yard Long beans, etc., are raised."

45184. IPOMOEA REPTANS (L.) Poir. Convolvulaceæ.
(*I. aquatica* Forsk.)

"(No. 2387a. Wuchang, Hupeh, China, June 15, 1917.) The *Kuan ts'ai*, an annual herb, is cultivated by the Chinese as a hot-weather leaf vegetable and is prepared and eaten much like spinach. It is usually sown in rows at intervals during the spring and summer, to insure a continuous supply of greens. It thrives best in a rather wet, heavy soil and withstands being submerged (even for several days) without injury. The foliage resembles that of the sweet potato a good deal, but the roots are not fleshy. The young shoots are cut at intervals until the plants become exhausted. The white or pale rose-colored flowers appear in July and August, and shortly after flowering the plants set a good supply of seeds which are harvested for the next season's crop. Chinese name *Kuan ts'ai* (*Wŏng tsai*), meaning jar vegetable or bamboo-leaf vegetable."

45185 to 45189. BRASSICA PEKINENSIS (Lour.) Gagn. Brassicaceæ.

Pai ts'ai.

45185. "(No. 2388a. Taianfu, Shantung, China, March 1, 1917.) A heavy winter *pai ts'ai* of fine quality, making firm much-elongated heads. Sown out in early August and transplanted in rich well-worked soil; it must not suffer from lack of water. Can be kept throughout the whole winter when stored in a cool dugout cellar; can also be held in good condition for several months when hung from the rafters of a cool storeroom or kept in an airy box."

45186. "(No. 2389a. Hankow, China, June 9, 1917.) A spring and autumn variety of Chinese cabbage of open growth; eaten boiled, like kale or mustard sprouts. Sown from early April to the end of May for spring consumption; for autumn use it is planted from the end of July to the end of August. Chinese name *Ya hao pai ts'ai*, meaning fresh-leaf cabbage."

45187. "(No. 2390a. Hankow, China, June 9, 1917.) An open-headed, very dark green variety of Chinese cabbage, sown out in September; persists throughout the winter in mild climates. Chinese name *Hei pai ts'ai*, meaning black *pai ts'ai*. Probably this should be cultivated as greens for winter in the South Atlantic and Gulf States."

45188. "(No. 2391a. Hankow, China, June 9, 1917.) An open-headed variety of Chinese cabbage, sown out in August and used as a fall and winter vegetable. Chinese name *Chiang kan pai ts'ai*, meaning oar-shaped *pai ts'ai*. This should probably be cultivated as greens for winter use in the South Atlantic and Gulf States."

45189. "(No. 2392a. Hankow, China, June 9, 1917.) A winter variety of *pai ts'ai* with solid heads; sown out in September. Chinese name *Nan ching pai ts'ai*. This should probably be cultivated as greens for winter use in the South Atlantic and Gulf States."

45190 to 45193.

Grown at the Plant Introduction Field Station, Chico, Calif. Numbered for convenience in distribution.

45190. ANISACANTHUS THURBERI (Torr.) A. Gray. Acanthaceæ.

Ornamental acanthaceous shrub, 2 to 4 feet high, with opposite, nearly lanceolate, thickish leaves and showy purplish red funnelform flowers, solitary or in leafy clusters in the axils. Native of Mexico, New Mexico, and Arizona. (Adapted from *Gray, Synoptical Flora of North America, vol. 2, part 1, 2d ed., p. 328.*)

45191. ARGEMONE PLATYCERAS Link and Otto. Papaveraceæ.

A rose-colored form of a showy flowered annual occasionally met with in gardens and found growing wild in the Southwestern States. A very spiny, glaucous-leaved, robust plant with large poppylike flowers.

