

Issued July 20, 1921.

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, 1916.

(No. 48; Nos. 43013 to 43390.)



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, 1916 (NO. 48; NOS. 43013 TO 43390).

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## INTRODUCTORY STATEMENT.

This inventory represents a period of great unrest and lists but few introductions by agricultural explorers who were in foreign countries. It covers a period when shipping facilities were more unsettled than they had been at any time from the outbreak of the war up to the time of America's entrance into it. In consequence it is one of the smallest inventories that have been issued for years.

Notwithstanding these handicaps, some important introductions are described in it; and these it may be well to emphasize.

The growing realization among manufacturers of the importance of the discovery of the hydrogenation of vegetable oils is rapidly putting the palm oils, nut oils, and all other oils in quite a new category. As one chemist has expressed it: "Since these discoveries, which have made it possible to transmute, so to speak, vegetable oils into all sorts of substances useful to man, the oil industries are coming to be understood as of greater importance to the human race than the great steel and iron industries."

It is therefore from this new point of view of the importance of vegetable oils that the successful cultivation of the Brazil nut (No. 43114) in Ceylon and the Straits Settlements is worth recording and action upon the problem of its forest planting in Porto Rico urged. The Java almond, *Canarium indicum* (No. 43024), not only one of the stateliest avenue trees in Java, but also a tree yielding an abundance of large-kerneled nuts, the oil from which has been successfully used by the Dutch in emulsions as an infant food, is worthy of study. The soft lumbang of the Philippines, *Aleurites trisperma* (No. 43389), which yields a quicker drying oil than the true lumbang, *A. moluccana*, may prove adapted to culture in Porto Rico or Cuba; and its introduction brings up the whole question of the hybridization of the various species of *Aleurites*, the members of

which genus yield such closely allied but specific products. There are no records of any work of selection or hybridization having yet been done with these rapid-growing trees. The remarkable results which have been obtained by physicians in the treatment of leprosy with chaulmoogra oil and the isolation of the effective principle of this oil by Dr. Power have made it seem important to introduce and acclimatize in our tropical possessions the invaluable tree, *Hydnocarpus kurzii* (No. 43227). Whether the amounts of oil yielded by the fevillea (No. 43213), a forest climber of Jamaica, will warrant its cultivation is a question.

Useful hardy palms are so few in number that the testing out of two little-known ones from Argentina, by Dr. H. Nehrling, at his remarkable place at Gotha, Fla., is a matter of particular interest. These palms would seem to be adapted to a wide range of territory throughout northern Florida, since they were quite uninjured by the freeze of February, 1917, when the temperature went down to 20° F. One of them, *Butia bonneti* (No. 43116), bears edible fruits the size of a plum, having an apricot flavor and being intensely fragrant and very juicy. They are orange-yellow with a red cheek, and a single bunch borne by one of Dr. Nehrling's trees comprised 980 fruits. The other species, *Butia capitata pulposa* (No. 43238), is quite as hardy, and bore fruit clusters of a thousand edible fruits weighing 50 pounds. Both are suited to the high pine lands of Florida, where economic plants are particularly needed.

From Italian Somaliland the yeheb nut, *Cordeauxia edulis* (No. 43260), has been again introduced. The fact that it contains about 12 per cent of albuminoids, 11 per cent of oil, 25 per cent of sugars, and 37 per cent of other carbohydrates and that it is said to be preferred to rice and dates by the inhabitants should entitle it to especial consideration in the southwestern arid regions. The degree of cold that it will stand is a factor to be determined.

Of forage plants recently introduced, few have come to us with so high a recommendation as *Pennisetum purpureum* (No. 43241), the gift of Mr. B. Harrison, of Burringbar, New South Wales. In dry seasons, plants under observation in Australia made a growth of 11 feet. The plant is succulent, greatly relished by stock, richer than green maize, and remains green even during six or eight months of drought when other plants are dried up. It is a perennial, yields 27 tons per acre, and is, altogether, considered to be an ideal forage crop for arid regions.

The Spanish garbanzo (*Cicer arietinum*), although grown now to a limited extent in California, is not given the consideration that it deserves when it is recollected that it is the staple food of the poorer classes in Spain and is grown in large quantities in Mexico and shipped

to Spain by thousands of tons. A collection from Seville should awaken new interest in this dry-region legume (Nos. 43273 to 43280).

It would seem reasonable that the *Buchanania* (No. 43038), from the dry forests of Burma and India, which is leafless for a period and which ascends to an altitude of 3,000 feet, might be adapted to Florida and that its pellucid gum and varnish, as well as its oily kernels, which are said to resemble in flavor something between the almond and the pistache and to be much prized as a sweetmeat, may become articles of importance, much as the products of the pistache, to which it is related, are beginning to be in California.

A large collection of fruit varieties, mostly of New Zealand origin and comprising some selections and hybrids made by W. E. Lippiatt, J. F. Smith, and H. E. Sharp, is already making a good showing in the trial nurseries at Chico, Calif.; and American horticulturists will be interested to learn whether any of them prove especially adapted to American conditions (Nos. 43124 to 43186).

Twenty years ago Prof. Hansen obtained for the Bureau of Plant Industry some seed of a Russian sweet corn called the Malakoff. This variety appears in the Canadian gardens under the name Early Malcolm and has even been crossed with the Early Adams, producing a new variety called Early Ottawa. These seem to be the only varieties which are early enough to mature properly in the region around Ottawa, Canada, and therefore deserve to be better known in northern regions with similar short seasons (Nos. 43117 and 43118).

The breeders in the northern tier of States who are engaged in the production of hardier raspberries will take a particular interest in the selections of *Rubus strigosus* which were made by Mr. M. J. Dorsey, of the University of Minnesota. Mr. Dorsey was sent as an explorer to the Riding Mountains and Lake Winnipeg, where he found wild forms of especial promise for breeding and selection purposes (Nos. 43195 to 43201).

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

DAVID FAIRCHILD,  
*Agricultural Explorer in Charge.*

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,  
*Washington, D. C., September 10, 1919.*





# INVENTORY.<sup>1</sup>

**43013. CACARA PALMATILOBA (Moc. and Sesse) Kuntze. Fabaceæ. Yam bean.**  
(*Pachyrhizus palmatilobus* Benth. and Hook.)

From Zacuapam, Huatusco, Vera Cruz, Mexico. Presented by Dr. C. A. Purpus. Received July 6, 1919.

A climbing herb with a twining stem, bearing large tuberous roots. The palmate leaves are somewhat hairy, and the purplish flowers occur in long racemes. The large turgid pod is deeply depressed between the seeds. This plant is found in tropical America and is cultivated for its edible tuberous roots, although it is not so commonly cultivated as the other species of this genus. (Adapted from *Bailey, Standard Cyclopedia of Horticulture*, pp. 2425 and 2426.)

**43014. AMYGDALUS PERSICA L. Amygdalaceæ. Peach.**  
(*Prunus persica* Stokes.)

From Cuzco, Peru. Presented by Mr. A. A. Giesecke, rector of the University of Cuzco. Received July 6, 1916.

"I trust you will find these seeds interesting. They were collected after the season was nearly over and are not necessarily the best varieties." (*Giesecke.*)

**43015. PÆONIA BROWNII × ALBIFLORA. Ranunculaceæ. Hybrid peony.**

From Los Angeles, Calif. Presented by Mr. P. D. Barnhart. Received July 11, 1916.

"Seeds of our native *Pæonia* which are the products of flowers that I pollinated with pollen of the Chinese type, such as you grow in the East. I got the material from the Henry A. Dreer people last year. They collected it from white varieties in their field. I hope to get a cross that will bear large flowers and plants that are adapted to this climate. Our hills are covered with them, but the flowers are small and inconspicuous, though they begin to bloom, and profusely too, in early February and continue into March. This year the first flowers appeared in January, and those that I worked failed to set seed. I used heavy paper sacks to protect the subjects from the rain and insects." (*Barnhart.*)

It remains to be seen whether these seeds will produce hybrid plants.

<sup>1</sup> Each introduction consists 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 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 for them in American literature becomes necessary, the designations appearing in this inventory will be subject to change with a view to bringing the forms of the names into harmony with recognized American codes of nomenclature.

**43016 to 43019. GOSYPIUM HIRSUTUM L. Malvaceæ. Cotton.**

From Camaguey, Cuba. Presented by Mr. Robert L. Luáces, director, Granja Escuela Gaspar Betancourt Cisneros. Received July 10, 1916.

"Bolls from plants grown by Mr. Minor at Bartle, Cuba." (*Luáces.*)

43016. No. 1.

43018. No. 3.

43017. No. 2.

43019. No. 4.

**43020. AMYGDALUS PERSICA L. Amygdalaceæ. Peach.**

(*Prunus persica* Stokes.)

From Sorrento, Fla. Scions presented by Mr. Victor Lent. Received July 10, 1916.

*Lent Golden.* "The original seedling tree of this peach grew on the Levi Risinger place here at Sorrento. The tree originated about 1902. I can say nothing of the parentage of the tree. It has been dead for several years now, and no trees were budded from it except the ones which I now have. I have been raising this variety now for almost eight years; other yellow peaches do very poorly here. This year they ripened earlier than usual. I picked the first ripe fruit May 29 and the last on July 4. Last year none were ripe until June 30, and the last were picked on July 24." (*Lent.*)

**43021 and 43022.**

From China. Collected by Mr. Frank N. Meyer, Agricultural Explorer for the Department of Agriculture. Numbered July 7, 1916. Quoted notes by Mr. Meyer.

**43021. CLERODENDRUM CYRTOPHYLLUM Turcz. Verbenaceæ.**

"(No. 2319a. Mokanshan, Chekiang, China, August 6, 1915.) A spreading shrub, from 2 to 5 feet high, sending up many stalks; found on débris on mountain slopes at altitudes of 1,200 to 2,000 feet. Leaves glabrous, opposite, light green, of somewhat fetid odor; flowers small, white, but with large bracts of rosy color; berries blue. Ornamental but somewhat weedy. Of use for large parks and estates in mild climates as a cover shrub for sandy and waste places."

**43022. IRIS sp. Iridaceæ.**

**Iris.**

"(No. 2320a. Mokanshan, Chekiang, China, August 6, 1915.) An iris, forming big clumps, found in a garden, but said to occur wild in mountain ravines. Flowers reputed to be purplish."

**43023. OSTERDAMIA MATRELLA (L.) Kuntze. Poaceæ. Grass.**

(*Zoysia pungens* Willd.)

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received July 10, 1916.

Var. *Korai*. A creeping grass, important for binding coast sands, which does well on alkali soils and also as a lawn grass. Said to be relished by stock.

**43024. CANARIUM INDICUM Stickm. Balsameaceæ. Java almond.**

(*Canarium commune* L.)

From Buitenzorg, Java. Presented by Dr. J. C. Koningsberger, director, Botanic Gardens. Received July 10, 1916.

"*Java almond*. A large, handsome Malayan tree, characterized by a remarkable buttressed trunk and laterally compressed aerial basal roots; the latter develop enormous erect flanges of uniform thickness, so that solid circular pieces may occasionally be cut from them to form ready-made cart wheels. The tree is much cultivated for shade or ornament in Java. It bears in great abundance large pendent clusters of dark-purple fruits which are the size of small plums; these are produced all the year round, but chiefly in June. The kernel of the fruit is edible, being similar in flavor to sweet almonds; it yields by expression an oil for burning in lamps and for cooking purposes. A desirable tree for planting in avenues, etc. It thrives in hot and moist districts up to an altitude of about 1,500 feet, and prefers deep well-drained soil. Propagated by seed, which may be sown in nursery beds and kept moist and shaded until germinated." (*Macmillan, Handbook of Tropical Gardening and Planting, p. 146.*)

For an illustration showing Java almond trees growing in Buitenzorg, see Plate I.

**43025. GOSSYPIUM HIRSUTUM L. Malvaceæ. Cotton.**

From Camaguey, Cuba. Presented by Mr. Robert L. Luíces, director, Granja Escuela Gaspar Betancourt Cisneros. Received July 5, 1916.

"Bolls from plants grown by Mr. Minor at Bartle, Cuba." (*Luíces.*)

**43026. ANANAS SATIVUS Schult. f. Bromeliaceæ. Pineapple.**

From Singapore, Straits Settlements. Presented by Mr. J. L. Anderson, director, Botanic Gardens. Received July 18, 1916.

Suckers of the following varieties were mixed when received and were given only one number: *Harvey's, Mauritius, Pernambuco, Ruby, Sarawak.*

**43027. BELOU MARMELÓS (L.) Lyons. Rutaceæ. Bel.**  
(*Aegle marmelos* Correa.)

From Poona, Bombay, India. Presented by Mr. P. S. Kanetkar, superintendent, Botanical Gardens, at the request of Mr. G. A. Gammie, imperial cotton specialist, Kirkee, India. Received July 5, 1916.

"A small spiny tree, originally a native of India, now commonly grown in the low country of Ceylon and other tropical countries for its fruits. The latter are globular, with a hard, green shell, and vary in size from that of a cricket ball to that of a melon; it incloses a mass of doughy aromatic pulp, intermingled with which is a limpid glutinous substance which some people relish for its flavor but more particularly for its medicinal value. This is a well-known specific for dysentery and is much used in native medicines. The principal season for the fruits is during the months of February to May. The tree is propagated by seed and thrives in ordinary good soil." (*Macmillan, Handbook of Tropical Gardening and Planting, p. 134.*)

See S. P. I. Nos. 38389 and 41133 for previous introductions.

**43028. BELOU MARMELÓS (L.) Lyons. Rutaceæ. Bel.**  
(*Aegle marmelos* Correa.)

From Rangoon, Burma, India. Presented by Rev. H. S. Hascall. Received July 5, 1916.

"Season for fruit, March and April. You will notice that some of the seeds are clean and others are not free from the mucilaginous matter which is so difficult to remove and which is so susceptible to dampness that it takes only a little fog to make them adhere to each other." (*Hascall.*)

**43029 to 43031. ULMUS spp. Ulmaceæ. Elm.**

From Kief, Russia. Purchased from Messrs. St. Przedpelski and T. Antoniewicz. Received July 3, 1916.

**43029.** Received as *Ulmus androsowi* Litv., for which a place of publication has not yet been found.

**43030.** Received as *Ulmus bobyriana* Litv., for which a place of publication has not yet been found.

**43031.** ULMUS DENSE Litv.

"An elm of remarkably dense growth, sprouting a little distance above the ground into a number of stems which form an umbrellalike head of foliage which is so dense that it seems always twilight, even at bright noon, in an avenue of these trees. This elm apparently loves a climate with long, hot summers and with winters not too cold. It withstands a fair amount of alkali in the soil and in the irrigation water. It is of especial value as a shade tree in the hot and dry interior valleys of California, in Arizona, Texas, and New Mexico." (*Frank N. Meyer.*)

For a previous introduction, see S. P. I. No. 32831.

**43032 and 43033. JUGLANS INSULARIS Griseb. Juglandaceæ. Cuban walnut.**

From Santiago de las Vegas, Cuba. Presented by Mr. Juan T. Roig, botanist, Agricultural Experiment Station. Received July 22, 1916.

"This interesting Cuban tree has recently been called to the attention of horticulturists by Van Hermann and Roig. It is found in the mountainous sections of the island, sometimes at considerable altitudes. I have seen it in the mountains near Trinidad, on the south coast, at about 2,000 feet, growing among numerous other trees along the banks of small streams. It seems, however, to be comparatively rare, and does not occur in great numbers. It is erect and slender in habit, growing to a height of 40 or more feet, with foliage somewhat finer than *Juglans nigra* of the United States. The nuts resemble those of *Juglans nigra* in size and appearance, though sometimes smaller. The kernels, however, are removed with difficulty, the septæ being very thick and woody. In its present wild state the Cuban walnut, as it is called, does not seem to be of great horticultural value, but with very little improvement by selection it seems that it might become an excellent nut for tropical regions. It has been suggested that it might serve as a stock for the Persian walnut, making possible the culture of this species in Cuba and other tropical regions where it is not successfully grown. For illustrations of the tree and fruit, see *Journal of Heredity*, December, 1915." (*Wilson Popenoe.*)

**43032.** "Cuban native walnut, collected at Trinidad Station, Santa Clara Province." (*Roig.*)

**43033.** "Cuban native walnut, collected at Taco Taco, Pinar del Rio Province." (*Roig.*)

**43034. LITCHI CHINENSIS Sonner. Sapindaceæ. Litchi.**  
(*Nephelium litchi* Cambess.)

From Swatow, China. Presented by Mr. G. C. Hanson, American consul. Received July 25, 1916.

"Grown in the neighborhood of Chaochowfu. This fruit is placed on the market at the beginning of the summer and can be obtained during only a very short period. The Swatow litchi has the reputation of not being as good as the Canton variety, which also matures early in the summer." (*Hanson.*)

**43035 and 43036. ARACHIS HYPOGAEA L. Fabaceæ. Peanut.**

From Buitenzorg, Java. Presented by Mr. L. Koch, Plant Breeding Station for Annual Crops. Received July 20, 1916.

43035. "Pure strain No. 21. Is almost unaffected by a severe malady known here under the name of bacterium disease. Cultivated at the Plant Breeding Station for Annual Crops." (*Koch.*)

43036. "The variety cultivated here by the natives." (*Koch.*)

**43037. RUBIA TINCTORUM L. Rubiaceæ. Madder.**

From Paris, France. Procured from Vilmorin-Andrieux & Co. Received July 25, 1916.

