

Issued May 5, 1922

U. S. DEPARTMENT OF AGRICULTURE.
BUREAU OF PLANT INDUSTRY.

WILLIAM A. TAYLOR, *Chief of Bureau.*

INVENTORY

OF

SEEDS AND PLANTS IMPORTED

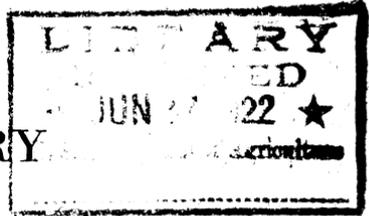
BY THE

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
DURING THE PERIOD FROM JULY 1
TO SEPTEMBER 30, 1918.

(No. 56; Nos. 46303 to 46587.)



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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BUREAU OF PLANT INDUSTRY.

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INVENTORY OF SEEDS AND PLANTS IMPORTED BY THE OFFICE OF FOREIGN SEED AND PLANT IN- TRODUCTION DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1918 (NO. 56; NOS. 46303 TO 46587).

INTRODUCTORY STATEMENT.

Although this inventory is a small one and falls within the period affected by the war, it describes an unusual number of interesting plant immigrants, which, if they succeed, can scarcely fail to make a lasting impression on our horticulture.

No. 46310 (*Amaranthus paniculatus*) is the "huauhtli" of the Aztecs, an amaranth whose seeds are used in the making of a delicate sweetmeat resembling pop-corn balls. This "huauhtli" was cultivated by the Aztecs before the discovery of America. It figured in their religious ceremonies and their commerce. Quantities of this "grain" were exacted by them as tribute from conquered tribes. Dr. Safford has found that Montezuma had 18 granaries, each with a capacity of 9,000 bushels, filled with its seeds. The flour, made into small cakes called alegría by the Spaniards, was eaten in large quantities by the lower classes. The ability of this plant to grow and bear in regions too dry for corn makes it worthy of close study.

Some one in the Southwest should experiment with the "huauhtzontli" (*Chenopodium nuttalliae*; No. 46311) and determine whether its delicate inflorescences when cooked as the Mexicans cook them are not worth putting on our menu. A new vegetable such as this should be most interesting for experiment.

Canna edulis (No. 46313), the edible canna or Queensland arrowroot, has been grown for years for arrowroot production in Queensland, because there it yields heavily and is easier to cultivate than the Bermuda arrowroot (*Maranta arundinacea*). Few root vegetables are more brilliantly colored than the tubers of this canna, and its behavior in Florida makes it worthy of special study as a possible crop in the Everglades.

In Nos. 46316 to 46320 we have a collection of strikingly ornamental trees and shrubs from New Zealand, sent in by our correspondent, Mr. H. R. Wright. *Freycinetia banksii* (No. 46317) with its striking fruit, *Meryta sinclairii* (No. 46318) with its immense leaves, *Pittosporum ralphii* (No. 46319) with bell-shaped, dark-crimson flowers, and *Sideroxylon costatum* (No. 46320), a handsome shade tree, should all find a place somewhere in America.

Mr. John Gossweiler has sent in from Loanda, Angola, a species of *Solanum* (*S. macrocarpon*; No. 46330) bearing fruits the size of an apple, and also a brilliant violet-purple flowered species of sesame (*Sesamum angolense*; No. 46332) that may possibly be used to advantage in the improvement of the oil-producing sesame, which has the defect of scattering its seeds, thus making mechanical harvesting impossible.

A red-fleshed pummelo (*Citrus grandis*; No. 46336) from Shenchowfu, which its sender, Mr. N. T. Johnson, says ripens two months earlier than other varieties, may prove valuable in Florida.

The collections of beans and closely allied plants, accessioned in this inventory, may be cited to show how the machinery of plant introduction works when a plant breeder wants to get together as many varieties of a certain plant as possible for experimental purposes. Nos. 46338 to 46354, from Guayaquil, Ecuador; Nos. 46358 to 46373, from Caracas, Venezuela; Nos. 46490 to 46499, from Rosario, Argentina; Nos. 46502 to 46521, from Para, Brazil; and Nos. 46525 to 46530, from Punta Arenas, Chile, will put in his hands a total of 63 probable strains, including, of course, some duplicates.

Whether or not there would be any distinct advantages to truck growers in grafting eggplants on the root of the susumber (*Solanum mammosum*), which is closely related to it, remains to be shown. The idea is interesting, and seeds of the tree have been obtained (No. 46374).

The white sapote, which is much hardier than the avocado, is gradually winning adherents, at least the large-fruited varieties of it. A new one from Guadalajara (*Casimiroa edulis*; No. 46375), with pear-shaped fruits, is welcome, and Mr. Furnivall may have sent a sort superior to any we now have.

The large-fruited Mexican oaks (*Quercus* sp.; No. 46383) are so strikingly interesting that it is to be hoped they will withstand our winters in the South and, like *Lithocarpus cornea* from Hongkong, will find a congenial home along the Gulf coast.