45192. QUAMOCLIDION MULTIFLORUM Torr. Nyctaginaceæ.

A low diffusely branched perennial herb with smooth, ovate leaves and large purplish red flowers in clusters in a broad calyxlike involucre. The showy flowers have a thick, rather long tube spreading into a wide limb. Native from Colorado to western Texas and Arizona. (Adapted from *Wooton and Standley, Flora of New Mexico, p. 222.*)

45193. ZAUSCHNERIA CALIFORNICA Presl. Onagraceæ.

California fuchsia.

A half-hardy perennial with showy scarlet flowers resembling those of fuchsia but erect, not pendent. It is rather variable in form of leaves and in hardiness. Native of the southwestern United States.

45194. CUDRANIA TRICUSPIDATA (Carr.) Bureau. Moraceæ.

(*C. triloba* Hance.)

Grown at the Yarrow Plant Introduction Field Station, Rockville, Md., from seed received from the P. J. Berckmans Co., Augusta, Ga., November, 1916. Numbered for convenience in distribution.

A small deciduous tree, with slender, thorny branches and fleshy subglobose edible fruits. The P. J. Berckmans Co., in sending in the seed, reported that although the one tree left in their nursery at that time had fruited very well, it was rather difficult to get many fruits at one time, because the laborers seem very fond of them.

45195. MADHUCA INDICA Gmel. Sapotaceæ. **Mahwa.**

(*Bassia latifolia* Roxb.)

From Seharunpur, India. Seeds presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens. Received September 24, 1917.

A large deciduous tree from northern India, cultivated widely in India for its cream-colored, fleshy, sweet corollas, which are dried for eating and for the manufacture of spirits. Introduced for trial in Florida.

45196. CROTON TIGLIUM L. Euphorbiaceæ. **Croton-oil plant.**

From St. Louis, Mo. Presented by Mr. G. H. Pring, Missouri Botanical Garden. Received September 24, 1917.

"A small ornamental tree with ovate leaves varying in color from metallic green to bronze and orange. The powerful purgative, croton oil, is obtained from the seeds by crushing." (*J. B. S. Norton.*)

45197. BRUNSFELSIA HOPEANA (Hook.) Benth. Solanaceæ.

Manacá.

From Para, Brazil. Seeds presented by Senhor J. Simão da Costa. Received September 24, 1917.

A small spreading shrub, native to the States of Amazonas and Sao Paulo, Brazil. The leaves are alternate, narrow, and dark green; the spreading purple flowers are very fragrant. In Brazil the plant is used medicinally, the root serving as an antiseptic, a purgative, and a diuretic. By means of ether, a perfume is extracted from the flowers. (Adapted from *Curtis's Botanical Magazine, vol. 65, pl. 2829,* and from *Correa, Flora do Brazil, p. 102.*)

45198 to 45203.

From the Kachin Hills tract, Bhamo District, Upper Burma. Presented by E. Thompstone, Esq., Deputy Director of Agriculture, Northern Circle, Burma. Received September 24, 1917. Quoted notes by Mr. Thompstone.

45198. COIX LACRYMA-JOBI MA-YUEN (Rom.) Stapf. Poaceæ. **Job's-tears.**

"Kachin name, *Mung-Kawng.* Job's-tears is seldom cultivated; it occurs on the banks of streams and watercourses, and sporadically in the clearings of the hillmen. The seed, when ripe, is collected and utilized."

45199 to 45203. ZEA MAYS L. Poaceæ. **Corn.**

"The maize is scattered broadcast in the rainy weather, usually July, after the land has been plowed and harrowed. The crop is weeded once or twice, beyond which no care is given it."

45199. "Kachin name, *W'Lwe;* Burmese name, *Kauk-saw.*"

45200. "Kachin name, *W'Hpraw;* Burmese name, *Pyaung-pyu.*"

45201. "Kachin name, *Hkainu.*"

45202. "Kachin name, *U-Pan;* Burmese name, *Ah-lat.*"

45203. "Kachin name, *W'Hti;* Burmese name, *Kauk-kyi.*"

45204 to 45214.