"The root of *Rubia tinctorum* furnishes dyer's madder. The plant is a native of the south of Europe and is extensively cultivated about Avignon and in the Alsace for the roots, which afford the fine scarlet dye so highly valued by dyers and calico printers. A great quantity is grown in the Levant, the north of Africa, and in Holland; but that from Africa and the East, particularly that from Cyprus, is the most esteemed. Several attempts have been made to cultivate it in this country [England], but without success. The roots are dug up in the third summer after sowing and, having been deprived of their cuticle, are dried by artificial heat and then reduced to a powder. Madder has a bitter, astringent taste and imparts these properties to water and alcohol." (*Hogg, Vegetable Kingdom, p. 415.*)

**43038. BUCHANANIA LATIFOLIA Roxb. Anacardiaceæ.**

From Burma, India. Presented by the superintendent, Royal Botanic Garden, Sibpur, near Calcutta, India. Received July 22, 1916.

"A medium-sized tree, leafless only for a short time, met with in the dry forests throughout India and Burma, ascending in the sub-Himalayan tract to 3,000 feet. A pellucid gum (*peal* or *pial*) which exudes from wounds in the stem is more than half soluble in water. It is said to resemble Bassora gum, to have adhesive properties like inferior gum arabic, and to be suitable for dressing textiles. The bark and the fruit furnish natural varnish. The kernels yield a sweet and wholesome oil (*chiroji*), but owing to their being much prized as a sweetmeat when cooked, the oil is seldom expressed. The kernels, which have a flavor something between that of the pistachio and the almond, are eaten by the natives. In the hills of central India the fruits with the kernels are pounded and dried and subsequently baked into a sort of bread. From the Panjab and Bombay the leaves are reported as used for fodder. The timber is not very hard nor durable and is of small value, though made into spoons, plates, toys, and bedsteads, and is even employed for doors and window frames, plow handles, etc." (*Watt, Commercial Products of India, p. 188.*)

**43039 to 43048.<sup>2</sup> PRUNUS BOKHARIENSIS Royle. Amygdalaceæ. Plum.**

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens. Received July 25, 1916.

<sup>2</sup> See footnote, p. 9.

## 43039 to 43048—Continued.

43039. <i>Late yellow.</i>	43044. <i>Large red.</i>
43040. <i>Alubokhara small.</i>	43045. <i>Alucha red.</i>
43041. <i>Alubokhara large.</i>	43046. <i>Large yellow.</i>
43042. <i>Alucha purple.</i>	43047. <i>Dwarf early yellow.</i>
43043. <i>Early large red.</i>	43048. <i>Ladakh.</i>

**43049. ERYTHRINA POEPPIGIANA (Walp.) O. F. Cook. Fabaceæ.**  
*(E. micropteryx Poepp.)* **Bucare.**

From Mayaguez, Porto Rico. Presented by Mr. D. W. May, agronomist, Agricultural Experiment Station. Received July 3, 1916.

A leguminous tree commonly used for cacao shade in the West Indies. It attains 60 feet in height, but its wood is said to be so soft and water-logged as to be of no use even for fuel and so brittle that it will not withstand windstorms. It is being replaced in the cacao plantations because of this brittleness, because the leaves are off the tree from January to May, when they are most essential, and because the roots are surface feeders and interfere with cultivation. (Adapted from *Cook, Shade in Coffee Culture, Bul. 25, Division of Botany, 1901.*)

## 43050 to 43060.

From El Banco, Bolivar, Colombia. Collected by Mr. H. M. Curran. Numbered August 1, 1916. Quoted notes by Mr. Curran except as otherwise indicated.

**43050. CEREUS sp. Cactaceæ. Cactus.**

Cuttings of an "ornamental white-flowered cactus, growing in immense masses on the limbs of forest trees."

**43051. CRINUM sp. Amaryllidaceæ.**

Bulbs of "a low, ornamental forest plant; flowers white, fragrant. Highly prized by the natives of Colombia."

**43052. AMORPHOPHALLUS sp. Araceæ.**

Corns of an "ornamental medicinal plant, used as a remedy against snake bite."

**43053. ZEPHYRANTHES sp. Amaryllidaceæ.**

"Bulbs of a small white Amaryllis. Cultivated in the gardens of the natives along the Magdalena River."

**43054. ARISTOLOCHIA sp. Aristolochiaceæ.**

"Seeds of a fine Aristolochia, ornamental, growing wild in the low lands of the Magdalena River."

**43055. SCHEELEA EXCELSA Karst. Phœnicaceæ. Palm.**

"Trunk 40 to 50 feet high, 2 to 3 feet in diameter; wood reddish. Leaves 15 to 24 feet long, pinnate. Inflorescence in the axils of the leaves, long pedunculate; peduncle 4 to 5 feet long; spathe solitary, fusiform; spadix simply and sparsely branched, 3 feet long, branches 4 to 6 inches long. Fruit drupaceous, edible, ovoid apiculate, about the size of a duck's egg; pericarp mucilaginous, oily, intermixed with fibers; epicarp leathery, yellow; seed bony, one to three celled. Grows in hot valleys of the Magdalena and Canea up to an altitude of about 3,000 feet." (*C. B. Doyle.*)

43050 to 43060—Continued.

43056. *ATTALEA SPECTABILIS* Mart. Phœnicaceæ. **Palm.**

Ornamental Brazilian palm, stemless or with a very short caudex. The erect or spreading leaves are 18 to 21 feet long; the lower segments are 3 to 4 feet and the upper 12 to 16 inches long. The fruit is about as large as a hen's egg. A native of the banks of the Amazon. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 1, p. 428.*)

43057. *BULNESIA ARBOREA* (Jacq.) Engl. Zygophyllaceæ.

"*Guayacan.* One of the principal trees of this region; wood hard, durable; 60 to 70 feet high, 24 inches in diameter. Flowers yellow. Timber weathers, being used for railroad ties, which are not expensive. Magdalena River above Calamar, March 25, 1916."

43058. *ASTROCARYUM* sp. Phœnicaceæ. **Mat palm.**

"*Palma estera.* Common palm of the forest, Tierras de Loba, Bolivar, Colombia. Seeds with an edible coating and will probably yield a commercial oil. Plants with huge ornamental fronds, 20 feet or more in length, glossy green above, glossy or silvery white beneath. Entire plant covered with sharp black spines. This palm has practically no stem. Suitable only for planting in moist localities or greenhouses."

43059. *CANAVALI ENSIFORME* (L.) DC. Fabaceæ. **Jack bean.**

"From Tierras de Loba, Bolivar."

"In Porto Rico the jack bean has been found very useful as a green-manure and cover crop in citrus groves. Its bushy habit makes it especially desirable, as it does not interfere by climbing the trees, while its dense, vigorous growth shades the ground during the heat of summer and provides abundant vegetable matter to add to the soil. Its successful utilization as green feed in Hawaii encourages the belief that it may be found equally valuable in this country, especially in Texas and Oklahoma, where its great drought resistance gives it particular promise." (*C. V. Piper, in Bureau of Plant Industry Circular 110, p. 33.*)

43060. *GOSYPIUM* sp. Malvaceæ. **Cotton.**

"*Barranquilla* cotton. Common cotton from a small plantation on the banks of the Magdalena River in the vicinity of Mompos. This seed was probably distributed by the Department of Agriculture of Colombia. Plants 4 to 6 feet in height and full of fruits and flowers at the time of collection, June, 1916."

43061 to 43069.<sup>3</sup> *RAPHANUS SATIVUS* L. Brassicaceæ. **Radish.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Numbered August 4, 1916.

43061. *Thirty Days.*

43065. *Bottle.*

43062. *Miyashige.*

43066. *Sakurajima Mammoth.*

43063. *All Seasons.*

43067. *Shogoin.*

43064. *Ninengo.*

43068. *Nerima.*

43069. "*Long String.* This is a sort of Japanese radish, and the peculiarity of this variety is that it grows over 3 feet long with a circumference of 2 to 3 inches. A most suitable variety for pickling purposes." (*Yokohama Nursery Co., Catalogue, 1916, p. 77.*)

<sup>3</sup> See footnote, p. 9.



**43070. ANANAS SATIVUS** Schult. f. Bromeliaceæ. **Pineapple.**

From Lawnton, Queensland, Australia. Suckers presented by Mr. Reginald W. Peters, director, Queensland Acclimatization Society. Received August 3, 1916.

"A seedling pineapple we raised and have named *Commonwealth*. It is distinct, of fair size, and very tender, with almost entire absence of stalk or core. It is sweet and perhaps lacking a little in subacidity, but is a fruit most consumers would enjoy." (*Leslie Gordon Corrie*.)

**43071 and 43072.**

From South Yarra, Melbourne, Australia. Presented by Mr. J. Cronin, curator, Melbourne Botanic Gardens. Received July 24, 1916.

**43071. OWENIA VENOSA** F. Muell. Meliaceæ. **Queensland sour plum.**

An Australian tree reaching a height of 40 feet, with a diameter of 3 feet. A native beverage is made from the sour fruit, and the durable, easily worked wood, which is of great strength and is highly colored in various shades from yellow to black, is used for cabinetwork, although its excessive weight and hardness are against its common use. (Adapted from *Maiden, Useful Native Plants of Australia*, pp. 49 and 581.)

**43072. LIVISTONA AUSTRALIS** (R. Br.) Mart. Phœnicaceæ.

**Australian fan palm.**

"An Australian fan palm with stem reaching a height of 80 feet, slender and marked with circular scars; leaves in dense crown, round, 3 to 4 feet in diameter, divided to or below the middle into 40 to 50 narrow, acuminate segments, either entire or two cleft at the apex. It is more stubby growing in greenhouse culture than *Livistona chinensis*, the leaves are stiffer, smaller in proportion, and less graceful, and the footstalks are more thoroughly armed with stout spines. (Adapted from *Bailey, Standard Cyclopædia of Horticulture*, vol. 4, p. 1895.)

**43073. COFFEA AMARA** Bruijning. Rubiaceæ. **Coffee.**

From Fort Dauphin, Madagascar. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received August 1, 1916.

"Local name *Mautsaka*. French name *Café Marchal*. Without caffeine." (*Regnard*.)

**43074. URENA LOBATA** L. Malvaceæ.

From Santiago de las Vegas, Cuba. Presented by Mr. Juan T. Roig, botanist, Agricultural Experiment Station. Received August 5, 1916.

"The most promising native fiber plant, known as *Malva blanca*. Is considered a good substitute for jute." (*Roig*.)

**43075. TUMION NUCIFERUM** (L.) Greene. Taxaceæ.

(*Torreya nucifera* Sieb. and Zucc.)

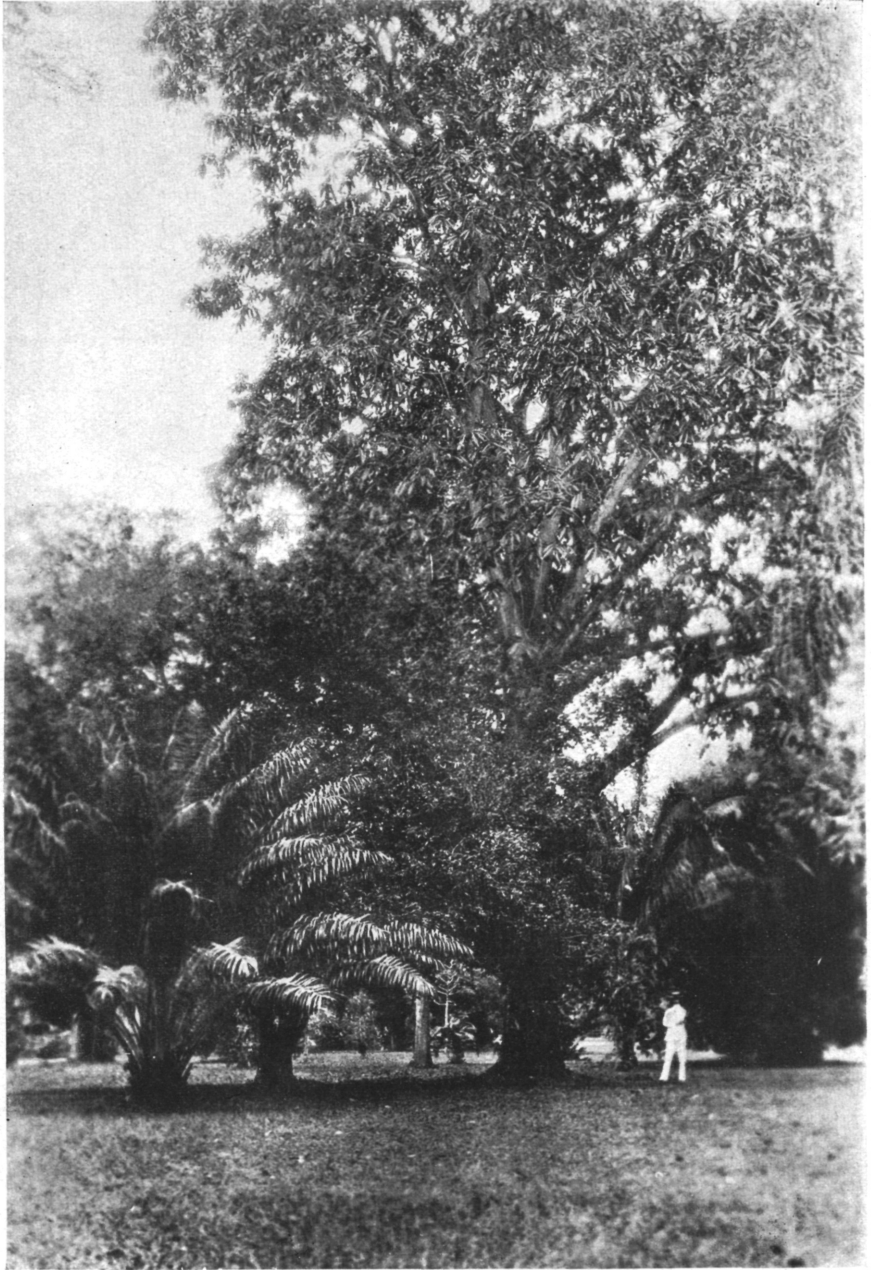
From Hankow, China. Procured through the American consul general. Received July 14, 1916.

*Fei tzu*. "Occurs in the southern islands of Japan and in the forests of southern and central Hondo, attaining its greatest development on the banks of the Kisagawa River, rising to a height of 80 feet and forming a tree unequalled in the massiveness of its appearance and in the beauty of its bright red bark and lustrous dark-green, almost black foliage. On the southwest



**AN AVENUE IN BUITENZORG LINED WITH JAVA ALMOND TREES (*CANARIUM INDICUM* STICKM., S. P. I. NO. 43024).**

The stately Java almond, generally acknowledged to be one of the most beautiful of avenue trees, yields an abundance of large-kernelled edible nuts, similar to the pili nut of the Philippines. The oil from this nut has been used by certain Dutch doctors to make an emulsion for an infant food, and its possibilities as a special oil for infant feeding deserve study. Seeds have been secured for trial in the Panama Canal Zone. (Photographed by Dr. M. Treub, Buitenzorg, Java, Feb. 10, 1909.)



**AN IMPORTANT OIL PRODUCER IN THE TROPICS, THE BRAZIL NUT (*BERTHOLETIA NOBILIS* MIERS., S. P. I. No. 43114).**

This giant of the Brazilian forests is a stately and imposing ornamental tree. Its nuts yield a vegetable oil that deserves considerable attention. Its uses by watchmakers and artists would seem by no means to delimit its possibilities, although over a million dollars' worth of nuts were imported into the United States in 1914 for these purposes and for the edible kernels. The kernels yield approximately 70 per cent of oil. (Photographed by Mr. O. W. Barrett at the Royal Botanic Gardens, Port of Spain, Trinidad.)

coast of Hondo, where it is associated with camellia, *Diospyros kaki*, and other garden favorites, it is somewhat different from the inland trees; the head is more dense and with a rounded top not unlike that of some of the older yews in this country; the leaves too are shorter, narrower, and more pointed. The wood is strong and straight grained; it is much valued for building and cabinetmaking." (*Veitch, Manual of Coniferae, 2d ed., p. 119.*)

**43076 to 43112. PRUNUS NIGRA Ait. Amygdalaceæ.**

**Canada plum.**

From Canada. Scions secured by Mr. M. J. Dorsey, University of Minnesota, St. Paul. Received August 7, 1916.