Could the kauri pine (*Dammara australis*; No. 46387), stateliest of all the giant forest trees of the world because of its perfectly columnar trunk, be grown anywhere in the western hemisphere, it ought to be, for disquieting stories of its threatened extinction in New Zealand are rife. We are protecting our redwoods and sequoias, and

it is to be presumed, of course, that New Zealand, too, will safeguard her wonderful trees from extinction.

It is so seldom that a tree from Madagascar comes to this country that the arrival of the *Aphloia* (*A. theaeformis*; No. 46389) is worthy of special mention. This is said to be a low tree found on mountain slopes and when in fruit it is covered with small white wholesome berries.

Nos. 46390 to 46456 record as names only a collection of seeds found by the American consul in Explorer Frank N. Meyer's baggage which was taken off the steamer in China from which he disappeared. No descriptions were attached, and it is evident he had planned to write these up when he reached a region more congenial than was Ichang, from which he had just escaped.

The perennial vetch (*Swainsona* sp.; No. 46457) sent in by Mr. Hamilton, which thrives in porous soils in semitropical regions and holds its own among the native grasses, will attract at once the attention of citrus growers as a promising cover crop for Florida orchards.

Macadamia youngiana (No. 46463), with thin-shelled nuts, if it grows as well in Florida and Hawaii as its relative *M. ternifolia*, will be a valuable nut tree for the Subtropics. The behavior of the macadamia in southern Florida has already begun to attract the attention of nut growers.

South African shrubs grow so well in southern Florida that the introduction of a new sweet-scented one (*Brabejum stellatifolium*; No. 46474), which also has edible fruits, is worthy of emphasis.

A citrus fruit which has a concentrated peach flavor might be useful in the ice-cream business. The bel fruit of India (*Belou marmelos*; Nos. 46477 and 46500) has enthusiastic admirers and may be worthy of serious study by our citrus growers.

Plants whose leaves or fruits are powerful fish poisons have been used by the natives of many countries. They always have an interest in that they may contain valuable new alkaloids. Mr. John Ogilvie has sent in five (Nos. 46482 to 46486) from British Guiana, three of which are still undetermined.

The search for a blight-proof pear has interested many people, and when eight trees of a different habit from the rest remain unattacked by the disease in a badly blighted orchard in Louisiana their bud wood should be tested further to find out whether the variety remains free from blight (*Pyrus communis* × *serotina*; No. 46566).

The fact that the "yang mei," a most attractive Chinese fruit tree, has fruited at Del Monte and that young trees of it are established at Chico, Calif., and at Brooksville, Fla., make worthy of mention the introduction by Mr. Groff of this species (*Myrica rubra*; No. 46571) from Canton. Though it is a discouragingly slow grower,

the beauty of its fruits is so great that some enthusiast ought to devote his spare time for a score of years to its dissemination.

The neem tree of India (*Azadirachta indica*; No. 46573), which Mr. Lane sends, is related to the Chinaberry tree, but bears dark-purple fruits. It should interest foresters if it grows anything like as fast as its relative, for its wood is reported to resemble mahogany. Its fruits furnish a medicinal oil and its sap is made into a cooling drink.

The New Zealand rimu (*Dacrydium cupressinum*; No. 46575), seeds of which Mr. Wright sends from Auckland, must be a most striking conifer, resembling, it would seem, a drooping yew, with beautiful red-cupped berries.

Nos. 46576 to 46586 describe eleven named varieties of oriental pears (*Pyrus* spp.) which were personally selected by Prof. F. C. Reimer, the pear expert of the Oregon Agricultural Experiment Station, during his recent exploration of eastern Asia. Should pear-blight ever stop the profitable culture of the European pear in America, these oriental varieties and the hybrids between them and the European forms would probably take their place. They are, therefore, of great interest and deserve the widest trial over the country.

The botanical determinations of seeds introduced have been made and the nomenclature determined by Mr. H. C. Skeels, while the descriptive and botanical notes have been arranged by Mr. G. P. Van Eseltine, who has had general supervision of this inventory. The manuscript has been prepared by Miss Esther A. Celander.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., September 26, 1921.

INVENTORY.¹

46303. PAPAVER SOMNIFERUM L. Papaveraceae. Poppy.

From Calcutta, India. Purchased from Mr. James A. Smith, American consul general. Received July 1, 1918.

"Seed of last season's crop from the economic botanist to the Government of India at Cawnpore. It is the best seed he could procure at this season of the year and is viable, but it is not pure and contains a mixture of United Provinces poppies." (*Smith.*)

Introduced for the experiments of the Office of Drug-Plant and Poisonous-Plant Investigations and not for general distribution.

46304 and 46305.

From Concepcion, Paraguay. Presented by Mr. Thomas R. Gwynn. Received July 1, 1918. Quoted notes by Mr. Gwynn.