From Leverville, Belgian Kongo. Presented by Père Hyacinthe Vanderyst, Jardin Agrostologique, through Mr. C. V. Piper, of the Bureau of Plant Industry. Received September 24, 1917. Quoted notes by Père Vanderyst.

45204 and 45205. ANDROPOGON FINITIMUS Hochst. Poaceæ. **Grass.**

45204. "(*Andropogon lugugaensis* VDR. variety *levervillensis* VDR. Jardin Agrostologique, Leverville, July, 1917.) A good forage grass."

45205. "(Jardin Agrostologique, Leverville, July, 1917.) A good forage grass."

Received as *Andropogon familiaris* variety *levervillensis* VDR.

45206. ANTHEPHORA CRISTATA (Doell) Hack. Poaceæ. **Grass.**

"(Jardin Agrostologique, Leverville.) A good pasture, when young, for small animals."

45207. CENCHRUS BARBATUS Schumach. Poaceæ. **Grass.**

"(Jardin Agrostologique, Leverville, July, 1917.) Unsuitable for pasture on account of its thorny fruits."

45204 to 45214—Continued.

45208. CHLORIS BREVISETA Benth. Poaceæ. **Grass.**

"(Jardin Agrostologique, Leverville, July, 1917.)" A West African grass from the Cape Coast region, resembling *Chloris compressa* in the structure of its flowers. The new growth is said, in Belgian Kongo, to form an excellent pasture for small animals.

Rhodes grass, *C. gayana*, also from western tropical Africa, has succeeded so well in the Southern States that this grass also should receive a thorough trial.

45209. HOLCUS SORGHUM VERTICILLIFLORUS (Steud.) Hitchc. Poaceæ. **Tabucki grass.**

"(Variety *astoloniferus* VDR. Jardin Agrostologique, Leverville, July 1917.)"

45210. PANICUM DIAGONALE Nees. Poaceæ. **Grass.**

"(Jardin Agrostologique, Leverville.) Useful as pasture in the young state."

A perennial tufted grass reaching a height of more than 3 feet. Native to Central and East Africa.

45211. PENNISETUM BENTHAMI Steud. Poaceæ. **Grass.**

"(Jardin Agrostologique, Leverville, July, 1917.) A good forage species for cattle."

45212. PENNISETUM SETOSUM (Swartz) L. Rich. Poaceæ. **Grass.**

"(Jardin Agrostologique, Leverville, July, 1917.) Pasture in the young state for small animals."

A tall, leafy, branching perennial, erect or ascending from a geniculate base, the long, flat blades pubescent or scabrous, the purplish spikes 10 to 15 centimeters (4 to 6 inches) long. On grassy slopes and in open woods, Mexico and West Indies to South America, and also in tropical Asia and Africa. (Adapted from *Hitchcock and Chase, Grasses of the West Indies, p. 354.*)

45213. PEROTIS INDICA (L.) Kuntze. Poaceæ. **Grass.**
(*P. latifolia* Ait.)

"(Jardin Agrostologique, Leverville.)" An annual or subperennial grass, with stout and branching leafy culms and usually short, broad, rigid, ciliate blades, common throughout tropical Africa and Asia. It grows to a height of 10 inches, and is said in the Belgian Kongo to be a good pasture in the young state for small animals.

45214. SPOROBOLUS MOLLERI Hack. Poaceæ. **Grass.**

"(Cultivated in the Jardin Agrostologique, Leverville, July 8, 1917.) Value as yet undetermined."

45215. PRUNUS CONRADINAE Koehne. Amygdalaceæ. **Cherry.**

Grown at the Plant Introduction Field Station, Rockville, Md., from scions presented by Mr. David Fairchild from his place, "In the Woods," Chevy Chase, Md. Introduced originally by the Arnold Aboretum, Jamaica Plain, Mass. Numbered September, 1917.

A handsome tree from western China, up to 40 feet in height, with the trunk 8 to 20 inches in diameter, thin, pale-green leaves, and white to deep blush-colored flowers, an inch or less across, which appear early in the spring. It is very similar to Sargent's cherry (*Prunus serrulata sachalinensis*).