**43076 to 43088.**

"Scions from the most promising of the W. D. Buchanen seedlings, growing in the orchard at the Manitoba Agricultural College. These were selected for their promise from the larger collection of Mr. Buchanen and represent the best wild types found in the range of the species in Canada. No records are available as to their exact place of origin. The numbers refer to the row and tree locations in the above orchard." (*Dorsey.*)

- |                        |                        |
|------------------------|------------------------|
| 43076. Row 1, tree 1.  | 43083. Row 2, tree 16. |
| 43077. Row 1, tree 14. | 43084. Row 2, tree 24. |
| 43078. Row 1, tree 16. | 43085. Row 2, tree 26. |
| 43079. Row 1, tree 25. | 43086. Row 3, tree 9.  |
| 43080. Row 1, tree 26. | 43087. Row 3, tree 13. |
| 43081. Row 1, tree 27. | 43088. Row 3, tree 16. |
| 43082. Row 2, tree 1.  |                        |

**43089 to 43112.**

"Scions taken from the best trees now remaining in the Buchanen nursery, near Winnipeg. These were selected with the assistance of Mr. Buchanen and are numbered as they were cut. All records of their origin are lost and no labels are legible. The types represent the best of the species in Canada and should be of interest both for their fruit and also taxonomically. None of the seedlings show any evidence of winter-killing, and for this reason they are no doubt of value as breeding stock for the northern United States." (*Dorsey.*)

- |                        |                |
|------------------------|----------------|
| 43089. No. 1, tree 16. | 43101. No. 15. |
| 43090. No. 3.          | 43102. No. 16. |
| 43091. No. 4.          | 43103. No. 17. |
| 43092. No. 5.          | 43104. No. 18. |
| 43093. No. 6.          | 43105. No. 19. |
| 43094. No. 7.          | 43106. No. 20. |
| 43095. No. 8.          | 43107. No. 21. |
| 43096. No. 10.         | 43108. No. 22. |
| 43097. No. 11.         | 43109. No. 23. |
| 43098. No. 12.         | 43110. No. 24. |
| 43099. No. 13.         | 43111. No. 25. |
| 43100. No. 14.         | 43112. No. 26. |

**43113. MANGIFERA INDICA L. Anacardiaceæ. Mango.**

From Pasumalai, Madura District, southern India. Presented by Rev. J. X. Miller, American Mission High School and Training Institution. Received August 7, 1916.

Seeds of a large mango.

**43114. BERTHOLLETIA NOBILIS Miers. Lecythidaceæ. Brazil nut.**  
(*B. excelsa* Berg. not Humb. and Kunth.)

From Para, Brazil. Secured through Mr. George H. Pickerell, American consul. Received August 8, 1916.

"*Brazil nut* or *Para nut*. A tall handsome tree, with oblong wavy leaves which are 14 to 16 inches long and about 3 inches broad, native of Guiana, Venezuela, and Brazil. In its native home, especially on the banks of the Amazon and Orinoco, the tree attains a height of over 100 feet. The tree was introduced at Peradeniya in 1880, and notwithstanding the indifferent ground chosen for it when first planted out, appears to find here a congenial home. It is now [1914] about 60 feet high and produces at the top each year, in the dry season, large erect racemes of white flowers, followed a few months later by a number of large brown fruits which hang on the trees for some months after ripening. Ridley records similar success with the tree at Singapore, where it was introduced in 1881. Each fruit is from 4 to 6 inches in diameter, with a hard brown woody shell which has to be sawed or broken open with an axe in order to obtain the nuts (seeds). In the interior, closely packed, are from 10 to 12 large angular seeds, with a brown horny testa; these are the Brazil nuts of commerce, which form an important article of export from their native country, being largely used for dessert in Europe, America, etc. The tree may be propagated by seed or gootee (layering) and thrives best on a rich alluvial soil in a hot and moist climate." (*Macmillan, Handbook of Tropical Gardening and Planting, 2d ed., p. 144.*)

For an illustration of a Brazil nut tree growing on the island of Trinidad, see Plate II.

**43115. PASSIFLORA LUTEA L. Passifloraceæ. Granadilla.**

From Augusta, Ga. Presented by the P. J. Berckmans Co. Received August 8, 1916.

"The ordinary 'passion flower' of the South, climbing or trailing to a height of 10 feet. Flowers greenish yellow, nearly an inch across; berries half an inch in diameter, smooth, deep purple, not edible. This vine occurs native as far north as Pennsylvania and Illinois, and it is quite probable that resistant hybrids with edible passifloras may be secured." (*Fairchild.*)

**43116. BUTIA BONNETI (Linden) Becc. Phœnicaceæ. Palm.**

From Fruitland Park, Fla. Presented by Mr. Louis Bosanquet. Received July 24, 1916.

H. Nehrling describes this palm as follows: "*Cocos gaertneri* Hort. This is one of the very best of our garden palms, a fast grower, very elegant, and with a dense leaf crown of rather erect fronds. My specimen is about 15 years old. I raised it from seed, which was sent to me by the late Mr. Gaertner from southern Brazil. . . . The trunk is at present 6 feet high and is covered all over with several species of orchids, bromeliads, cacti, etc. . . . It bears heavily, and I have counted as many as 980 fruits in one bunch. They are closely packed, of the size of a small plum, orange-yellow with a red cheek,

very juicy, intensely fragrant, and of an apricot flavor. . . . This is a most beautiful palm, reminding one in its shape very much of *C. datil*, but it is not so massive. The leaves are about 10 feet long." (See *Proceedings of the Twenty-Second Annual Meeting of the Florida State Horticultural Society, May, 1909, p. 57.*)

"Blumenau, who first described this species, recommended it for cultivation because of its great hardiness. He says that it grew in a locality exposed to occasional frosts and even snow, with temperatures of 10° or 12° C. below freezing. Barbosa Rodriguez, in a recent work on the Brazilian palms, has placed this species as a synonym under *Cocos eriospatha*." (C. B. Doyle.)

#### 43117 and 43118.<sup>4</sup> ZEA MAYS L. Poaceae. Corn.

From Ottawa, Canada. Presented by Mr. J. H. Grisdale, director, Central Experiment Farm. Received August 18, 1916.

43117. "*Early Malcolm* sweet corn, a variety which Mr. Logsdail says is nothing more than the *Malakoff* which Hansen brought from Russia and which is the only variety that matures consistently in the region of Ottawa." (Mr. Fairchild's report, 1915.)

43118. "*Early Ottawa*. This strain was produced by employing *Early Malcolm* as the pollen parent and *Early Adams* as the female parent. We have found that this seed does best in areas where the average length and development of the season are similar to our conditions around Ottawa." (A. J. Logsdail.)

For an illustration of this sweet-corn hybrid, see Plate III.

#### 43119 to 43123.<sup>4</sup> ANANAS SATIVUS Schult. f. Bromeliaceae. Pineapple.

From Singapore, Straits Settlements. Presented by Mr. I. H. Burkill, director, Botanic Gardens. Received August 16, 1916.

Suckers of the following varieties:

- |                            |                         |
|----------------------------|-------------------------|
| 43119. <i>Harvey's</i> .   | 43122. <i>Ruby</i> .    |
| 43120. <i>Mauritius</i> .  | 43123. <i>Sarawak</i> . |
| 43121. <i>Pernambuco</i> . |                         |

#### 43124 to 43187.

From Avondale, Auckland, New Zealand. Plants presented by Mr. H. R. Wright. Received August 12, 1916. Quoted notes from the Avondale Nursery catalogue, except as otherwise noted.

#### 43124 to 43138.<sup>4</sup> AMYGDALUS PERSICA L. Amygdalaceae. Peach. (*Prunus persica* Stokes.)

43124. "*A 1*." A counterpart of *Paragon*, ripening about March 9, also a seedling from *Elberta*. An ideal market peach. The growth is short, thick, and compact, with very large, handsome foliage. Tree an annual and heavy bearer."

43125. "*Golden Queen*. A yellow-fleshed clingstone, raised by Mr. Reeves, Tauranga. It is claimed to be one of the best canning peaches. Tree compact in growth, heavy cropper; fruit of medium size, deep yellow to stone, and will hang well."

<sup>4</sup> See footnote, p. 9.

## 43124 to 43187—Continued.

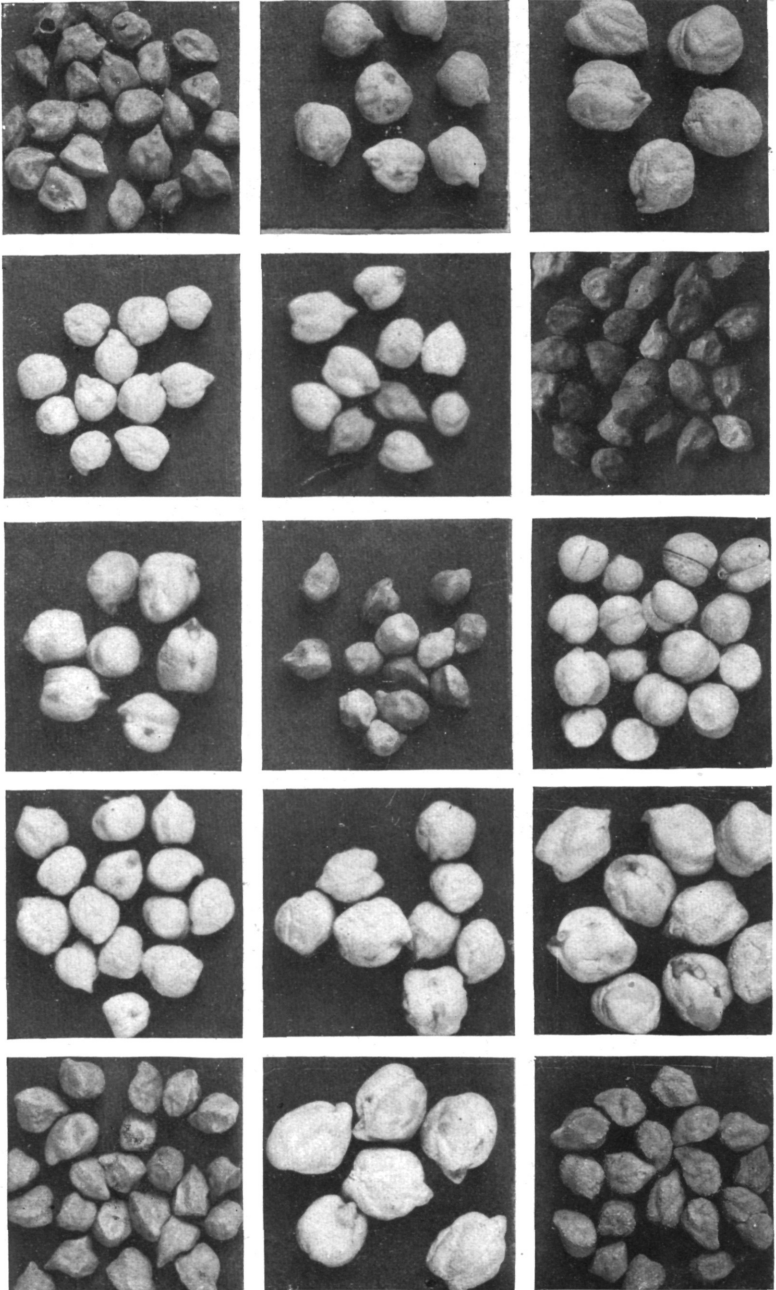
43126. "*Ice Cream*. A cross between *Up-to-Date* and *Osprey Improved*. Tree very vigorous, enormous dependable cropper; fruit of large size, ripening just after *Osprey Improved* [S. P. I. No. 43134], cream color, with red on sunny side, freestone, exquisite flavor."
43127. "*Ideal*. New, second early, very good."
43128. "*Kerr's Late*. A seedling from *Salway*. The fruit is large, with a deep yellow skin and beautiful red cheek; a perfect freestone; one of the most dependable croppers of late peaches."
43129. "*Late Champion*. Resembles *Waikato Champion*, but, unlike that variety, is a good cropper and ripens about three weeks later. It is one of the largest peaches grown, and bears heavy and regular crops every year."
43130. "*Lippiatt's Late Red*. Another fine peach; color creamy, mottled, striped, and overspread with dark red; tree a fine grower and an immense bearer."
43131. "*Model*. Seedling from *Paragon*. This peach, as its name implies, leaves nothing wanting in a commercial fruit of very large size; heavy cropper, good quality, and of beautiful color; yellow flesh, semicling; little later than *Paragon* [S. P. I. No. 43135]."
43132. "*Motion's Cling*. A large clingstone, resembling *Stark* in appearance; an ideal market variety, being of very high color; will prove a commercial peach; a great cropper."
43133. "*Muir's Perfection*. This is one of the finest midseason peaches I have ever seen; its rare size and handsome appearance will easily place it as a sure prize winner. Its flavor is delicious, flesh white, freestone. Fruits beautifully colored, even in the shade of the tree. In shape like that of *Sea Eagle*, and often quite as large. For commercial or home use it, without a doubt, will become a great favorite."
43134. "*Osprey Improved*. A fine peach for home use, fine size and good quality, but too soft and lacking in color for market; a most dependable cropper."
43135. "*Paragon*. A yellow-fleshed clingstone peach of my own raising. All points considered, as an all-round peach it stands alone in its season. In the whole catalogue no peach can compare with it from year to year for cropping. *Paragon* is a favorite with all growers. It is too well known now to require further comments. As a cropper it will rank among peaches as *Burbank* among plums."
43136. "*Shipper Cling*. A very large clingstone peach of our own raising, with deep pumpkin-yellow flesh, orange-yellow skin, very red cheek, and a very attractive appearance. It is by far the finest peach for either bottling or canning, for when preserved the fruit remains intact. Those growing peaches for their own bottling should try this grand peach, as it is simply delicious."
43137. "*Up-to-Date*. Yellow-fleshed freestone seedling of my own raising. Most vigorous of all peaches; tree heavy bearer; fruit of immense size and of delicious flavor. This variety we find better suited for canning and home use, being rather tender for long shipments."



AN EARLY-MATURING CROP FOR THE NORTH, SWEET CORN (*ZEА MAYS L.*, S. P. I. No. 43118).

A cross between the Early Malcolm (staminate parent) and the Squaw corn (pistillate parent). The Early Malcolm (a straight selection from the Malakoff, S. P. I. No. 13, an early introduction from Russia) is the only variety that matures regularly in Ottawa. The cross is a very sweet variety. (Photographed by Mr. Fairchild, Sept. 17, 1915, at the Central Experimental Farms, Ottawa, Canada; P19316FS.)





SEEDS OF A STAPLE FOOD PRODUCT IN SPAIN, A FEW OF THE NUMEROUS VARIETIES OF CHICK-PEA (*CICER ARIETINUM* L., S. P. I. Nos. 43273-43280).

The chick-pea, or garbanzo of Spanish countries, is used very extensively. In some regions it stands next in importance to wheat as a food plant. It is employed in meat stews almost universally in Spain and is eaten as a breakfast dish in Asia Minor in the form of a puree. Muffins made from chick-pea meal closely resemble corn-meal muffins. The chick-pea is an arid-region plant and does not thrive where the summers are moist. Its leaves are covered with sticky hairs containing oxalate of lime; this makes it somewhat disagreeable to harvest by hand. In regions where it grows well it should be carefully studied as an important leguminous grain crop. (Photographed by E. C. Crandall, Dec. 21, 1909; P6248FS.)

## 43124 to 43187—Continued.

43138. "*Weeping*. These are most showy and decorative trees to plant, being ornamental as well as useful. The pendulous habit makes them very conspicuous when planted on a lawn or drive. If the ground is well manured and cultivated around them, they will produce great crops of fruit of splendid quality. These are worked on standard stocks, ranging in height from 5 feet to 6 feet 6 inches."

43139 to 43146.<sup>5</sup> *AMYGDALUS PERSICA NECTARINA* Ait. Amygdalaceae.

Nectarine.

43139. "*Anseene*. The parent of *Goldmine*. The fruit is of the largest size and of very light color; flesh tender, melting, and of most delicious flavor; tree extremely hardy and a regular cropper."

43140. "*Diamond Jubilee*. This new nectarine is very large in size, larger than any except *Zcalandia*; bright red in the sun, dull red in the shade; flavor exquisite, flesh greenish white, melting, and very sweet; a prodigious bearer. Young transplanted trees in the nursery rows were carrying fruit, and the branches of the older trees were bending down with the weight of fruit. The points in this nectarine are its heavy cropping, large size, and delicious flavor."

43141. "*Goldmine*. The fruit is of enormous size. It is a perfect freestone, the pit being extremely small for so large a fruit. The fruit is a beautiful cream color, tender, juicy, melting, sugary, and of most delicious flavor; color bright bronzy red; season of ripening, second week of February; a very heavy cropper."

43142. "*Lippiatt's Late Orange*."

43143. "*Muir's Seedling*. A new seedling of the *Goldmine* type, resembling that variety in size and color, but ripening when *Goldmine* is all finished, thus prolonging the season and an acquisition on that account."

43144. "*New Boy*. Fruit of large size and extremely handsome, covered all over with brilliant crimson; flesh white, juicy, sugary, and of exquisite flavor; tree very hardy and a profuse cropper; one of the best."

43145. "*Radium*. A new nectarine of large size, orange shaped, highly colored, very sweet; ripens just after *Goldmine*. It is quite free from that objectionable point which all the large nectarines possess; therefore, for packing, *Radium* comes first."

43146. "*Surecrop*. A seedling of my own raising, which resembles *Goldmine* in size and appearance, but is a much heavier cropper. It has never failed to carry a full crop. I have every confidence in recommending this grand new nectarine."

43147. *CITRUS SINENSIS* (L.) Osbeck. Rutaceae.

Orange.

"*Best Seedless*."<sup>5</sup> A new local seedling of great merit and, as its name indicates, perfectly seedless; in quality one of the finest we have ever sampled and sure to become a great favorite; the most vigorous of all oranges."

<sup>5</sup> See footnote, p. 9.