46304. PHASEOLUS LUNATUS L. Fabaceae. Lima bean.

"The Linconia butter bean is the very finest that I have ever come across. It yields in full blast for at least eight months and with a good season will give, in a climate like this, a year or more in superabundance continually, day after day. The plant is extraordinarily hardy and thrifty, as neither the extreme drought nor the hard frosts of last year put it out of business. When I pulled the plants on September 1 they were still bearing (not a great deal). I planted this year on September 15, and as we had a splendid year the plants are extra fine and are loaded with fruit of all sizes and flowers to the very tip ends. I have them planted along a wire fence with poles 12 feet high stuck in about 1 yard apart."

46305. PISUM SATIVUM L. Fabaceae. Garden pea.

"Peas that are ready for the table inside of two months and are still bearing and in flower—now something over six weeks."

¹ All introductions consist of seeds unless otherwise noted.

It should be understood that the varietal names of fruits, vegetables, cereals, and other plants used in these inventories are those which the material bore when received by this office, 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 foreign varietal designations appearing in these inventories will in many cases undoubtedly be changed by the specialists interested in the various groups of plants, and the forms of the names will be brought into harmony with recognized American codes of nomenclature.

46306. GARCINIA MANGOSTANA L. Clusiaceae. Mangosteen.

From Buitenzorg, Java. Presented by the Department of Agriculture.
Received July 3, 1918.

For previous introduction and description, see S. P. I. No. 46204.

46307. RICINUS COMMUNIS L. Euphorbiaceae. Castor-bean.

From Carora, Venezuela. Presented by Mr. Julio Marmol Herrera. Received July 3, 1918.

Medium-sized, light-gray seed with reddish brown mottlings.

46308 and 46309. CHENOPodium AMBROSIoidES L. Chenopodiaceae.

From Buitenzorg, Java. Presented by the Botanic Garden. Received July 3, 1918.

The plant is an annual, but has an almost woody stem from 1 to 2 meters in height with alternate lanceolate leaves. The inflorescence consists of simple leafy spikes of very small greenish flowers. The seeds are very small and black. The whole plant has a pronounced aromatic odor. An infusion of this plant has been used in Europe with good results as a cure for nervous affections. (Adapted from the *Pharmaceutical Journal and Transactions*, 3d ser., vol. 9, p. 713.)

For previous introduction, see S. P. I. No. 45524.

46308. From Botanic Garden. **46309.** From Kwala Lumpur.

46310 and 46311.

From Coyacan, Mexico. Presented by Mrs. Zelia Nuttall. Received July 3, 1918.

46310. AMARANTHUS PANICULATUS L. Amaranthaceae. Huauhtli.

"Seeds of *Amaranthus paniculatus*, known as 'alegría.' Much used by Mexican Indians for making sweetmeats. They are first roasted, then mixed with sirup made of honey or of sugar and water, rolled into balls, and eaten like sugared pop corn." (Nuttall.)

An annual, with entire leaves, bearing the abundant grainlike edible seed in dense panicles. Some plants produce white seeds and some produce black. The white seeds are those chiefly used by the natives. This plant is found both in cultivation and growing wild. The seeds are ground and cooked in the form of small cakes known as *alegría*, these cakes being eaten in large quantities by the poorer classes, especially during a time of scarcity of corn. *Huauhtli* was cultivated by the Aztecs before the discovery of America. It occupied an important place in the fare of the people, and accounts show that every year 18 granaries, each with a capacity of 9,000 bushels, were filled by Montezuma. Often the tribute exacted by the Aztecs from the people they conquered would take the form of a certain quantity of this grain. It was so closely connected with the life of the people that it figured in religious observances. Spanish historians, writing in the first half of the seventeenth century, give accounts of how the ancient Mexicans made figures of their gods out of the flour obtained from the seed. The figures were carried in processions, and at the end of the ceremony they were broken up and served to the people as a form of communion. (Adapted from Safford, *A Forgotten Cereal of Ancient America, Proceedings of the Nineteenth International Congress of Americanists*, p. 286, 1917.)

46310 to 46311—Continued.

Huauhtzontli.

46311. *CHENOPODIUM NUTTALLIAE* Safford. Chenopodiaceae.

"Seeds of 'huauhtzontli,' the unripe inflorescence of which is a favorite vegetable of the Mexican Indians. It is boiled or fried in butter, stem and all, small flowering tips being selected and tied together. Much used in Lent. Is very nourishing and palatable. The seeds must be soaked in milk (like corn, half ripe)." (*Nuttall*.)

"Native name *xochihuahtli* (flowering huauhtli). A plant cultivated near the City of Mexico for the sake of its prolific branching inflorescences, which are gathered before they are quite mature and while the seeds are still soft and cooked as a vegetable with other ingredients. This variety, with yellowish or pale-brown discoid seeds, is the most popular. The inflorescences are known by the Aztec name *huauhtzontli*, signifying 'huauhtli-heads.' Botanically, the plant is closely allied to *Chenopodium paganum* Reichenb. and *C. album* L. It is quite distinct from *C. quinua* Willd., the celebrated food staple of the Peruvian highlands; and it must not be confused with the plant called *michihuahtli* (fish-egg huauhtli), which is a white-seeded Amaranthus, not a Chenopodium." (*W. E. Safford*.)