45216. PRUNUS SUBHIRTELLA PENDULA (Sieb.) Tanaka. Amygdalaceæ. **Rose-bud cherry.**

Grown at the Plant Introduction Field Station, Rockville, Md., from scions presented by Mr. David Fairchild from his place, "In the Woods," Chevy Chase, Md. Originally introduced through the Yokohama Nursery Co., of Japan. Numbered September, 1917.

A small tree with drooping branches, mostly narrowly oval, light-green leaves, and long-stalked clusters of rose-pink flowers three-quarters of an inch across. One of the handsomest of early-flowering trees, producing its dainty flowers in profusion. Hardy in central New York. Deserves to be planted in all parts and as dooryard trees when there is room enough. Grows to very large size, but flowers when 3 years old. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 5, p. 2841.*)

45217 and 45218. FRAGARIA spp. Rosaceæ. **Strawberry.**

From Bedford, England. Plants purchased from Laxton Bros. Received September 28, 1917.

45217. *Keen's Seedling.* An old and well-known English sort of the finest quality, which does not generally succeed in America. Flowers perfect; fruit large, roundish, often cockscomb shaped, dark purplish scarlet, with polished surface and rich, highly flavored, firm flesh. (Adapted from *Downing, Fruits and Fruit Trees of America, p. 992.*)

45218. *Old Pine,* or *Carolina.* An American variety, with perfect flowers and medium-sized, conical, bright-scarlet fruit, with a neck and solid, juicy, rich flesh. (Adapted from *Downing, Fruits and Fruit Trees of America, p. 998.*)

45219. CALYCOPHYSUM BREVIPES Pittier. Cucurbitaceæ.

From Venezuela. Seeds presented by Mr. Henri Pittier, director, Estacion Experimental y Catastro de Baldios, Caracas. Received September 28, 1917.

"(Cerros de Avila, above Caracas, August, 1917.) A Calycophysum, which I collected at about 1,700 meters altitude on the slopes of the Avila Mountains above Caracas. It is a high climber, growing in the outskirts of the forest. The fruit is large and quite ornamental, the pericarp being of an intense orange-yellow color. It looks very attractive to a thirsty person, and when I picked the first one I opened and tasted it without losing time. The flavor was quite sweet, and I lost no time in swallowing the 'swallowable' part of a whole fruit. Five minutes later my mouth was burning just as if I had swallowed a very hot pepper and my insides soon began to make themselves felt. For several hours I had nausea and some fever, with a strong headache. Then it passed away. I suspect the peppery agent to be contained in the dissepiments of the seeds, and if it could be made away with, the fruit would certainly be very palatable. It goes mostly by the name of *parcha de culebra, parcha* being a name common to the edible Passiflora fruits. But I am also assured that it is the *coco de mono,* to which depilatory properties are ascribed. The facial hair ornaments (?) which are the glory of men in other countries are here the common privilege of an unusual number of the members of the fair sex, and as they do not relish it, it is said that they make away with it by means of the endocarp of the *coco de mono.* I would not be surprised if this were the fruit in question, but the same name is given

also to the fruits of the two or three native species of Couroupita, and probably to those of other members of the Lecythideæ. So the question of the depilatory properties is not yet settled." (*Pittier.*)

45220. (Undetermined.) Apocynaceæ. **Lorocco vine.**

From Tegucigalpa, Honduras. Seeds presented by Mr. I. H. Cammack, "La Misión." Received September 28, 1917.

"This is a deciduous perennial vine which grows best on moist mountain sides where the climate is always temperate. Its flowers and flower buds are fine for flavoring milk and vegetable soups, especially potato soup, giving it the flavor of oysters. The vine should have a space of 5 to 10 feet for climbing and spreading, and it will require greenhouse protection in cold weather." (*Cammack.*)

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