## 43124 to 43187—Continued.

43148. *ERIOBOTRYA JAPONICA* (Thunb.) Lindl. Malacæ. **Loquat.**  
*"Thames Prize."* Named so from the fact that it has always carried off the prize at the Thames show, the district of its origin; fruit of large size and very fleshy. Tree very vigorous."
- 43149 and 43150.<sup>6</sup> *FRAGARIA* sp. Rosacæ. **Strawberry.**  
 43149. "*Melba.*" Fruit large, brilliant red, and of the best flavor when grown in good land; with plenty of moisture it will bear good crops from the beginning of November to May. As the young runners commence to fruit as soon as well rooted, they should be left, making beds, say, 3 feet wide, grown into a solid mass. Although the fruit is covered with foliage, it will still be fully colored. I would strongly recommend this variety to strawberry growers."
43150. "*Phenomenal.* A remarkably early variety; fruit large, splendid flavor and color, carrying well; extremely vigorous. This variety is without doubt the finest carrying strawberry we know of and one that will often produce good autumn crops."
- 43151 to 43174.<sup>9</sup> *MALUS SYLVESTRIS* Mill. Malacæ. **Apple.**  
 (*Pyrus malus* L.)
43151. "*Bella Davis.* Dessert."
43152. "*Carlton.* A blight-proof seedling from *Northern Spy*; fruit very large, yellow, striped carmine; flesh crisp and juicy; tree a heavy cropper and bears young; season late."
43153. "*Cliff's Seedling.* Raised from pips of *Northern Spy*; fruit medium to large, *Pearmain* shaped. It is highly colored; flavor exquisite; flesh yellow, crisp, and juicy, blight proof, late."
43154. "*Climax.* Dessert. Another perfectly blight-proof apple, raised by Mr. J. F. Smith. Fruit is above medium size and roundish, skin clear waxy yellow, streaked and dotted on the sunny side with lively crimson; flesh yellow, crisp, juicy, tender, and of honeyed sweetness." (*C. A. Nobelius's catalogue.*)
43155. "*Coldstream Guards.* A first-class early summer dessert apple; size medium to large; smooth, round, of bright color and very taking appearance; can not be too highly recommended for market; tree healthy, hardy, and a heavy cropper; resembles *Red Astrachan*; blight proof."
43156. "*Cole's Blushing Bride.* A beautiful dessert apple, of most handsome appearance, and somewhat conical in shape; tree a heavy cropper and blight proof; highly recommended; medium."
43157. "*Diadem.* Dessert cooking."
43158. "*Edward Lippiatt.* A blight-proof seedling raised by Mr. W. E. Lippiatt; fruit large, roundish, sometimes oblate; even and regular in outline; skin yellow, streaked with lively crimson; flesh white, crisp, juicy, and sweet, with a fine aromatic perfume and exceedingly rich flavor. Tree vigorous, a heavy and early bearer. A most vigorous apple for commercial and home use."

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\* See footnote, p. 9.

## 43124 to 43187—Continued.

43159. "*General Carrington*. Raised by Mr. J. F. Smith from *Northern Spy* pips. Tree of strong, vigorous, upright habit and perfectly blight proof. Fruit large and handsome; skin yellow, beautifully striped with crimson; flesh yellowish white, rich, crisp, juicy, and sugary, of delicious flavor; late." (*C. A. Nobelius's catalogue.*)
43160. "*George Neilson*. A large early apple, resembling *Red Astrachan*, of which it is said to be an improvement; blight proof."
43161. "*Hay's Midseason*. Fruit large, beautifully striped, bright carmine on greenish yellow ground; flesh firm, yellow, crisp, juicy, sweet, and of exquisite flavor; blight proof." (*C. A. Nobelius's catalogue.*)
43162. "*John Sharp*. Late; fruit large; skin smooth, greenish yellow, covered with red and russet dots; flesh juicy and sweet; tree vigorous and a regular bearer; blight proof; late coming into bearing."
43163. "*Kennerley's May*. Cooking; very late."
43164. "*Lilydale* (dormant buds). Very early dessert."
43165. "*Lord Wolseley*. Fruit medium size, roundish conical; skin clear rich yellow, flesh very firm, juicy, subacid, brisk; tree a constant bearer and quite blight proof; dessert and culinary; late."
43166. "*Marjorie Hay*. A very early dessert apple raised by Mr. H. E. Sharp. Fruit very large and extremely handsome; one of mottled, with lovely red flesh; white, tender, juicy, and very crisp. Highly recommended by the raiser as the best early blight-proof apple."
43167. "*Mona Hay*. A blight-proof seedling raised by Mr. H. E. Sharp; fruit of medium size and of exquisite flavor; one of the best; medium."
43168. "*Patuka* (new); not quite aphid resistant; very late dessert. Patuka is Maori for Port Albert." (*Wright.*)
43169. "*Red Spy*. Dessert."
43170. "*Sharp's Late Red*. A blight-proof seedling raised by Mr. H. E. Sharp. Fruit very large and extremely handsome; one of the best."
43171. "*Sharp's Nonesuch*. Cooking."  
 "Another of Mr. H. E. Sharp's seedlings. Vigorous grower and blight proof; skin deep yellow, striped with red; flesh yellow, tender, and very juicy; pleasant flavor; medium." (*C. A. Nobelius's catalogue.*)
43172. "*Taupaki* (Maori name of a place). Dessert." (*Wright.*)  
 "A New Zealand variety; most highly colored and perfectly shaped fruit; a yellow ground streaked and striped with bright crimson; a good keeper." (*C. A. Nobelius's catalogue.*)
43173. "*Te Whiti*. The tree is a strong, clean, and vigorous grower and an abundant bearer; medium size, dark red in color, rich and of fine flavor; unsurpassed as a late keeper."

## 43124 to 43187—Continued.

43174. "Willie Sharp."

"A beautiful medium-sized dessert apple; skin yellow, nearly transparent in ripening, flesh crisp, of vinous flavor." (*P. L. C. Shepherd & Son's catalogue.*)

43175 to 43181.<sup>†</sup> PRUNUS SALICINA Lindl. Amygdalaceæ.

Japanese plum.

43175. "*Akarana*. A chance seedling which resembles *Botan*. Tree a vigorous grower and heavy cropper; fruit of magnificent color and firm flesh. A good succession to *Wright's Early*."

43176. "*Alpha*. Of large size and distinct flavor, very firm, ripe with *Akarana*, and a reliable cropper."

43177. "*Export*. A new hybrid, a cross between *Wright's Late* and *Early Golden*; fruit medium to large and very firm; exceedingly sweet. This, like the preceding one, also lacks the foxy taste. This should prove to be one of the most valuable blood plums in existence, owing to being a wonderful keeper; fruit has been kept for six weeks after picking, and on the tree it has been kept for three months. Season, middle of January to April."

43178. "*Sharp's Early*. Raised by Mr. John Sharp, Cambridge. Supposed to be a seedling from *Botan*; fruit heart shaped, medium size, purple in color when thoroughly ripe; tree a great cropper. In season about the 15th of December."

43179. "*Wright's Early* on peach."

"A seedling from *Burbank*, raised by myself; the earliest and most profitable of all plums. The fruit is identical with the well-known *Burbank*, the only difference being its season of ripening and the habit of growth, being more erect, which is a great point in its favor."

43180. "*Wright's Early* on plum." See description under previous number (S. P. I. No. 43179).

43181. "*Wright's Purple*."

43182. PRUNUS SALICINA × (?).

Hybrid plum.

"*Best's Hybrid*.<sup>†</sup> A splendid all-purpose plum, i. e., dessert and culinary. This is a cross between *Cherry* plum and *Ogon*; fruit large, yellow, shaped like *Cherry* plum; tree enormous cropper; the absence of the foxy taste peculiar to Japanese plums is a great point in its favor, and it will become a great favorite."

43183 to 83186.<sup>†</sup> PYRUS COMMUNIS L. Malaceæ.

Pear.

43183. "*Belmont*. A New South Wales seedling, raised from the well-known *Bon Chrétien*, ripening about the 10th of April; shape roundish, tapering slightly to the stalk; skin golden; flavor identical with *Bon Chrétien*; an early and heavy cropper, coming into bearing the second year; first-class dessert."

43184. "*Packham's Late*. Another of Mr. Packham's seedlings, which promises to outrival his *Triumph* [S. P. I. No. 43185]; fruit fairly large and heavy cropper. From what I have seen of the *Triumph* I am more than satisfied, as it is unquestionably the finest of its season."

<sup>†</sup> See footnote, p. 9.

## 43124 to 43187—Continued.

**43185.** "*Packham's Triumph*. This is the king of the autumn pears and a triumph in pear culture. The tree is a tremendous cropper and comes into bearing at an early age. In season about the second week in April. We have had the pleasure of both seeing and sampling this grand pear from specimens procured from Sydney by post. It is a counterpart of Williams's *Bon Chrétien* in appearance, flavor, and perfume. It carried off the prize every time it has been exhibited. I should say that it must be a seedling or hybrid from *Williams*. There is a great future in this pear as a money maker."

**43186.** "*Winter Cole*. Seedling from *Winter Nelis*, which it resembles. Fruit almost round, medium size, pale yellow, spotted with russet; one of the richest of pears."

**43187.** *ASTELIA* sp. Liliaceæ.

"An epiphyte which grows on the trees. I think the seed would grow best in a mixture of leaf mold and decayed wood dust. A delicious honey is made from the flowers of the plant." (*Wright*.)

**43188.** *LATHYRUS SULPHUREUS* Brewer. Fabaceæ. **Vetchling.**

From Columbia, Calif. Collected by Mrs. Adele Lewis Grant. Received August 14, 1916.

A smooth-stemmed vetchling from the northwest coast, not rare in open coniferous woods. The flowers are at first pinkish yellow, fading to ochraceous, never sulphur yellow as described by Brewer. (Adapted from *Piper and Beattie, Flora of the Northwest Coast, p. 225.*)

**43189.** *PTEROCARPUS MARSUPIUM* Roxb. Fabaceæ. **Kino tree.**

From Dindigul, Madura District, southern India. Presented by Rev. W. P. Elwood, American Madura Mission. Received August 12, 1916.

"*Vengai*. A tree with beautiful hard wood. The tree grows at an altitude of 3,000 to 4,000 feet and endures a good deal of heat and drought. A great many of the seeds are destroyed by worms and other insects entering the seed vessel at the side." (*Elwood*.)

For an interesting discussion of kino production, see *Watt, Commercial Products of India, pp. 908 and 909.*

**43190 to 43194.**

From Africa. Presented by Rev. C. W. Guinter, Sudan United Mission, Northern Nigeria. Received August 9, 1916. Quoted notes by Rev. Mr. Guinter.

**43190 and 43191.** *PENNISETUM GLAUCUM* (L.) R. Br. Poaceæ.

(*P. typhoideum* Rich.)

Pearl millet.

**43190.** "A small-grained variety with pearl-gray hulls."

**43191.** "A variety with slightly larger grains than those of the preceding and with reddish brown hulls."

**43192.** *PHASEOLUS LUNATUS* L. Fabaceæ.

Lima bean.

"*Brosa* bean."

**43193.** *SESAMUM ORIENTALE* L. Pedaliaceæ.

Sesame.

(*Sesamum indicum* L.)

"Bennin."

**43194.** *VIGNA SINENSIS* (Torner) Savi. Fabaceæ.

Cowpea.

"Small white bean."

**43195 to 43201. RUBUS STRIGOSUS Michx. Rosaceæ. Raspberry.**

From Canada. Collected by Mr. M. J. Dorsey, University of Minnesota, St. Paul. Received August 17, 1916. Quoted notes by Mr. Dorsey.

"Raspberries carefully selected from plants bearing berries of the best type for the species in the region around Lake Winnipeg and the Riding Mountains in Canada for the purpose of securing the wild raspberry for breeding purposes in the northern United States. This species grows abundantly and is generally distributed in the localities visited in Manitoba. It is quite similar in appearance in its northern range to that in the northern part of Minnesota, where I have had the opportunity to observe it quite extensively in the wilds, especially in the region of the Red Lakes, Grand Rapids, Cloquet, Mille Lac, etc.

"It seemed from the preliminary survey of the field that it would be best to visit the localities on the edge of the granite area extending in a northerly direction about 60 miles east of Winnipeg, as well as the region of the Riding Mountains. The granite area was visited at points around Lac du Bonnet, the Winnipeg River, and the Pinawa River. From these points on the margin of the granite area in the east I proceeded to the west from Winnipeg to the Riding Mountains. Here *Rubus strigosus* grew generally along ditches and roads and in the burned-over areas of the foothills.

"In the eastern region the raspberries were on the whole bearing more abundantly than those in the west at the Riding Mountains. The isothermal lines extend considerably northward in this region, so it seems to me from the progress of the season and the nature of the vegetation that perhaps all told the selections in the East on the granite area were from stock subjected to harder weather conditions than in the West. Of course, in this part of Canada when winter sets in it is quite constant, and there is generally snow enough to cover raspberries growing in the wild. For this reason there may be an extension of the species northward, owing to its natural protection rather than to its ability to withstand cold."

**43195.** "From Lac du Bonnet, Manitoba, July 30, 1916. Some splendid types were found in this locality, especially where land had been cleared or burned over recently."

**43196.** "From Pinawa River, Manitoba, July 31, 1916. From the granite area; some splendid types were found in this area, especially where the land had been cleared or burned over recently."

**43197.** "From Big George Island, Lake Winnipeg, Manitoba, August 5, 1916. A fishing station is located on Big George Island, which is occupied for the most part by Indians during the summer and vacated during the winter. There are large open areas on the eastern shore where I found the best raspberries of the whole trip. Plants more than 5 feet tall were numerous in the cleared area around the fisheries. They were bearing heavily and the Indians were just beginning to pick. The opportunity for selection here was good. The increased size of the plants was undoubtedly due to the better growing conditions of a water-bounded locality."

**43198.** "From Little Bull Head, Lake Winnipeg, Manitoba, August 6, 1916. Nearly 100 miles northwest of Lac du Bonnet, on the west shore of the lake. The plants in this region were growing in open areas in the woods and were, in small patches, equal to the best I found in the locality of Lac du Bonnet. The ground for the most part around there was low and quite swampy, so that all told I did not consider the region as favorable as Lac du Bonnet, considering the area which could be covered."

**43195 to 43201—Continued.**

**43199.** "From McCreary, Manitoba, August 7, 1916. In the region of Riding Mountains the land was rolling, and the soil was of the black prairie type, underlain with clay and gravel. There were plants enough, so one could search through wide areas and select from large numbers, and I chose what the local authorities considered the best areas."

**43200.** "From Dauphin, Manitoba, August 8, 1916. In the region of Riding Mountains the land was rolling, with typical black prairie soil underlain with clay and gravel. Selections were made over a wide area."

**43201.** "From Erickson, Manitoba, August 9, 1916. The land at Erickson was more rolling than at McCreary and Dauphin, and the soil was of the same black type, underlain with clay and gravel. Selections were made over a large area."

**43202 to 43212. PRUNUS NIGRA Ait. Amygdalaceæ.****Canada plum.**

From Winnipeg, Canada. Presented by Prof. F. W. Broderick, Manitoba Agricultural College. Received August 21, 1916. Cuttings of the following; quoted notes by Prof. Broderick.

Hardy selected plums from Manitoba. Stock selected from the original collection that Mr. Buchanen made from all parts of the Province and which are now being grown by Prof. Broderick at the Manitoba Agricultural College.

**43202.** "No. 24. Very early, large size, good quality."

**43203.** "No. 26. Early, medium size, good quality."

**43204.** "No. 35. Early, medium size, fair to good quality."

**43205.** "No. 40. Medium early, medium size, good quality."

**43206.** "No. 44. Early, large size, good quality."

**43207.** "No. 50. Early, large size, good quality."

**43208.** "Row 3, tree 4."

**43209.** "Row 31, tree 10."

**43210.** "Row 3, tree 17."

**43211.** "Row 3, tree 22."

**43212.** "Row 1, tree 28."

**43213. FEVILLEA CORDIFOLIA L. Cucurbitaceæ.****Sequa.**

From San Jose, Costa Rica. Presented by Mr. J. E. van der Laet, Director of Agriculture. Received August 14, 1916.

"The *sequa*, or *cacoon antidote*, of Jamaica, where it is a common plant in shady woods, climbing to great height up the trunks of trees. The fruits are 4 or 5 inches in diameter and contain from 12 to 15 large flat seeds which possess purgative and emetic properties and have an intensely bitter taste. In Jamaica the negroes employ them as a remedy in a variety of diseases and consider them an antidote against the effects of poison; they also obtain a large quantity of semisolid fatty oil, which is liberated by pressure and by boiling them in water." (*Lindley, Treasury of Botany, pt. 1, p. 491.*)

**43214. ULMUS FOLIACEA SUBEROSA (Moench.) Rehder. Ulmaceæ.****Elm.**

From Kief, Russia. Procured through Messrs. St. Przedpelski and T. Antoniewicz. Received August 15, 1916.



"*Cork-barked* elm. Like the type in leaf, but of stiff, spreading, low habit, the branches 2 or more years old becoming furnished with usually four conspicuous corky ridges. It has to be noticed, however, that the corkiness of the branches is often noticeable in a greater or less degree in what we regard as the typical *Ulmus nitens*, and if seeds of the most suberous tree were sown, it is probable that there would appear many ordinary *U. nitens* among them. Common in forests of central Europe." (*Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 618.*)

Received as *Ulmus turkestanica*, which is recognized by Rehder as a form of *U. foliacea suberosa*.

#### 43215. DIOSPYROS TUPRU Buch.-Ham. Diospyraceæ.

From Poona, India. Presented by Mr. P. C. Patit, Acting Deputy Director of Agriculture. Received August 7, 1916.