46312. *VIGNA SINENSIS* (Torner) Savi. Fabaceae.

Cowpea.

From Vereeniging, South Africa. Presented by Mr. J. Burt Davy. Received August 14, 1918.

A small lot of mixed varieties of cowpeas introduced for experimental purposes.

46313. *CANNA EDULIS* Ker. Cannaceae.

Edible canna.

From Honolulu, Hawaii. Tubers presented by Mr. J. M. Westgate, Hawaii Agricultural Experiment Station. Received July 9, 1918.

In Queensland the edible canna, or "Queensland arrowroot," as it is called there, has been cultivated for years because its heavy yields and easy cultivation have made it more profitable than the Bermuda arrowroot, *Maranta arundinacea*. The stems and leaves are used for forage, and the tuber makes a palatable vegetable when cooked, somewhat resembling the turnip.

46314. *ZEA MAYS* L. Poaceae.

Corn.

From Guadalajara, Mexico. Presented by Arnulfo Ballesteros, La Barca, Jalisco, Mexico, at the request of Mr. John R. Silliman, American consul. Received July 10, 1918.

"Early Pipitillo corn which is cultivated in the swampy lands of Chapala. This corn is early in this region only when sown in the months of January, February, and the early part of March. It is then possible for the harvesting and drying to be completed four months afterward. Sown in May or June, the time required for it to mature is six months." (*Ballesteros*.)

46315. *PAPAVR SOMNIFERUM* L. Papaveraceae.

Poppy.

From Yokohama, Japan. Presented by the Yokohama Nursery Co. Received July 10, 1918.

"Variety *album*. An erect annual with handsome white flowers, which is cultivated in the Orient for opium manufacture. It was introduced into the

United States for the use of its palatable seeds in confectionery and the preparation of morphia for medicinal purposes. The seeds yield a comestible oil. It is of comparatively easy culture." (*S. C. Stuntz.*)

46316 to 46320.

From Auckland, New Zealand. Presented by Mr. H. R. Wright. Received July 12, 1918.

46316. CLIANTHUS PUNICEUS (Don) Soland. Fabaceæ. Parrot's-bill.

A white-flowered form of the *kowhai*, which in its scarlet-flowered form is one of the most gorgeous of New Zealand flowering plants. With its flowers 2 inches in length in long pendulous racemes and its heavy, dark-green, glossy, pinnate leaves, it should prove a desirable addition to the drooping shrubs suitable for growing in regions having but slight frosts. The flowers of this plant in its native haunts are said to be pollinated by birds. (Adapted from *Laing and Blackwell, Plants of New Zealand, p. 210.*)

For previous introduction, see S. P. I. No. 34716.

46317. FREYCINETIA BANKSII A. Cunn. Pandanaceæ.

"The fruit proper does not ripen until many months after the ripening of the white bracts. In size and shape it is almost identical with the *Monstera deliciosa*." (*Wright.*)

A vine which climbs to the tops of the tallest trees along the banks of rivers in the North Island of New Zealand. The linear-lanceolate leaves are borne in clusters along the stem, and the flowers appear in the center of these leaf clusters. It is called *Lon marrar* by the natives, who eat the white fleshy bracts of the flowers for their sugary juice. (Adapted from *Hooker, Companion to the Botanical Magazine, vol. 2, p. 377.*)

46318. MERYTA SINCLAIRII (Hook. f.) Seem. Araliaceæ.

"It makes a beautiful tree with immense leaves; an ideal specimen for a lawn, but very tender to frost." (*Wright.*)

A handsome New Zealand tree, 12 to 24 feet high, with glossy leaves 20 inches long and 10 inches wide. The erect panicles of greenish yellow flowers are followed by oblong, shining black fruits. (Adapted from *Laing and Blackwell, Plants of New Zealand, p. 312.*)

46319. PITTOSPORUM RALPHII Kirk. Pittosporaceæ.

A laxly branched shrub 15 to 20 feet high, found in the central district of the North Island of New Zealand. The shoots, sepals, and under-surface of the coriaceous leaves are covered with close white hairs. The fascicles of small, bell-shaped, dark-crimson flowers, with protruding yellow anthers resting on the downy white young leaves, make it a very attractive ornamental shrub. (Adapted from *Laing and Blackwell, Plants of New Zealand, p. 195.*)

46320. SIDERONYLON COSTATUM (Endl.) F. Muell. Sapotaceæ.

A handsome, closely branched tree 40 feet high and 3 feet in diameter, native to the coasts of the North Island and of Norfolk Island in New Zealand. The obovate, entire leaves, 2 to 4 inches long, are coriaceous and shining. The flowers are found one or two together in the axils of the leaves and the fruits are 1 inch in diameter with one to four seeds. The wood is hard, white, and durable, and the bony seeds were formerly used for necklaces. (Adapted from *Cheeseman, Manual of the New Zealand Flora, p. 435.*)

46321. CARICA sp. Papayaceæ.

From Tampico, Mexico. Presented by Mr. Harry Hummel. Received July 13, 1918.