A tree of small, moderate, or large size, up to 60 to 80 feet high; diœcious or polygamous; the heartwood is black in some trees and of a hard and heavy substance called at Munghur *Batti* and at Saseram *Abnus*. The latter word is said to be of Persian origin and a source from which our word *ebony* is derived. Trunk gray-black; alternate or opposite, ramified as in the oak. Leaves bright green, 2 to 14 inches long by 1½ to 7½ inches wide. Pistillate flowers three or four, white, one-third to five-twelfths of an inch long; staminate flowers solitary. Fruit egg shaped or globose, about 1 inch long by three-fourths of an inch thick; fruiting calyx surrounding the base of the fruit or spreading. The fruit when ripe is sweet and not very bad to the taste. This valuable tree sheds all its leaves in the cold season, and they appear again in the beginning of the hot weather (*Beddome*); not uncommon in the Cuddapah, Salem, and Kurnool forests in Madras. (Adapted from *Hiern, Transactions of the Cambridge Philosophical Society, vol. 12, pt. 1, pp. 158-159.*)

#### 43216 and 43217.

From Manila, Philippine Islands. Presented by Mr. Adn. Hernandez, Director of Agriculture. Received August 21, 1916.

#### 43216. MANGIFERA INDICA L. Anacardiaceæ.

**Mango.**

"*Carabao*. This variety is a native of the Philippines and is without a doubt the best mango fruit I have ever eaten. It is indigenous all over the islands, principally found growing along the walls of the rice paddies. Rarely cultivated in orchard form." (*H. H. Boyle.*)

See S. P. I. 38390 for a previous introduction.

#### 43217. SYZYGIUM CUMINI (L.) Skeels. Myrtaceæ.

**Jambolan.**

(*Eugenia jambolana* Lam.)

"A small evergreen tree met with throughout India and Burma, ascending the hills to about 6,000 feet. It is chiefly found along river beds and is especially cultivated for its fruit in gardens and in avenues. There are several varieties that yield much better flavored fruit than others, but as a rule it is astringent and only serviceable when cooked in tarts and puddings. In Goa a wine is prepared from it, and a spirit (*jambava*) is spoken of by recent Sanskrit authors as distilled from the *jambu*. Some years ago brandy was made at Monghyr from the fermented fruit. The *jambu* is extensively used all over India in the manufacture of vinegar. The tasar silkworm is said to feed on the leaves of the tree. The timber is fairly durable and is largely employed for building purposes, for agricultural implements, and for well work, since it resists the action of

**43216 and 43217—Continued.**

water. It gives a good fuel. The *jambu* is one of the trees held in veneration by the Buddhists and is often placed near the Hindu temples because regarded as sacred to Krishna." (*Watt, Commercial Products of India, p. 526.*)

**43218 and 43219.**

From Africa. Presented by Rev. C. W. Guinter, Sudan United Mission, Northern Nigeria. Received August 11, 1916.

**43218.** VIGNA SINENSIS (Torner) Savi. Fabaceæ. **Cowpea.**

**43219.** VOANDZEIA SUBTERRANEA (L.) Thouars. Fabaceæ.  
**Bambarra ground nut.**

"It is somewhat similar to the ordinary ground nut or peanut (*Arachis hypogaea*), but its development of leaves is less abundant; it affords a smaller amount of vegetable matter after it has been harvested, and its cultivation improves the soil to a smaller extent than that of the ground nut. None the less, it is claimed that the cultivation of this plant deserves extension, because it is capable of furnishing useful quantities of nutritious material and because the digging of the nuts is conducted in a far easier and cheaper manner than that of ground nuts." (Extracted from *The Agricultural News, Oct. 29, 1910.*)

**43220.** CHAYOTA EDULIS Jacq. Cucurbitaceæ. **Chayote.**  
(*Sechium edule* Swartz.)

From San Jose, Costa Rica. Presented by Mr. José C. Zeledón, through Mr. O. F. Cook, of the Bureau of Plant Industry. Received August 28, 1916.

"Chayote without fiber; that is, the seed is not inclosed in the usual fibrous bag." (*Zeledón.*)

**43221.** ORYZA SATIVA L. Poaceæ. **Rice.**

From Africa. Presented by Rev. C. W. Guinter, Sudan United Mission, Northern Nigeria. Received August 11, 1916.

A red-grained form.

**43222.** VITIS VINIFERA L. Vitaceæ. **Grape.**

From Sydney, New South Wales, Australia. Cuttings presented by Mr. George Valder, undersecretary and director, Department of Agriculture. Received August 30, 1916.

"*Centennial*. This variety is a shy cropper and is inclined to do best in a warm climate, more particularly under irrigation. It is supposed to be a seedling of *Gordo Blanco* and was raised in the first place many years ago by a Mr. Knight, of Bendigo, Victoria." (*Valder.*)

**43223.** ANANAS SATIVUS Schult. f. Bromeliaceæ. **Pineapple.**

From Barbados, British West Indies. Suckers presented by Mr. Francis Watts, Commissioner of Agriculture for the West Indies. Received August 30, 1916.

"A variety of pineapple obtained from Grenada, concerning which, however, little is known locally. The fruits, which I have seen, somewhat resemble the *Red Spanish* in general shape and appearance, but are somewhat paler in color. The fruit, though somewhat acid, has a fair flavor." (*Watts.*)

**43224 to 43226. MANGIFERA INDICA L. Anacardiaceæ. Mango.**

From Mexico. Presented by Mr. Frank W. Moore, British vice consul, La Paz, Lower California, Mexico. Received August 29, 1916.

This material was sent in reply to our request for seeds of especially good mangos reported by the United States consul at Mazatlan, Mexico, as growing in the Arroyo de Leon, near La Paz, Lower California, and probably obtainable through the British vice consul at that place.

43224. From Triunfo, near La Paz.

43225. From La Paz.

43226. From Arroyo de Leon, near La Paz.

**43227. HYDNOCARPUS KURZII (King) Warb. Flacourtiaceæ.**

(*Taraktogenos kurzii* King.)

**Kalanzo.**

From Calcutta, India. Purchased from Messrs. Smith, Stanistreet & Co., through Mr. James A. Smith, American consul general. Numbered September 6, 1916.

A large tree, 40 to 50 feet high, from the forests of Sylhet, Chittagong, and Burma. The seeds yield the true chaulmoogra oil, which has recently come into prominence through its remarkable curative effects on leprosy when applied locally and internally.

Dr. Victor G. Heiser, in concluding an article on "Leprosy—Its Treatment in the Philippine Islands by the Hypodermic Use of Chaulmoogra Oil Mixture" (*Am. Journ. Tropical Diseases and Preventive Medicine*, vol. 2, p. 300, 1914), says in part:

"The present stage of the development of the treatment herein described does not warrant a claim that anything like a specific for leprosy has been found, but experience does show that it gives more consistently favorable results than any other that has come to our attention, and it holds out the hope that further improvement may be brought about. It produces apparent cures in some cases, causes great improvement in many others, and arrests the progress of the disease in almost every instance."

**43228. VICIA FABA L. Fabaceæ.**

**Broad bean.**

From La Paz, Bolivia. Presented by Mr. John D. O'Rear, United States Minister. Numbered September 20, 1916.

"The only variety of broad bean that is cultivated in this country. The bean is produced very successfully here, especially in the high altitudes, and constitutes one of the principal articles of diet of the Indians of the Altiplano, who use it in roasted form. It is also used widely as a table food, being of very good quality, and when properly prepared it provides a very wholesome and delicious dish. These seeds are dried in the same form as that used by the natives for preserving the seed from one season to another and will have to be soaked in water for two or three days before planting." (*O'Rear.*)

**43229 to 43232. VICIA FABA L. Fabaceæ.**

**Broad bean.**

From India. Presented by Mr. J. MacKenna, Agricultural Adviser to the Government of India, Pusa, who obtained them through the superintendent of the Kumaun Government Gardens. Received August 29, 1916. Quoted notes by Mr. MacKenna.

"Of the higher Himalayan forms."

43229. "No. 1. Long podded." 43231. "No. 3. Broad podded."

43230. "No. 2. Long podded." 43232. "No. 4. Broad podded."

**43233 to 43236.**

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received August 29, 1916. Quoted notes by Dr. Proschowsky.

**43233.** LITHRAEA MOLLEOIDES (Vell.) Engl. Anacardiaceæ.  
(*L. aroevirinha* L. Marchand.)

"Bush or small tree, very resistant to drought; evergreen glossy foliage; quite hardy here."

**43234.** OREOPANAX NYMPHAEIFOLIUM Hort. Araliaceæ.

"Splendid large bush or tree with very large, glossy leaves; quite hardy here."

**43235.** PODACHAENIUM EMINENS (Lag.) Schultz Bip. Asteraceæ.  
(*P. paniculatum* Benth.)

"Very quick growing. Becomes in a few years a small tree; large evergreen leaves; large panicles of white flowers. Naturalized in my garden."

**43236.** SEMELE ANDROGYNA (L.) Kunth. Convallariaceæ.

"A very beautiful climber; splendid foliage; red ornamental berries; evergreen; hardy here; reaches 15 meters in length."

**43237. CARICA PAPAYA L. Papayaceæ.****Papaya.**

From the city of Guatemala, Guatemala. Presented by Mr. D. O'Brien. Received September 1, 1916.

"The tree grows well at an altitude of 1,000 to 3,000 feet in these countries, but we have no frost within the height specified. The fruit is delicate and bruises easily. The trees grow best in arid regions where there is very little rainfall. They grow wild, none having been cultivated. The fruit contains pepsin, which I believe could be extracted for medicinal purposes. Fruit could be placed on the market when other fruits are not in season, say during the months of November to January." (*O'Brien.*)

**43238. BUTIA CAPITATA PULPOSA (Barb.-Rodr.) Becc. Phœnicaceæ.****Palm.**

From Fruitland Park, Fla. Presented by Mr. Louis Bosanquet. Received August 28, 1916.

"The *Entre Rios* palm, the most massive of all the species, almost rivaling in this respect the Canary Island date, though the leaves are much shorter. In mature specimens the trunk is about 30 feet high. I have a few fine photographs of these palms, said to have been taken by Dr. G. Niederlein in the Misiones, Argentina, which exhibit quite large dense forests of tall specimens growing in rather rocky and stony soil. I have only one specimen now, about 15 feet high with a very thick and massive trunk about 7 feet high. Ferns (*Phlebodium aureum*) grow all around it in dense masses and form a beautiful decoration on the rough stem, which is still provided with the old leaf bases. The magnificent crown of stout, almost upright leaves, overtopping the sturdy trunk, makes the specimen an exceedingly stately one. Each year it matures about eight to nine fruit bunches, weighing from 35 to 50 pounds each. Each fruit, of a light orange color, is as large as a plum, very rich in sugar, juicy, intensely fragrant, like a combination of banana and pineapple, and edible. The fruits are as closely set as a bunch of grapes. I have counted over 1,000 in one cluster. The large divided flower scape is inclosed in a very massive spathe of the size and form of a baseball club, or, as a visitor expressed himself, of a 'huge Hercules club.' Excellent wine, jam, and jelly can be made of the

fruits. The tree grows freely in rich, dry pine-land soil and, like all the other species of this group, it does not seem to require much attention. To Mr. Theo. L. Mead belongs the credit of having introduced this palm into cultivation, but I think his specimens on rich moist land all have perished. It is perfectly hardy and should be grown everywhere in the State and all along the Gulf coast where the soil is suitable." (*H. Nehrling, Transactions of the Florida State Horticultural Society, vol. 22, p. 156 (1909), under Cocos datil.*)

### 43239 to 43242.

From Burringbar, New South Wales, Australia. Presented by Mr. B. Harrison. Received August 30, 1916.

**43239.** CHAETOCHLOA NIGRIROSTRIS (Nees) Skeels. Poaceæ. Grass.  
(*Setaria nigrirostris* Dur. and Schinz.)

A hardy tufted grass which has made good growth. Although the leaves are a little hard, there is a very large quantity in proportion to the stem; the grass appears to be a quick succulent grower, carries a good quantity of seed, and grows well in New South Wales. (Adapted from *E. Breakwell, Agricultural Gazette, New South Wales, Feb. 2, 1916.*)

**43240.** BRACHIARIA BRIZANTHA (Hochst.) Stapf. Poaceæ. Grass.  
(*Panicum brizanthum* Hochst.)

"This grass is a native of the Transvaal bush veldt. Capt. W. H. F. Hughes, of Zeerust, writes that it grows well on the poorest sandy soil and that cattle are very fond of it. The only previous record we have of its value as a pasture grass is a note from a farmer near Salisbury, Rhodesia, stating that it is eaten by cattle there. We have no record of any vernacular name by which this grass is known." (*J. Burt Davy, Agricultural Journal, Union of South Africa, vol. 1, No. 5, p. 706, June, 1911.*)

**43241.** PENNISETUM PURPUREUM Schum. Poaceæ. Grass.

"The great value of prolific and drought-resistant fodder plants, which are generally very difficult to procure, is well known to stock owners, and the above variety, which as yet is but little known, can be most highly commended for both of these qualities. With me last season, which was a very dry one and which was a most disastrous one for stock, this grass grew to the height of nearly 11 feet and produced a large quantity of succulent, nutritious, and fattening fodder, which is greatly relished by the stock and is, according to analysis, much richer than green maize. A reliable official says: 'There is a consensus of opinion that in this plant we have found a fodder of great value, which remains green even during such long periods as from six to eight months when other herbage is parched up or destroyed.' It grows rapidly to a height of 12 feet or more in favorable weather, thrives well in various soils, and resists both frost and drought to a remarkable extent. At 7 feet high it has produced 12 tons of green fodder per acre, and a few months later 15 tons, making a total yield of 27 tons per acre. It is everlasting when once established, and the tufts or stems increase in size after each cutting or when grazed off. It should prove of untold value to farmers in South Africa, who suffer much loss through frequent and protracted droughts, in the East Indies, and in other countries where a light rainfall and semiarid conditions prevail. As a prolific and drought-resistant plant it promises to prove one of the very best brought into cultivation." (*Harrison.*)

**43239 to 43242—Continued.**

**43242.** *SPOROBOLUS INDICUS* (L.) R. Br. Poaceæ.

**Grass.**

A fine, open pasture grass, found through Australia, variously called *rat-tail* grass, *Chilcan* grass, and, by the aborigines, *jil-crow-a-berry*. Its numerous penetrating roots enable it to resist severe drought. It yields a fair amount of fodder, is relished by stock, but is too coarse for sheep; the seeds form the principal food of many small birds. It has been suggested as a paper-making material. (Adapted from *Maiden, Useful Native Plants of Australia*, p. 109.)

**43243.** *CAPPARIS MICRACANTHA* DC. Capparidaceæ.

From Manila, Philippine Islands. Presented by Mr. Adn. Hernandez, Director of Agriculture. Received September 6, 1916.

“Seeds of a native fruit known locally as *Cambagat*. This fruit is about the size of a plum, bright red in color, and has an exceedingly fine flavor, somewhat similar to a guava.” (*Hernandez*.)

**43244 to 43252.** *TRITICUM* spp. Poaceæ.

**Wheat.**

From Athens, Greece. Presented by the director of the Royal Agricultural Society. Received September 1, 1916.

**43244.** *TRITICUM MONOCOCCUM* L.

Var. *Trimini* (Greek). Spring wheat.

**43245 to 43249.** *TRITICUM DURUM* Desf.

**43245.** Var. *Mavraani* (Greek). Thessaly wheat.

**43246.** Var. *Rapsani* (Greek). Thessaly wheat.

**43247.** Var. *Deves* (Greek). Humidity-resisting Thessaly wheat.

**43248.** Var. *Deves* (Greek). Thessaly wheat.

**43249.** Var. *Deves* (Greek). Thessaly wheat of the plains.

**43250 and 43251.** *TRITICUM AESTIVUM* L.

(*Triticum vulgare* Vill.)

**43250.** Thessaly wheat of mountainous regions.

**43251.** Var. *Lapsista*. Macedonia wheat.

**43252.** *TRITICUM DURUM* Desf.

Var. *Contoarnaouti* (Greek). Thessaly wheat.

**43253 to 43257.**

From Colombia. Seeds collected by Mr. H. M. Curran. Received June 24, 1916. Numbered September 11, 1916. Quoted notes by Mr. Curran except as otherwise indicated.

**43253.** *ANNONA MARCGRAVII* Mart. Annonaceæ.

“Probably seed of large-fruited anona.”

A tree with the trunk, form of the branches, and color of the bark resembling those of an orange, but with different leaves, flowers, and fruit. Its leaves are about 6 inches long, deep green and glossy above, pale green beneath, and tongue shaped. The entirely yellow flower is large and conspicuous, has a sickening sweet odor, and is deciduous. It is followed by the fruit, which ripens in December and January. This fruit, which is conoid in shape and about 5 inches in its greatest diam-

## 43253 to 43257—Continued.

eter, is green and white mixed or pale green on the outside, and the surface is areoled, with a brown tubercle on each areola. Not until the fruit falls of its own accord is it eaten, and then it is soft, so that it can be peeled with the fingers. The yellowish pulp has an odor like fermented bread dough to which honey has been added, with a sweetish subacid and somewhat bitter taste. The seeds are oval, golden yellow, glossy, smooth, and hard. This tree is a native of Brazil and Venezuela. (Adapted from *Safford, Contributions from the National Herbarium, vol. 18, pt. 1, pp. 25 to 28*, and from *Piso and Marcgrave's description of araticú ponhê, in 1648*.)

43254. CASSIA sp. Cæsalpiniaceæ.

"Ornamental yellow-flowered shrub in low lands. San Martin de Loba, April 16, 1916."

43255. GEONOMA sp. Phœnicaceæ.

Palm.

"*Cecilia* palm. Low, very ornamental, Tierras de Loba, Bolivar."

43256 and 43257. MALVAISCUS sp. Malvaceæ.

43256. "Low annual, with red flowers, very ornamental, Tierras de Loba, Bolivar. Cultivated also in the Philippine Islands."

43257. "Ornamental, Tierras de Loba."

43258. ACTINIDIA CHINENSIS Planch. Dilleniaceæ. Yang-tao.

Plants grown from cuttings sent to the Plant Introduction Field Station, Chico, Calif., by Mr. D. W. Coolidge, Pasadena, and grafted on seedlings of S. P. I. No. 21781. Numbered for convenience in recording distribution.

"The *yang-tao*, a deciduous climber native to Szechwan Province, China, has attracted considerable attention because of the high quality of its fruits and the ornamental value of the plant. The leaves have a plushlike texture and an unusual dark-green color, while their regular spacing and their large size add to the beauty of the vine. The flowers are buff yellow to white, fragrant, often  $1\frac{1}{2}$  inches across, and are produced in great abundance. The fruits are ovoid to globose and about 2 inches long. The outside is russet brown and is clothed with villous hairs. The flesh is green, of most excellent flavor, resembling that of a gooseberry, but tempered with a flavor peculiarly its own. The fruit is excellent when fresh and also makes very fine jam and sauce." (*Fairchild*.)

43259. CORDIA sp. Boraginaceæ.

From Guayaquil, Ecuador. Presented by Mr. Frederick W. Goding, American consul general. Received September 5, 1916.

43260. CORDEAUXIA EDULIS Hemsl. Cæsalpiniaceæ. Yeheb nut.

From Aden, Arabia. Presented by Mr. A. G. Watson, American vice consul, who obtained the nuts from the Acting Governor of Italian Somaliland at Mogadiscio. Numbered September 12, 1916.

The yeheb is a tree or shrub which has recently been discovered in Italian Somaliland, East Africa. Its seeds, called nuts, have a high food value, containing 21 per cent of cane sugar, 2 per cent of reducing sugars, 13 per cent of proteids, and 37 per cent of carbohydrates. They form an article of commerce and are brought to the coast by caravans and are eaten by the native *Dolbahanta* Somalis in preference to rice and dates. Though the climate of Somali-

land is not well known, the indications are that where this plant grows, long periods of drought occur, but rains are abundant and regular at certain seasons of the year. Winter temperatures probably do not go below freezing. The plant quickly forms a long taproot, bears when only 4 feet high, has evergreen leaves, which if crushed stain the fingers a magenta color, and grows into a large tree. From the investigations which have been made by the Kew Botanic Gardens the indications are that this plant is worthy of a thorough trial in the arid Southwest, at first in the practically frostless areas, and a special effort is being made to get a large enough quantity of the seeds for an extensive experiment. (See *Kew Bulletin*, 1908, pp. 36-44, 141.)

### 43261 and 43262.

From Lawang, Java. Presented by Mr. M. Buysman. Received September 6, 1916.

**43261.** *CARICA PAPAYA* L. Papayacæ. **Papaya.**

"Seeds of a very large papaya fruit, measuring 40 cm. in length and 16 cm. in diameter; the natives say there are fruits of 50 cm., but I have never seen them." (*Buysman.*)

**43262.** *MEIBOMIA GYRANS* (L. f.) Kuntze. Fabacæ. **Telegraph plant.**  
(*Desmodium gyrans* DC.)

"Flowers and fructifies here as if it were indigenous." (*Buysman.*)

An erect, short-lived woody plant known as gorachand, native of moist districts, such as northern Bengal. In moist weather, when the sap is active, a jerky motion of the leaflets, like that of a semaphore, is observed. It is propagated by seed, which should be sown at the beginning of the rainy season and watered when dry. (Adapted from *Woodrow, Gardening in the Tropics*, p. 247.)

"Because of its remarkably sensitive stipules, which gyrate, it has become one of the most valuable of plants for plant physiological investigations. Those of Dr. Chundu Bose are among the most instructive. It can be grown out of doors in the summer in Washington." (*Fairchild.*)

Mentioned as a fodder plant in *Macmillan, Handbook of Tropical Gardening and Planting*, p. 591,

### 43263 to 43268.

From Manila, Philippine Islands. Presented by Mr. Adn. Hernandez, Director of Agriculture. Received September 1, 1916.

**43263.** *ANNONA CHERIMOLA* × *SQUAMOSA*. Annonacæ. **Atemoya.**

Plants very similar in appearance to the cherimoya; the fruit is small, about 10 ounces in weight, yellowish green, with very thick, tough skin and white tender flesh, juicy, subacid. It has four to seven seeds, darker colored than those of the cherimoya. (Adapted from *Wester, Philippine Agricultural Review*, p. 71, Feb., 1914.)

**43264.** *ANNONA GLABRA* L. Annonacæ. **Pond-apple.**

"Known as *Anona* in Mexico; *Cachiman creme* in the French West Indies; *pond-apple* in Florida and the West Indies. Vigorous tree, up to 30 feet in height, the trunk 2 feet in diameter. Leaves ovate-lanceolate, deep green above, pale green beneath, glabrous, persistent. Fruit ovate-conical in shape, 2½ inches long; skin yellowish, sometimes reddish; seeds conical, few. Pulp of a buttery consistency, very sweet, sometimes cloying. Prof. Foex says this is the commonest fruit on the Mexican market (Mexico City) with the exception of the cherimoya. It is not highly



**43263 to 43268—Continued.**

valued in Florida and is not as hardy as the cherimoya." (W. Popenoe, *Journal of Economic Botany, Pomona College, 1912, p. 296.*)

**43265. ANNONA MONTANA** Macfad. Annonaceæ.

"Native of Porto Rico and other islands of the West Indies. A small tree, bearing a subglobose, muricate fruit of little value. Introduced into Florida by the Bureau of Plant Industry for trial as a stock for other Annonas." (W. Popenoe, *Journal of Economic Botany, Pomona College, 1912, pp. 296 and 297.*)

"Tree 15 meters high, leaves dark green and very glossy, as though varnished, flowers like those of *Annona muricata*, fruit subglobose, about the size of an orange, pulp white at first, turning yellowish when ripe, seeds yellow or tan colored. Along streams in the mountains usually, but sometimes at sea level." (Safford, *Contributions from the National Herbarium, vol. 18, p. 22, 1914.*)

**43266. TRICHOSANTHES QUINQUANGULATA** A. Gray. Cucurbitaceæ.

An extensively climbing vine with a smooth-angled stem and 5-lobed membranaceous leaves. The flowers occur in racemes. The native habitat of this plant is in the Mangsi Islands, in the Sulu Sea. (Adapted from Gray, *Botany U. S. Exploring Expedition, vol. 1, p. 645.*)

**43267. UVARIA RUFA** (Dunal) Blume. Annonaceæ. **Banauac.**

The fruits of this plant, which is also known as *Susong calabao*, occur in bunches of 18 to 20, are kidney shaped, bright red, and pubescent, with a thin brittle skin and scant, whitish, juicy subacid flesh and many seeds. Ripens in September. (Adapted from P. J. Wester, *Philippine Agricultural Review, vol. 6, no. 7, July, 1913.*)

**43268. VERNONIA VIDALII** Merr. Asteraceæ. **Malasambon.**  
(*V. arborca vestita* Vidal.)

A small tree, 8 to 10 meters high, with the pale-purple inflorescence and the lower surface of the leaves covered with short hairs which under the lens appear pale yellowish white and very dense. Found in the district of Morong. (Adapted from Vidal, *Revision Plantas Filipinus, p. 160.*)

**43269 to 43272.**

From Bariloche, Argentina. Presented by Dr. Joseph Vereertbrugghen. Received September 2, 1916.

**43269. CHUSQUEA QUILA** Kunth. Poaceæ. **Bamboo.**

A freely branching arborescent plant with the numerous open panicles at the joints. The leaves are distinct and scarcely half an inch wide. It is a native of Chile. (Adapted from Bailey, *Standard Cyclopedia of Horticulture, p. 449.*)

**43270. EMBOTHRIUM COCCINEUM** Forst. Proteaceæ. **Notro.**

"*Randal.* This is a beautiful tree and is giving wood that, here on the spot, is sold by the square inch. It is rather like hazelnut, perhaps nicer." (Vereertbrugghen.)

**43271. LITHRÆA MOLLEOIDES** (Vell.) Engl. Anacardiaceæ.  
(*L. aroeirinha* L. Marchand.)

An evergreen shrub, native of southern Brazil and Argentina, with a height of about 12 feet. The leaves are odd-pinnate, with five leaflets, or

**43269 to 43272—Continued.**

rarely three, and the flowers occur in panicles 2 to 3 inches long. The fruit is round, about a fifth of an inch across, and of a lustrous whiteness. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 4, p. 1894.*)

**43272.** MAYTENUS BOARIA Molina. Celastraceæ.

**Mayten.**

A handsome evergreen shrub, growing to a height of 6 feet, with very smooth, ovate-lanceolate leaves and small flowers in axils. The native country is Chile, where it is quite common, flowering in May. In England it succeeds best trained to the front of the south wall, but survives the winter without even the slightest protection. Perfectly hardy in California as far north as San Francisco and highly valued for ornamental planting; recommended for street and avenue planting; timber exceedingly hard. It is propagated readily from seeds or from suckers. (Adapted from *Edwards's Botanical Register, vol. 20, pl. 1702*, and *Bailey, Standard Cyclopedia of Horticulture, vol. 4, p. 2017.*)

**43273 to 43280. CICER ARIETINUM L. Fabaceæ.**

**Chick-pea.**

From Seville, Spain. Presented by Mr. Wilbur T. Gracey, American consul, who secured the seeds from Mr. Juan Mateo Gimenez. Received September 1, 1916.

"Chick-peas, or, as they are called in Spain, *garbanzos*, are one of the principal food products of that country, and may be said to be the staple food of the poorer classes. The plant, *Cicer arietinum*, is a species of the bean family largely grown around the Mediterranean regions and in central Asia. The seed, which is considerably larger than a pea, is encased in short, thick, hairy pods, and forms, when roasted, the parched pulse of the East, and for this reason is sometimes known as the *Egyptian pea*. Chick-peas seem to thrive best in more or less arid regions, and for that reason the soil in the Seville consular district seems to be particularly suitable, owing to the intense heat and dryness of the summer months, and this district, which comprises the Provinces of Seville, Cordoba, Cadiz, Huelva, Badajoz, and Caçeres, produces over half of the chick-peas grown in Spain. In that territory the sowing is generally done in the month of March, and the crops are usually collected when the plants are perfectly dry, at the beginning of August. It is said, however, that this practice is not to be recommended, as chick-peas which dry in the pods before being cut become exceptionally hard and are difficult to cook, as is not the case if they are collected when the plants become somewhat yellow, before they are absolutely dry, and then are piled in small heaps and left to dry in a granary or well-aired room." (*Gracey.*)

**43273.** White, hard, from 50 to 52 peas in 30 grams.

**43274.** White, hard, from 70 to 75 peas in 30 grams.

**43275.** White, soft, from 50 to 52 peas in 30 grams.

**43276.** White, soft, from 60 to 65 peas in 30 grams.

**43277.** Tawny, soft, from 51 to 53 peas in 30 grams.

**43278.** Tawny, soft, from 60 to 65 peas in 30 grams.

**43279.** Tawny, soft, from 50 to 52 peas in 30 grams.

**43280.** Tawny, soft, from 60 to 65 peas in 30 grams.

For an illustration showing a few varieties of chick-peas, see Plate IV.

**43281 and 43282.**

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanical Gardens. Received August 17, 1916.

**43281.** *NANNORRHOPS RITCHIEANA* (Griffith) Wendl. Phœnicaceæ.

**Mazri palm.**

A low gregarious shrub, ascending to 5,500 feet in Baluchistan and Mekran, stemless ordinarily, but sometimes with a stem 10 to 20 feet long. The leaves are 2 to 4 feet long, grayish green in color, and are beaten with a mallet to remove the fiber, which is used in making mats, baskets, etc. The fruit is a nearly round 1-seeded drupe. The flowers, leaf buds, and fruits are eaten by the natives, and the seeds are made into rosaries. The reddish brown wool of the petioles is impregnated with saltpeter and used as a tinder for matchlocks, and the whole plant when dried is used for fuel in arid regions. In Europe it grows best in a compost of sandy loam, with good drainage, and is propagated by seeds and offsets. An unheated greenhouse is better than a hothouse. (Adapted from *E. Blatter, Journ. Bombay Nat. Hist. Soc., vol. 21, pp. 72 to 76.*)

**43282.** *PROSOPIS SPICIGERA* L. Mimosaceæ.

A deciduous thorny tree, found in the arid zones of the Punjab, Sind, Dekkan, etc. It is easily raised from seed and coppices well. The tap-root is enormously long, in one specimen measuring 86 feet. From the stump of the pruned branches and other scars a gum exudes, similar to gum arabic, which, although worthy of investigation, has not hitherto been used. The bark of the tree is used for tanning. The pods are sometimes used for medicinal purposes, but more often are employed as fodder, and in some localities the poorer classes eat the bark. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 6, pt. 1, pp. 340 and 341.*)

**43283.** *ROSA RUBUS* Lev. and Van. Rosaceæ.

**Rose.**

From Cheshunt, Hertfordshire, England. Plants purchased from Messrs. Paul & Son. Received September 13, 1916.

Wilson No. 666a.

A tall, climbing musk rose, up to 6 meters in height, common everywhere in western Hupeh and eastern Szechwan, China, with densely hairy shoots and leaves and large coarsely dentate leaflets, resembling those of certain species of *Rubus*. The fruit is dull red or dark scarlet, globose, and the peduncles are relatively long and stout. The plant grows up to 1,800 meters altitude. It was first described as *Rosa moschata hupehensis* Pampanini. (Adapted from *Sargent, Plantae Wilsonianae, vol. 2, pt. 2, pp. 308 and 309.*)

**43284.** *LITCHI CHINENSIS* Sonner. Sapindaceæ.

**Litchi.**

(*Nephelium litchi* Cambess.)

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College, through Mr. Lau Tai Chi. Received September 5, 1916.

*Wai chi* variety.

**43285.** *GARCINIA MANGOSTANA* L. Clusiaceæ.

**Mangosteen.**

From Singapore, Straits Settlements. Presented by Mr. J. I. Anderson, Director, Botanic Gardens. Received September 12, 1916.

One of the most delicious fruits of the Tropics. The handsome tree is 25 to 30 feet in height, of compact growth, regular in outline, and with dark-green foliage. It comes into bearing at about the ninth year. The rose-pink flowers

are 1½ inches across, and there are two blooming periods each year. The round fruits, about the size of a mandarin orange, are borne from buds produced near the tips of short branches, mainly on the outside of the tree. The rind is thick and the flesh divided into segments much like the orange. The texture resembles a well-ripened plum, and the taste is delicious. In the East Indies it is planted by the natives as a dooryard tree. It is very hard to establish the young trees, which accounts for the small plantings which have been made. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 4, pp. 1889 and 1890.*)

**43286. CANAVALI OBTUSIFOLIUM (Lam.) DC. Fabaceæ.**

From Durban, Natal, Union of South Africa. Presented by Mr. P. van de Bijl, mycologist, Natal Herbarium. Received September 12, 1916.

A creeping perennial bean, called *palang-palang*, *akan-kan-tasi*, etc., with trifoliate leaves, and bright pink (sometimes white) flowers. The pods are oblong with a few chestnut-colored seeds, which, according to Maiden, are eaten after cooking by natives of Australia. This vine is widely distributed on tropical shores and is useful as a binder for loose sand. (Adapted from *Safford, Useful Plants of Guam, p. 211.*)

**43287 and 43288.**

From Darjiling, India. Presented by Mr. G. H. Cave, Lloyd Botanic Garden. Received September 11, 1916.

**43287. DENDROCALAMUS HAMILTONII Nees and Arn. Poaceæ. Bamboo.**

"A tall, freely growing bamboo. Used for building, water pipes, and other purposes locally." (*Cave.*)

This bamboo abounds at about 4,000 feet in the Himalayas, where it attains a height of 40 to 80 feet, with grayish white culms which are naked below and much branched above and which become dull green when old. The culm sheaths are long and stiff, up to 18 inches long on the lower part of large stems, are glabrous and shining within and rough and with scanty patches of brown, stiff hairs or glabrous without. The leaves are variable, up to 15 inches long, and the inflorescence is a huge, much-branched panicle. From this bamboo baskets and mats are made, and the young shoots are eaten as a vegetable. The plant is conspicuous for its bright purple-red flowers. (Adapted from *Gamble, Bambusæ of British India, pp. 85 and 86.*)

**43288. TOONA CILIATA Roemer. Meliaceæ.**

**Toon tree.**

(*Cedrela toona* Roxb.)

A large, rapidly growing deciduous tree, 50 to 80 feet high and sometimes 20 feet in diameter, growing chiefly near streams in tropical Himalayan regions; also at low altitudes in western and southern India. The wood obtained from this important timber tree is not eaten by white ants, is durable, and is not liable to warp. It is used for furniture, carvings, and cigar and tea boxes. The bark is used as a tonic, and the flowers are a source of red and yellow dye. The seeds, young shoots, and leaves are given to cattle as fodder. (Adapted from *Watt, Commercial Products of India, p. 290.*)

**43289 to 43291. AMYGDALUS PERSICA L. Amygdalaceæ. Peach.**  
(*Prunus persica* Stokes.)

From Canton, China. Presented by Mr. P. H. Josselyn, American vice consul in charge. Received September 15, 1916.