"*Papaya broncha*. This is the everblooming papaya: it produces a fruit about 3 inches long and 2 inches in diameter. The trees grow wild in the woods, can be transplanted at any time of the year, require no attention except water, and I believe if cultivated will produce a larger fruit." (*Hummel*.)

46322 to 46328.

From Rio Grande, Brazil. Obtained by Mr. Samuel T. Lee, American consul. Received July 13, 1918.

These legumes have been introduced for use in a series of experiments in testing and breeding varieties of South American beanlike plants, for the purpose of selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

46322 to 46326. PHASEOLUS VULGARIS L. Fabaceæ. Common bean.

46322. *Feijão carico.* **46325.** *Feijão da praia.*

46323. *Feijão tupi.* **46326.** *Feijão preto.*

46324. *Feijão branco.*

46327 and 46328. VIGNA SINENSIS (Torner) Savi. Fabaceæ. Cowpea.

46327. *Feijão mindo branco.* **46328.** *Feijão mindo escuro.*

46329 to 46332.

From Loanda, Angola, Africa. Presented by Mr. John Gossweiler, Department of Agriculture. Received July 16, 1918.

46329. RAPHA GAERTNERI Mann and Wendl. Phœnicaceæ.

A tropical African palm with a simple erect stem and a crown of pinnately compound leaves made up of linear-lanceolate, acuminate segments with the margins recurved at the base. The scaly chestnut-brown fruits, 2 to 3 inches long, are borne in pendent clusters. (Adapted from *Thiselton-Dyer, Flora of Tropical Africa, vol. 8, p. 105.*)

46330. SOLANUM MACROCARPON L. Solanaceæ.

A stout undershrub with a much-branched smooth stem and ovate, sinuate-margined leaves 8 inches long. The racemose cymes, opposite the leaves, bear blue-purple flowers, 1 to 2 inches broad, which are followed by globose, yellow fruits the size of an apple. (Adapted from *Thiselton-Dyer, Flora of Tropical Africa, vol. 4, sec. 2, p. 214.*)

46331. GLADIOLUS sp. Iridaceæ.

Gladiolus.

Received without description.

46332. SESAMUM ANGOLENSE Welw. Pedaliaceæ.

An erect herb, often 8 feet high, native to tropical Africa. The square stems are clothed with numerous oblong to ovate wavy margined leaves 2 to 4 inches long. The solitary, axillary flowers have brilliant violet-purple, obliquely campanulate corollas, 2 to 3 inches long. (Adapted from *Thiselton-Dyer, Flora of Tropical Africa, vol. 4, sec. 2, p. 555.*)

46333. RICINUS COMMUNIS L. Euphorbiaceæ. Castor-bean.

From Colombia. Presented by Mr. Hernando Villa, Girardot. Received July 16, 1918.

Seed five-eighths of an inch long and three-eighths of an inch wide; light-gray ground with stripes and blotches of reddish brown. Introduced for experiments to determine the oil content of different varieties of castor-beans.

46334. CARICA PAPAYA L. Papayaceæ. Papaya.

From Tampico, Mexico. Presented by Mr. Harry Hummel. Received July 16, 1918.

"*Papaya real*. The fruit from which these seeds were taken was 14 inches long and 6 inches in diameter. It is the very best papaya that grows in the Tampico district and is a delicious fruit equal to any muskmelon. The trees grow in sandy loam in a climate which very seldom goes below 40° F. and reaches as high as 110°." (*Hummel*.)

46335. VIOLA sp. Myristicaceæ.

From Rio de Janeiro, Brazil. Presented by Mr. R. P. Momsen, American vice consul. Received July 17, 1918.

"*Bichyba* nut. A common ornamental and timber tree of large size, with brown, medium-hard wood, well known on the Brazilian market. The seed is said to yield an oil used in medicine and for soap making." (*H. M. Curran*.)

For previous introduction, see S. P. I. No. 41945.

46336. CITRUS GRANDIS (L.) Osbeck. Rutaceæ. Pummelo.

(*C. decumana* Murray.)

From Shenchowfu, Hunan, China. Presented by Mr. N. T. Johnson, American consul at Changsha, who received them from Rev. J. F. Bucher. Received July 24, 1918.

"Red-fleshed pummelo. Ripens earliest of any pummelos on our compound. Is at least two months earlier than other varieties." (*Bucher*.)

46337. PERSEA AMERICANA Mill. Lauraceæ. Avocado.

(*P. gratissima* Gaertn. f.)

Plants grown at the Plant Introduction Field Station, Miami, Fla. Numbered for convenience in recording distribution.