"Chinese peach trees are grown for the most part in the northern Provinces, where the climate is cold. Those grown in Kwangtung Province are inferior in size, color, and flavor to those grown farther north. There are three species of peaches cultivated in this Province—viz, the sweet, the sour, and the bitter." (*F. D. Cheshire, American consul.*)

**43289.** "*Ying tsui t'ao (eagle's beak peach).* Very sweet, with a point resembling the beak of the eagle and having a hairy coat. It is grown mostly at Sunchuen, in the Panyu district; Pontang, in the Nanhai district; and also in the Fayun, Sanshui, and Tungkun districts." (*Josselyn.*)

**43290.** "*Ha mi t'ao (honey-flavored peach).* Very sweet, slightly round in shape; came originally from Manchuria. This peach is grown for the most part at Fati and Tungka and some other points in the Panyu district." (*Josselyn.*)

**43291.** "*Suan t'ao (sour peach).* Grown at various places in Canton, mostly in the hilly districts. Some are imported to Canton from the Shuikwan and Shuitung districts." (*Josselyn.*)

#### **43292.** *FICUS HOOKERI* Miquel. *Moraceæ.*

From Darjiling, India. Presented by Mr. G. H. Cave, Lloyd Botanic Garden, at the request of the superintendent of the Royal Botanic Garden, Sibpur, near Calcutta. Received September 15, 1916.

An entirely glabrous tree, with thinly coriaceous oval leaves up to 11 inches in length, and axillary, depressed, obovate fruits growing in pairs up to 1 inch in diameter when ripe. The fig is not common and ascends to 6,000 feet in Sikkim, the Himalaya Mountains, and the Khasi Hills, India. (Adapted from *King, Annals, Royal Botanic Garden, Calcutta, vol. 1, p. 36.*)

#### **43293 to 43298.**

From Bogota, Colombia. Presented by Mr. Jorge Ancizar. Received September 16, 1916.

**43293.** *ANNONA CHERIMOLA* Mill. *Annonaceæ.* **Cherimoya.**

"The principal fruit cultivated by the aboriginal inhabitants of western South America. Endemic in the Andes, and subtropical rather than tropical in its natural habitat. Fruit with an abundance of slightly acidulous pulp with a flavor somewhat like that of a pineapple. Recommended for planting in southern California in the foothills near the coast." (*Safford.*)

**43294.** *CARICA CANDAMARCENSIS* Hook. f. *Papayaceæ.*

"From cold climate." (*Ancizar.*)

"Mountain papaw. A small semiherbaceous tree with a crown of large coarse palmate leaves, native of Colombia and Ecuador, similar to the papaw of the low country, but with fruit only about one-fourth or one-sixth the size of that of the latter. It was introduced at Hakgala Gardens, Ceylon, in 1880, and is now commonly grown in hill gardens for the sake of its fruit, being often found in a seminaturalized state about up-country bungalows. The ovoid angular fruit is in season all the year round; though too acid to be used for dessert, it is very agreeable when stewed, and it can also be made into jam and preserves. When ripe the fruit has a pleasant applelike odor. Propagated by seed." (*Macmillan, Handbook of Tropical Gardening and Planting, p. 191.*)

## 43293 to 43298—Continued.

43295. *CARICA PAPAYA* L. Papayaceæ. **Papaya.**

“From hot climate.” (*Ancizar.*)

See S. P. I. Nos. 41147 and 43237 for previous introductions and description.

43296. *CARYOPHYLLUS JAMBOS* (L.) Stokes. Myrtaceæ. **Rose-apple.**  
(*Eugenia jambos* L.)

*Pomarrosa.*

“This fruit, if properly candied, is one of the finest for the purpose. The rose odor and flavor are remarkably pronounced, and it certainly deserves attention.” (*Fairchild.*)

The rose-apple is a medium-sized tree, native of India. It is cultivated in southern Florida.

43297. *PASSIFLORA LIGULARIS* Juss. Passifloraceæ. **Sweet granadilla.**

“An egg-shaped fruit with parchmentlike shell filled with an abundance of sweet juice and many small seeds. Used in tropical America for making sherbets and ices, alone or with the addition of lemon juice or spices. Of easy culture in all the warm localities, growing in the form of a vine from trellises and arbors and desirable not only for its fruit but for its beautiful flowers.” (*Safford.*)

43298. *PASSIFLORA MALIFORMIS* L. Passifloraceæ. **Granadilla.**

“*Curubá.* Fruit defined spheroid, hard shelled. Suitable for packing. Pulp of fine flavor, used for making sherbets. The flowers are beautiful, variegated, and sweet scented, red and white, with blue corona filaments; involucre composed of three ovate-acute bracts joined at the base, larger than the flower itself. The shell of the fruit is sometimes so hard that it must be broken with a hammer. The inclosed pulp has a pleasant grapelike flavor and is used in making cooling drinks and sherbets.” (*Safford.*)

43299 and 43300. *JUNIPERUS CEDRUS* Webb. Pinaceæ. **Juniper.**

From Teneriffe, Canary Islands. Presented by Dr. George V. Perez. Received September 15, 1916. Quoted notes by Dr. Perez.

43299. “A very small one from our island of Palma.”

43300. “A very large one from Teneriffe.”

## 43301 to 43329.

From Russia. Presented by Mr. W. P. Kotchetkov, Russian Government Agricultural Agency, St. Louis, Mo. Received September 13, 1916. Quoted notes by Mr. Kotchetkov.

43301. *AMELANCHIER ROTUNDIFOLIA* (Lam.) Dum.-Cours. Malaceæ.  
(*Amelanchier vulgaris* Moench.) **Service berry.**

“From Tiflis Botanical Garden.”

A low tree or shrub, 15 to 20 feet high, with roundish oval leaves which are very downy and pure white beneath when young, becoming nearly or quite smooth at maturity. The few large white flowers, often 1½ inches in diameter, are borne in erect racemes. The fruit is first red, then black, covered with a purplish bloom, and about the size of a black currant. It is edible, but not very palatable. This plant is native in the mountains of central and southern Europe and has been in cultivation for more than 200 years. It has the largest individual flowers of any

## 43301 to 43329—Continued.

of the cultivated amelanchiers and is very beautiful in late April or May. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 190.*)

**43302 and 43303.** AMYGDALUS FENZLIANA (Fritsch) Korsh. Amygdalacæ.  
(*Prunus fenzliana* Fritsch.)

“From Tiflis Botanical Garden.”

A shrublike tree, with long purplish branches and narrowly ovate leaves. The reddish flowers appear before the leaves in few-flowered clusters and are smaller than those of *Amygdalus communis*. The peachlike fruit appears on the usually leafless twigs of the previous season's growth, and the flesh is relatively dry. (Adapted from *Fritsch, Sitzungsberichte Akademie Wissenschaften Wien, vol. 101, pp. 632 to 636.*)

**43302.** The ordinary form.

**43303.** Selected form, with larger fruits.

**43304.** LAUROCERASUS OFFICINALIS Roemer. Amygdalacæ.

(*Prunus laurocerasus* L.)

Cherry laurel.

“From Tiflis Botanical Garden.”

An evergreen shrub of quick growth and wide-spreading habit, over 20 feet in height and twice as much in width, entirely devoid of hairs or down. The young shoots are pale green and the leaves are leathery, dark shining green, of various shapes and sizes up to 6 inches long; each bears two or more glands on its lower surface near the base. The dull white flowers are borne in terminal and axillary racemes and the conical fruits are purplish black, about half an inch long, with conical stones. This plant is a native of eastern Europe and Asia Minor and was introduced in 1629, according to Aiton. It flowers in April, but is not as hardy as the Portugal laurel and is not adapted for planting in ordinary shrubberies. It is admirable for planting as undergrowth in thin woodland. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 240.*)

**43305.** PRUNUS AVIUM L. Amygdalacæ.

Mazzard cherry.

“From Tiflis Botanical Garden.”

A deciduous tree up to 60 feet or more in height, with a trunk sometimes 2 feet and more in thickness and shining bark, which peels horizontally. The young twigs are smooth and the oval leaves are 3 to 5 inches long. The pure white flowers, about 1 inch across, appear in stalkless clusters from the previous year's shoots and from spurlike branches of earlier date. The round, blackish red fruit is about three-fourths of an inch in diameter and is sweet or bitter, but not acid. This tree is a native of Europe, including England, and is one of the parents of the cultivated fruiting cherries, especially the black ones. It should not be confused with *Prunus cerasus* and *P. acida*, from which it differs in being larger, having more coarsely toothed leaves and a fruit which is not acid. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, pp. 229 and 230.*)

**43306.** PRUNUS CERASIFERA DIVARICATA (Ledeb.) C. Schneid. Amygdalacæ.

(*Prunus divaricata* Ledeb.)

Persian cherry-plum.

“From Tiflis Botanical Garden.”

A deciduous round-headed tree up to 30 feet in height, with serrate leaves  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches long and pure white flowers, often in dense clusters.

## 43301 to 43329—Continued.

This differs from the true species in having smaller and yellow fruit which is not indented at the stalk. It is said to be a native of the Caucasus, Persia, Macedonia, etc., and was introduced in 1822. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 235.*)

**43307. PRUNUS MAHALEB L. Amygdalaceæ. Mahaleb cherry.**

“From Tiflis Botanical Garden.”

A free-growing, deciduous tree up to 30 or 40 feet in height, with a loose, spreading head of branches and the young twigs downy. The glossy green leaves are broadly ovate or roundish, more or less hairy on each side of the midribs, and are 1 to 2½ inches long. The pure white, very fragrant flowers occur to the number of 6 to 10 in racemes. The somewhat egg-shaped, black fruit is about one-fourth of an inch long. This plant, native of central and southern Europe, was introduced in 1714. It flowers in late April and early May, is fast growing, and thrives well in the sandy soil of Kew. It may be propagated by cuttings made of moderately firm young wood and placed in gentle bottom heat; also by layering. The type raised from seed is used as a stock for grafting cherries. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 242.*)

**43308. PRUNUS MICROCARPA Meyer. Amygdalaceæ. Syrian cherry.**

“From Tiflis Botanical Garden.”

A deciduous bush, 3 or 4 feet high, with stiff short-jointed branches and downy branchlets. The coarsely serrate, broadly ovate pointed leaves are one-half to 1 inch long, and the rosy pink flowers are produced in clusters of two or three from buds and spurs of older branches. The red or yellow fruit is ovate and nearly half an inch in length. This bush is a native of Asia Minor and in 1890 was introduced into Kew, where it requires the sunniest position possible. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 243.*)

**43309. PRUNUS PROSTRATA Labill. Amygdalaceæ. Mountain cherry.**

“From Tiflis Botanical Garden.”

A deciduous shrub, 2 to 3 feet high, with a low, spreading habit and much wider than high. The slender branches are arched, and the twigs are covered with a minute dark down. The pointed, ovate or obovate, sharply serrate leaves are from 1 to 1½ inches long and downy beneath. The bright rose-colored flowers appear singly or in pairs, and the almost stalkless fruit is red and about one-third of an inch long. This shrub is native in the mountains of the Levant and was introduced into Kew in 1802. It needs a sunny position. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, pp. 248 and 249.*)

**43310. PRUNUS SPINOSA L. Amygdalaceæ. Sloe.**

“From Tiflis Botanical Garden.”

A deciduous, suckering shrub, 10 or 15 feet in height, or in gardens a small tree, with the bark of the young shoots downy and many of the short branches terminated by a spine. The ovate, serrate leaves are sometimes nearly 2 inches long, are downy beneath, sometimes becoming glabrous with age. The pure white flowers appear in March or April, usually singly on the naked wood, and the round fruit, which is half an inch in diameter, is at first blue, then black, and very harsh to the taste. The sloe is native in England and other parts of Europe, as well as in northern Asia. Its slow growth makes it suitable for small gardens.



## 43301 to 43329—Continued.

The wood is very hard and is prized in rural districts for making hay-rake teeth. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, pp. 253 and 254.*)

- 43311 and 43312. *AVENA SATIVA* L. Poaceæ. Oats.  
 43311. "Local. From the Kazatchin Experiment Field of the Yenisei Government, Siberia."  
 43312. "No. 353. Local variety, supposed to be rustproof. From the Tulun Experiment Field, Government of Irkutsk, Siberia."
- 43313 and 43314. *HORDEUM* spp. Poaceæ. Barley.  
 43313. *HORDEUM VULGARE PALLIDUM* Seringe.  
 "Petchora barley. From the Petchora Experiment Station, Ust-Tsilma, Government of Archangelsk, Russia."  
 43314. *HORDEUM NODOSUM* L.  
 (*Hordeum secalinum* Schreb.)  
 "In district of Novo-Uzensk on alkali soils. From the Krasnokut Experiment Station, Samara, Russia."
- 43315 to 43318. *SECALE CEREALE* L. Poaceæ. Rye.  
 43315. "Local spring rye. From the Kazatchin Experiment Field of the Yenisei Government, Siberia."  
 43316. "Local winter rye. From the Kazatchin Experiment Field of the Yenisei Government, Siberia."  
 43317. "No. 63. Winter rye. Of local forms, well resisting frost and the excess of moisture in the spring. From the Tulun Experiment Field, Government of Irkutsk, Siberia."  
 43318. "No. 73. Winter rye. Of local forms, well resisting frost and the excess of moisture in the spring. From the Tulun Experiment Field, Government of Irkutsk, Siberia."
- 43319 to 43327. *TRITICUM AESTIVUM* L. Poaceæ. Wheat.  
 (*Triticum vulgare* Vill.)  
 43319 to 43321. "From the Kazatchin Experiment Field of the Yenisei Government, Siberia."  
 43319. "*Arnautka*, local spring wheat."  
 43320. "*Minusinka*, spring wheat."  
 43321. "*Sibirka*, spring wheat."  
 43322 to 43327. "From the Tulun Experiment Field, Government of Irkutsk, Siberia."  
 43322. "No. 22-A. Spring wheat. A representative of the mass selection of local, early, small-seed wheat, supposed to be interesting as material for hybridization for securing early forms."  
 43323. "No. 31-B. Spring wheat, of interest in hybridization work, the same as No. 22-A [S. P. I. No. 43322]."  
 43324. "No. 48. Spring wheat, of interest in hybridization work, the same as No. 22-A [S. P. I. No. 43322]."  
 43325. "No. 324. Spring wheat. A representative of local red ear with large seeds."  
 43326. "No. 804. Winter wheat. Secured from peasant immigrants."  
 43327. "No. 806. Winter wheat. Secured from peasant immigrants."

**43301 to 43329—Continued.**

43328 and 43329. *ZEA MAYS* L. Poaceæ. Corn.

43328. "Local. From Tiflis Botanical Garden."

43329. "*Kutais*. From Tiflis Botanical Garden."

**43330. PASSIFLORA MALIFORMIS** L. Passifloraceæ. **Granadilla.**

From Bogota, Colombia. Presented by Mr. Jorge Ancizar. Received September 16, 1916.

See S. P. I. No. 43298 for previous introduction and description.

**43331. CANAVALI ROSEUM** (Swartz) DC. Fabaceæ.

From Kingston, Jamaica. Presented by Mr. W. Harris, Superintendent of Public Gardens. Received September 18, 1916.

"An undershrub with a creeping ascending stem and shining nearly round leaflets. The racemes are longer than the leaves, the flowers being reddish blue and subcoriaceous. The pods are oblong and shortly acuminate. The plant is found on the sandy shores of Jamaica, and was described by Swartz as *Dolichos roseus*." (*DeCandolle, Prodromus Systematis Naturalis Regni Vegetabilis, vol. 2, p. 404.*)

**43332. SCHINOPSIS LORENTZII** (Griseb.) Engl. Anacardiaceæ. **Quebracho.**

From Buenos Aires, Argentina. Presented by Sr. Benito Carrasco, director, Botanic Garden. Received September 18, 1916.

"Tree with very hard wood, unequally pinnate coriaceous compound leaves, flowers in branched panicles; fruit a samara. The products which are extracted from this tree constitute the principal resource of the inhabitants where the tree grows. It is one of the Argentine woods which if exposed to the air, buried in part or entirely, or submerged in water will keep 25 years in good condition, as is attested by experiments made by the Argentine railway with posts, beams, ties, etc. When full grown the logs are made into beams, ties, telegraph poles, etc., and exported in large quantities. The charcoal is very compact and the extract (tannin) is an important product. The sawdust is much used as an astringent." (*Carrasco.*)

**43333. ANNONA CHERIMOLA** × *SQUAMOSA*. Annonaceæ. **Atemoya.**

From Manila, Philippine Islands. Seeds presented by Mr. Adn. Hernandez, Director of Agriculture. Received September 20, 1916.

See S. P. I. No. 43263 for previous introduction and description.

**43334 to 43336. VICIA FABA** L. Fabaceæ. **Broad bean.**

From Barcelona, Spain. Procured through Mr. Harris N. Cookingham, American vice consul in charge. Received September 22, 1916.

"Upon the gathering of the new harvest, I have obtained through a local firm seeds of the horse bean most widely cultivated in Spain. These varieties are commonly produced here for forage and human consumption."

43334. "No. 1. *Mahon* horse or broad bean."

43335. "No. 2. Small *Jerez* horse or broad bean."

43336. "No. 3. *Seville* horse or broad bean."

**43337. BELOU MARMELOS (L.) LYONS. Rutaceæ. Bel.**  
(*Aegle marmelos* Correa.)

From Honolulu, Hawaii. Presented by Mr. J. E. Higgins, horticulturist, Hawaii Agricultural Experiment Station. Received September 25, 1916.  
See S. P. I. Nos. 43027 and 43028 for previous introductions and description.

**43338. DIMOCARPUS LONGAN LOUR. Sapindaceæ. Longan.**  
(*Nephelium longana* Cambess.)

From Paget East, Bermuda. Presented by Mr. E. J. Wortley, director, Bermuda Agricultural Station. Received September 27 and 29, 1916.

"The tree from which these seeds were obtained has borne very sparingly."  
(*Wortley.*)

**43339. HOVENIA DULCIS Thunb. Rhamnaceæ. Raisin tree.**

From Chungking, China. Plants presented by Mr. E. Widler. Numbered December 6, 1916.

A tree growing to a height of 40 to 60 feet, native of China, where it is cultivated for the peculiar swollen fruit peduncles, which are much esteemed by the Chinese as a delicacy. (Adapted from a note from *Frank N. Meyer, May 11, 1915.*)

See also S. P. I. No. 40718 for further description.

**43340 to 43373. TRITICUM spp. Poaceæ. Wheat.**

From Montevideo, Uruguay. Presented by Mr. L. Moreira Acosta, Laboratorio Agronomico. Received September 14, 1916.

"A collection of prize wheats of the First National Exhibit of wheats. These wheats are degenerates, but are adaptable to our climate, which has several drawbacks to the cultivation of cereals, due to their resistance and robustness. You will be able to judge our progress in the cultivation of this cereal, which has only in late years had scientific attention devoted to it by our agricultural experts who have studied in our institutes." (*Acosta.*)

**43340 to 43342. TRITICUM DURUM Desf. Poaceæ. Wheat.**

**43340.** No. 1549. Trigo de fideo.

**43341.** No. 411. Trigo de fideo.

**43342.** No. 805. Trigo de fideo.

**43343 to 43373. TRITICUM AESTIVUM L. Poaceæ. Wheat.**  
(*Triticum vulgare* Vill.)

**43343.** No. 1955. Trigo Americano. **43352.** No. 367. Trigo.

**43344.** No. 1021. Trigo. **43353.** No. 43. Trigo Pelon.

**43345.** No. 1266. Trigo. **43354.** No. 851. Trigo Pelon.

**43346.** No. 1070 or 1570. Trigo. **43355.** No. 602. Trigo Pelon.

**43347.** No. 1095. Trigo. **43356.** No. 535. Trigo Pelon.

**43348.** No. 1381. Trigo. **43357.** No. 879. Trigo Pelon.

**43349.** No. 211. Trigo. **43358.** No. 1218. Trigo Pelon.

**43350.** No. 2007. Trigo. **43359.** No. 1991. Trigo Pelon.

**43351.** No. 551. Trigo.

**43360.** "No. 1283. Trigo Pelon and Trigo Rietti." These two varieties were received under No. 1283 and the packages did not contain the varietal names mentioned in the letter.

**43340 and 43373—Continued.**

43361. No. 1487. Trigo Pelon.	43368. No. 517. Trigo Barletta.
43362. No. 1518. Trigo Pelon.	43369. No. 1036. Trigo Barletta.
43363. No. 1093. Trigo Pelon.	43370. No. 1555. Trigo Italiano.
43364. No. 545. Trigo Pelon.	43371. No. 1408. Trigo Italiano.
43365. No. 642. Trigo Pelon.	43372. No. 546. Trigo Fucense.
43366. No. 1525. Trigo Pelon.	43373. No. 1331. Trigo Gironde.
43367. No. 1410. Trigo Barletta.	

**43374. PHYTELEPHAS MICROCARPA** Ruiz and Pav. Phœnicaceæ.  
**Corozo nut.**

From Pernambuco, Brazil. Presented by Mr. A. T. Haeberle, American consul general, Rio de Janeiro. Received September 5 and 7, 1916.

This small palm is found native along the banks of streams and on springy hillsides in the Peruvian Andes at an altitude of about 3,000 feet and is closely allied to the one which furnishes the vegetable ivory or *tagua* nut of commerce (*Phytelephas macrocarpa*), although it has smaller fruits. The slender inclined stem, sometimes absent entirely, grows up to 10 feet in length, and the fruits are about the size of a child's head, resembling externally some anonas to such an extent that the Peruvians call them *anon de palma*, but the palm itself is called *yarina*. The thick furrowed rind is tough and is reddish within and may be eaten, having a flavor of melon or moldy cheese. The albumen of the unripe seeds is drunk while still watery or eaten when it becomes fleshy, resembling in taste a coconut in like state, but when quite ripe it is too hard for eating. (Adapted from *description by Richard Spruce, furnished by C. B. Doyle.*)

**43375 to 43377. CANARIUM INDICUM** Stickm. Balsameaceæ.  
(*Canarium commune* L.) **Java almond.**

From Buitenzorg, Java. Presented by Dr. J. C. Koningsberger, director, Botanic Gardens. Received September 26, 1916.

See S. P. I. No. 43024 for previous introduction and description.

**43378 and 43379.**

From Tahiti, Society Islands. Presented by Mr. Edouard Ahnne, president, Chamber of Agriculture, through Mr. Thomas B. L. Layton, American consul. Received September 25, 1916. Quoted notes by Mr. Layton.

**43378. COIX LACRYMA-JOBI** L. Poaceæ. **Job's-tears.**

"Called locally *Pocpoe*, but known elsewhere as *Job's-tears*. It was introduced into Tahiti some 30 or 40 years ago, it is said, from the West Indies. The young plants are an excellent forage for both cattle and horses, which seem to eat eagerly of the seeds while they are green and tender. It occurs in abundance in the island of Tahiti, though it is also found in much smaller quantities in nearly every part of the colony. The plant prefers and thrives best in damp soil and in localities where the humidity is great."

**43379. INDIGOFERA SUFFRUTICOSA** Mill. Fabaceæ. **Indigo.**  
(*Indigofera anil* L.)

"A leguminous plant found in the colony. Its distribution is extensive throughout the colony, but it occurs in greatest abundance in the Mar-

**43378 and 43379—Continued.**

quesas Islands, where it grows wild in the low-lying valleys and along the seashore. Mr. Ahnne has supplied specimens of this plant, not because of its qualities as a forage (since it has no value as an animal food), but because he believed it might be of interest to the Department of Agriculture to learn of its presence here. There are very few forage grasses in the colony, and the land available for pastures is of limited area."

**43380 and 43381.**

From Dindigul, southern India. Presented by Rev. Willis P. Elwood, American Madura Mission. Received September 27, 1916. Quoted notes by Rev. Mr. Elwood.

**43380.** CANAVALI GLADIATUM (Jacq.) DC. Fabaceæ. **Sword bean.**

"The beans are a very good variety and are perennial. A kind of trellis or arbor should be provided for the beans to run on, as they are rampant growers. The pods when young and tender are cooked, and no Golden Wax bean can surpass them in quality. Of course, they are a purely tropical plant, but they would probably grow in the most southern parts of the country."

**43381.** MAXIMILIANEA GOSSYPIUM (L.) Kuntze. Cochlospermaceæ.  
(*Cochlospermum gossypium* DC.)

"The seeds are of a variety of silk cotton. The trees grow in shallow soil on the top of sloping rocks. The flowers are lemon colored, up to 6 inches in diameter, and are very fragrant. The trees grow at altitudes of 2,000 to 2,500 feet in latitude 10° N. They are never seen anywhere except above rocks."

**43382.** AMYGDALUS PERSICA L. Amygdalaceæ. **Peach.**  
(*Prunus persica* Stokes.)

From Swatow, China. Presented by Mr. G. Hanson, American consul. Received September 28, 1916.

"Cling variety."

**43383 to 43385.**

From Brazil. Collected by Dr. J. N. Rose, United States National Museum. Received September 25, 1916.

**43383.** ARAUCARIA BRASILIANA A. Rich. Pinaceæ.

"Rose No. 20427. From Monte Serrat, vicinity of Itatiaya, Brazil; collected July 26, 1915."

A tall evergreen tree, native in southern Brazil, sometimes 100 feet high, with large and nearly globular cones. The wood is used in construction work for turning, ship's masts, cabinetwork, and for matches. The thick, resinous bark yields, by a fermentation process, an agreeable medicinal drink, and the ashes contain much potash; the resin exuded by the bark furnishes by-products useful in the industries and in medicine. The edible seeds produce white and delicate starch. (Adapted from *Bailey, Standard Cyclopedia of Horticulture*, p. 346, and from *Correa, Flora do Brazil*, p. 61.)

**43384.** IPOMOEA sp. Convolvulaceæ.

"Rose No. 19969. From the vicinity of Machado Portella, Bahia, Brazil; collected June 19 to 23, 1915."

**43383 to 43385—Continued.**

**43385.** OPERCULINA TUBEROSA (L.) Meisn. Convolvulaceæ.  
(*Ipomoea tuberosa* L.)

A perennial, stout-stemmed herbaceous vine, climbing to the tops of the tallest trees. The leaves are large and compound, with seven oblong sharp-pointed leaflets, and the three to six yellow flowers are on a long peduncle. The fruit is a membranous round capsule, about an inch long, containing two or four seeds which are covered with a black tomentum. The tuber is enormous, but not edible, the entire plant being used as a purgative. (Adapted from *De Lanessan, Les Plantes Utiles des Colonies Françaises*, pp. 398 and 567.)

**43386 and 43387.**

Collected by Dr. J. N. Rose, United States National Museum. Received September 25, 1916.

**43386.** PROSOPIS STROMBULIFERA (Lam.) Benth. Mimosaceæ.

"Rose No. 20974. From the vicinity of Mendoza, Argentina, September 1, 1915. This grows commonly in the Mendoza Desert and is a low shrub not over 12 inches high. Its peculiar screw-shaped pods look like bright-yellow spikes of flowers a short distance away. The plant might prove to be a very good hedge or border plant in western Texas and Arizona. The pods hang on long after the leaves have fallen." (*Rose.*)

**43387.** TOUNATEA CROCEA (Benth.) Kuntze. Cæsalpiniaceæ.  
(*Swartzia crocea* Benth.)

"*Mocutaiba*. From the Jardim Botânico, Rio de Janeiro, Brazil."

A bushy tree, with leaves having three elliptical leaflets and winged petioles. In October the tree is covered with racemes, each consisting of three or four very aromatic yellow flowers. The Brazilian tree is planted in avenues, and the wood is used for interiors and cabinet-work. According to Rodrigues, its native name is *Mocutaiba*, while Correa gives *Mocitahyba*. (Adapted from *Rodrigues, Hortus Fluminensis*, p. 138, and from *Correa, Flora do Brazil*, p. 51.)

**43388. PHASEOLUS COCCINEUS L. Fabaceæ. Scarlet Runner bean.**

From Boscotrecase, Naples, Italy. Presented by Dr. Gustav A. Eisen. Received September 28, 1916.

"*Fagioli di Cera*. Named on account of their waxy color, and were the best I tasted in Italy." (*Eisen.*)

A bean with a twining stem, which, if supported, will rise to a height of 14 feet. The leaves are smaller than those of the common kidney bean, and the flowers, which are in long spikes and of a deep scarlet color, are larger. The pods are large and rough, and the seeds are purple marked with black, although sometimes pure white. This bean was formerly cultivated for its flowers only and was first mentioned as being edible by the gardener, Philip Miller. (Adapted from *Miller, Gardener's and Botanist's Dictionary*, ed. 9.)

**43389. ALEURITES TRISPERMA Blanco. Euphorbiaceæ.**

**Soft lumbang.**

From Los Banos, Philippine Islands. Presented by Mr. F. W. Foxworthy, Manila Bureau of Forestry, at the request of Mr. A. W. Prutch, Muntinlupa. Received September 28, 1916.

"The advantages of *Aleurites trisperma* are that the seeds are easier to crack and that the oil dries quicker than that of *A. moluccana*, according to our Bureau of Science. I have for years written and advocated that our *lumbangs* (*Aleurites*) be utilized instead of allowing unknown tons of seed (especially of *A. moluccana*) to lie and rot; that the world's supply of vegetable oils is growing in importance, as coconut oil is being more and more withdrawn for food." (*Prautch.*)

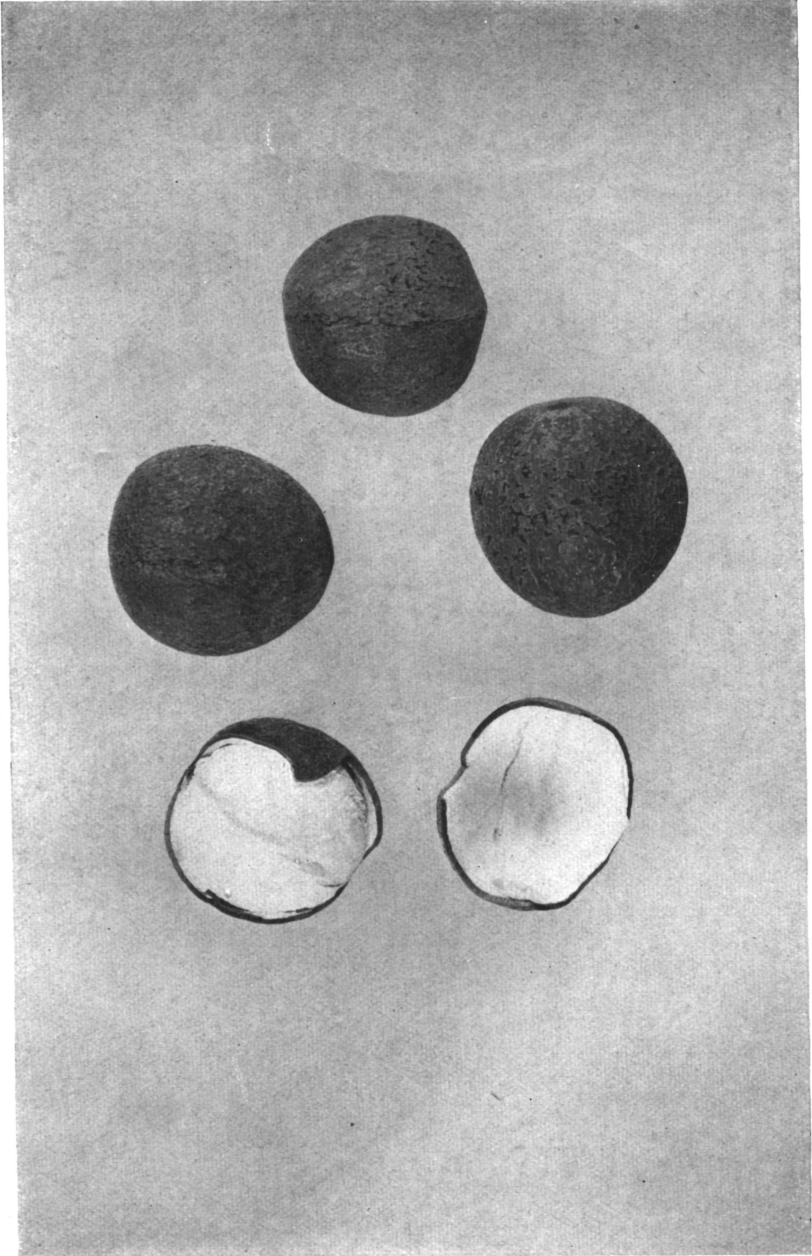
"From data given by the late William S. Lyon, of Manila, and more recently by the Philippine Bureau of Forestry, it appears that *Aleurites trisperma*, the soft-shelled lumbang, is much less regular and prolific in bearing than *A. moluccana*, the more common, hard-shelled species." (*R. A. Young.*)

For an illustration showing the seeds of the soft lumbang, see Plate V.

**43390. RATIBIDA COLUMNIFERA APPENDICULATA** Cockerell. Asteraceæ.  
(*Rudbeckia columnaris* Sims.)

From Boulder, Colo. Presented by Mr. T. D. A. Cockerell. Received September 14, 1916.

A low, sweet-scented perennial herb, little branched, with pinnatifid leaves and lanceolate leaflets. The cylindrical receptacle is elongated, and in this variety the yellow ray flowers possess long appendages, usually a pair, arising from the throat. The plant is quite hardy, although it is best to put it in a coldframe during the winter. This plant was discovered in Boulder, Colo., July 8, 1916, by Mr. T. D. A. Cockerell and was introduced for the remarkable collarette which it possesses. (Adapted from *Curtis's Botanical Magazine*, vol. 39, pl. 1601, and Cockerell, in *Journal of Heredity*, September, 1916, pp. 428, 431.)



SEEDS WHICH ARE THE SOURCE OF A QUICK-DRYING OIL, THE SOFT LUMBANG (*ALEURITES TRISPERMA* BLANCO., S. P. I. No. 43389).

The valuable oil expressed from the seeds of the lumbangs (*Aleurites moluccana* and *A. trisperma*) merits more attention than has hitherto been accorded it. The seeds of the soft lumbang are easier to crack and the oil dries quicker than that of the hard lumbang (*A. moluccana*), which is better known. With the amazing rise in importance of vegetable oils, these trees are bound to prove of increasing value. (Photographed, natural size, by E. C. Crandall, Oct. 15, 1909; P4868FS.)



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