Gottfried variety. A Mexican avocado which has proved quite frost resistant. This variety is a seedling grown from seed received under S. P. I. No. 19094. The fruit ripens at Miami during the months of August, September, and October. It is pear shaped and of a purplish maroon color; weighs 11 to 12 ounces and is of fair quality.

46338 to 46354.

From Guayaquil, Ecuador. Presented by Dr. Frederic W. Goding, American consul general. Received July 24, 1918. Descriptive notes by Dr. Goding.

These legumes have been introduced for use in a series of experiments in testing and breeding varieties of South American plants which bear beanlike seeds, for the purpose of selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

46338 to 46354—Continued.

46338. *LENTILLA LENS* (L.) W. F. Wight. Fabaceæ. **Lentil.**
 (*Lens esculenta* Moench.)
 "Peas, Lentejas."
46339. *PHASEOLUS LUNATUS* L. Fabaceæ. **Lima bean.**
 "Beans, Pallares."
- 46340 to 46351. *PHASEOLUS VULGARIS* L. Fabaceæ. **Common bean.**
- | | |
|--------------------|------------------------------|
| 46340. "Bayo." | 46346. "Misturiado." |
| 46341. "Burro." | 46347. "Panamito reforzado." |
| 46342. "Panamito." | 46348. "Burro amarillo." |
| 46343. "Canario." | 46349. "Caballero." |
| 46344. "Criollo." | 46350. "Chalos." |
| 46345. "Overo." | 46351. "Cacique." |
46352. *PISUM SATIVUM* L. Fabaceæ. **Garden pea.**
 "Alberjas."
46353. *VICIA FABA* L. Fabaceæ. **Broad bean.**
 "Habas."
46354. *VIGNA SINENSIS* (Thunb.) Savi. Fabaceæ. **Cowpea.**
 "Fumbes."

46355 to 46357.

From Richmond, Australia. Presented by Mr. F. H. Baker. Received July 24, 1918.

46355. *ACACIA DIFFUSA* Lindl. Mimosaceæ.

A straggling shrub, native to New South Wales, with loosely scattered sessile, linear leaves about an inch long and yellow flowers in axillary heads about the size of a pea. (Adapted from *The Botanical Register*, vol. 8, pl. 634.)

For previous introduction, see S. P. I. No. 44320.

46356. *ACACIA JUNIPERINA* Willd. Mimosaceæ. **Prickly wattle.**

"The common prickly wattle of the coastal and mountain districts. A prickly scrambling shrub, usually with white or cream-colored flowers. Very common in New South Wales." (*Maiden, Wattles and Wattlebarks*, 3d ed., p. 77.)

46357. *HAKEA ROSTRATA* F. Muell. Proteaceæ.

An erect shrub several feet in height with glabrous branches. The terete leaves are smooth and rigid. The flowers are borne in sessile axillary clusters. The rugose fruit is 1 to 2 inches long by three-fourths of an inch broad, recurved at the base, incurved from the middle, with a closely inflexed conical beak. Found in Victoria and southern Australia. (Adapted from *Bentham, Flora Australiensis*, vol. 5, p. 508.)

For previous introduction, see S. P. I. No. 45868.

46358 to 46373.

From Caracas, Venezuela. Presented by Mr. H. Pittier, through Mr. Homer Brett, American consul, La Guaira. Received July 24, 1918. Quoted notes by Mr. Pittier.

These legumes have been introduced for use in a series of experiments in testing and breeding varieties of South American plants which bear beanlike

seeds, for the purpose of selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

46358. *DOLICHOS LABLAB* L. Fabaceæ. **Bonavist bean.**

"No. 14. *Frijol tapirucense.*"

46359 to 46361. *PHASEOLUS LUNATUS* L. Fabaceæ. **Lima bean.**

46359. "No. 9. *Guaracaro blanco.*"

46360. "No. 11. *Guaracaro café con leche.*"

46361. "No. 15. *Guaracaro peinc.*"

46362 to 46370. *PHASEOLUS VULGARIS* L. Fabaceæ. **Common bean.**

46362. "No. 7. *Poncha rosada.*"

46363. "No. 6. *Caraota blanca.*"

46364. "No. 5. *Hucro de paloma.*"

46365. "No. 3. *Guaracaro redondo pintado.*"

46366. "No. 8. *Caraota negra.*"

46367. "No. 16. *Poncha rosada jaspeada.*"

46368. "No. 1. *Guacamaya.*"

46369. "No. 13. *Caraota indiccita pequena.*"

46370. "No. 12. *Guaracaro colorado.*"

46371 to 46373. *VIGNA SINENSIS* (Torner) Savi. Fabaceæ. **Cowpea.**

46371. "No. 10. *Frijol colorado.*"

46372. "No. 2. *Frijol blanco de sopa.*"

46373. "No. 4. *Frijol bayo.*"

46374. *SOLANUM MAMMOSUM* L. Solanaceæ. **Susumber.**

From Porto Rico. Presented by Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Mass. Collected by Mr. Sylvester Baxter. Received July 25, 1918.

"In Jamaica difficulties in bringing eggplants to a healthy maturity have been met by grafting them on *Solanum mammosum*, the so-called 'susumber tree,' a rank, tropical weed, closely related botanically to the eggplant. The grafts are said to produce fruits of large size and fine flavor, and as the stock is perennial bearing is continual." (*Cook and Collins, Economic Plants of Porto Rico, Contributions from the U. S. National Herbarium, vol. 8, p. 242.*)

For previous introduction, see S. P. I. No. 27713.

46375. *CASIMIROA EDULIS* La Llave. Rutaceæ. **White sapote.**

From Guadalajara, Mexico. Presented by Mr. F. S. Furnivall, through Mr. J. R. Silliman, American consul. Received July 26, 1918.

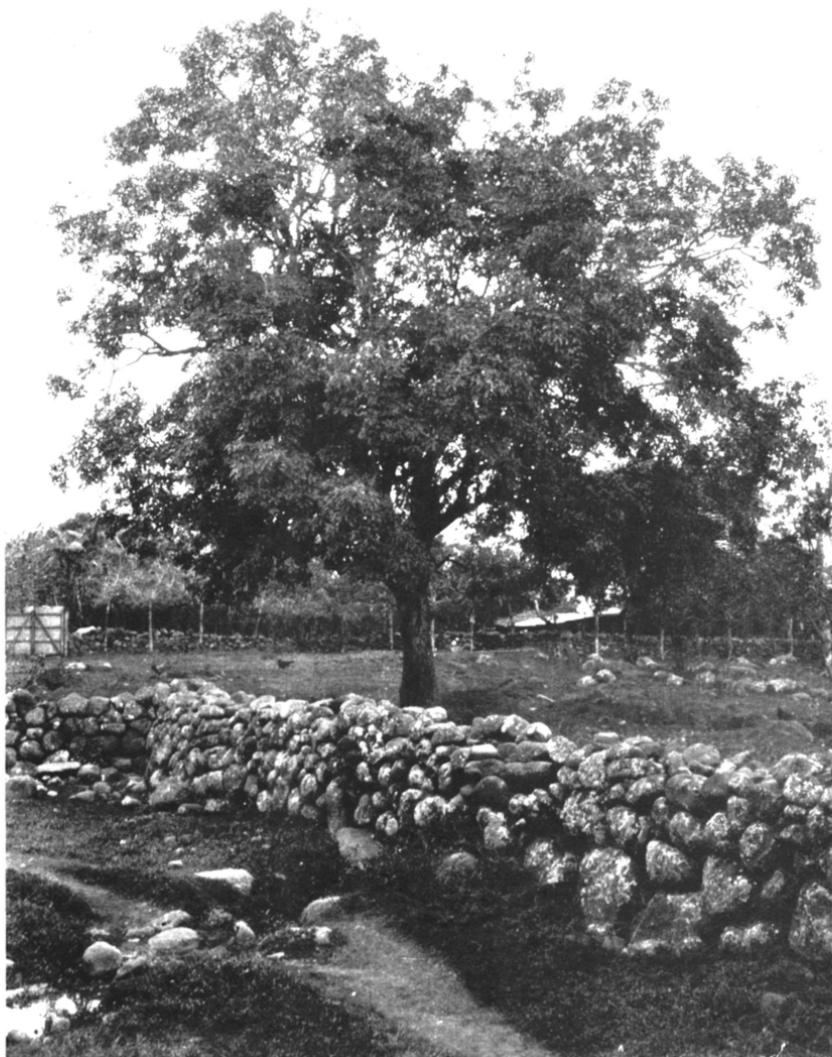
"A pear-shaped variety of the white sapote. The fruits were healthy, of good size, ripe, and of a bright-yellow color." (*Furnivall.*)

For previous introduction and description, see S. P. I. No. 39583.

For an illustration of the white sapote tree, see Plate I.

46376 and 46377. *BAROSMA* spp. Rutaceæ.

From Transvaal, South Africa. Presented by Mr. J. F. Jewell, American consul at Lourenco Marques, Portuguese East Africa, who obtained them from the Director of Agriculture, through the Division of Botany, Transvaal Department of Agriculture, Pretoria. Received July 29, 1918.



THE WHITE SAPOTE, AS IT GROWS IN COSTA RICA. (*CASIMIROA EDULIS*
LA LLAVE, S. P. I. No. 46375.)

This fruit-bearing tree is commonly cultivated in Mexico and Central America, being particularly esteemed by the inhabitants of Mexico. In recent years it has been grown in California and Florida, where it succeeds admirably. There is much difference among seedling trees in the character of their fruit; that of some is excellent, while that of others is of mawkish or even bitter flavor. Superior varieties are now being propagated by budding or grafting. (Photographed by Wilson Popenoe, Cartago, Costa Rica, May 29, 1920; P17854FS.)



THE CHUCK MEI, AN ORNAMENTAL CHINESE SHRUB FOR THE SOUTH. (LOROPETALUM CHINENSE (R. BR.) OLIVER, S. P. I. No. 46424.)

This small shrub related to the witch-hazel was found by Mr. Meyer growing in rather sterile soil among the rocks and even in open pine forests in Hupeh Province, China. It is called by the Chinese the *chuck mei*. The white flowers, which literally cover the bushes very early in spring, make them look like banks of snow at a distance. There is considerable variation in the whiteness of the flowers, however, ranging from pure white to greenish white. (Photographed by F. N. Meyer, near Miaochien, Hupeh, China, April 14, 1917; P12421FS.)

46376 and 46377—Continued.

46376. *BAROSMA BETULINA* (Thunb.) Bartl. and Wendl. **Buchu.**

A much-branched shrub with rodlike branches, found on the slopes of the Roodesand Mountains in South Africa. The opposite, cuneate-obovate leaves, about three-fourths of an inch long and half an inch wide, are sharply and closely denticulate on the margin. (Adapted from *Harvey and Sonder, Flora Capensis, vol. 1, p. 393.*)

This and the following species are two of the sources of the buchu leaves used in medicine.

46377. *BAROSMA SERRATIFOLIA* (Curt.) Willd. **Long-leaf buchu.**

An erect South African shrub with angular twigs bearing linear-lanceolate sharply serrulate leaves $1\frac{1}{2}$ inches long and one-fourth of an inch wide. This species has the same medicinal properties as *B. betulina*, but is said to contain less of the essential oil. (Adapted from *Harvey and Sonder, Flora Capensis, vol. 1, p. 393.*)

46378. *CUCURBITA PEPO* L. Cucurbitaceæ. **Pumpkin.**

From San Jose, Costa Rica. Presented by Sr. Carlos Volio, through Mr. C. Wrecklé. Received July 29, 1918.

Seeds of an exceptionally valuable pumpkin introduced for experimental purposes.

46379 to 46381.

From Zamboanga, Philippine Islands. Presented by Mr. P. J. Wester. Received July 30, 1918. Quoted notes by Mr. Wester.

46379. *COIX LACRYMA-JOBI MA-YUEN* (Roid.) Stapf. Poaceæ. **Ma-yuen.**
"Adlay. An edible variety."

46380. *PARKIA TIMORIANA* (DC.) Merr. Mimosaceæ. **Cupang.**
(*P. roxburghii* Don.)

A very large tree found in Timor and the Philippines, often 115 feet high, with a widespreading crown. The fernlike, bipinnate leaves are made up of a large number of very small leaflets. The small white and yellow flowers are borne in dense pear-shaped panicles, and the pendulous black pods are 18 inches long. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 5, p. 2474.*)

46381. *PHASEOLUS LUNATUS* L. Fabaceæ. **Lima bean.**

"The *Lamao* Lima. Given the right conditions this variety is very prolific."

46382. *AMPELODESMA BICOLOR* (Poir.) Kunth. Poaceæ. **Grass.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received August 2, 1918.

A bunch grass with long tough leaves of possible use in paper making.

For previous introduction and description, see S. P. I. No. 33654.

46383. *QUERCUS* sp. Fagaceæ. **Oak.**

From Guatemala. Presented by Mr. E. Reeves, Finca el Tambor, San Felipe, Retalhuleu, at the request of Dr. William Trelease, of the University of Illinois. Received August 8, 1918.

"Fruits of a large-fruited oak that grows a few miles from here, and which Dr. Trelease has done me the honor to [name for me]." (*Reeves*.)

"I am glad that Mr. Reeves got to you viable seeds of his fine oak, which I thought you would like. It is between *Quercus corrugata* and *Q. cyclobalanoides* in characters, but very distinct from both. The name is a manuscript one as yet." (*Trelease*.)

46384. PANDOREA AUSTRALIS (R. Br.) Spach. Bignoniaceæ.
(*Tecoma australis* R. Br.)

From Sawtelle, Calif. Presented by Mr. P. D. Barnhart. Received August 10, 1918.

"The most wonderful of all climbing plants grown on this coast. It is a rampant grower with dark, shining green foliage. When in bloom the flowers are as the sands of the sea, so abundant are they. The color is a light cream, spotted with chocolate, and the whole show is over in about two weeks." (*Barnhart*).

For previous introduction, see S. P. I. No. 44961.

46385. CALYDOREA SPECIOSA (Hook.) Herbert. Iridaceæ.

From Santiago, Chile. Presented by Dr. Carlos Camacho, director, Servicios de Policia Sanitaria Vegetal. Received August 14, 1918.

"Bulbs known in Chile as *tahui*. This plant is not cultivated and is found only in the hills of certain regions in the central and southern parts of the country." (*Camacho*.)

For previous introductions, see S. P. I. Nos. 30074, 30075, and 36134.

46386. MORINGA OLEIFERA Lam. Moringaceæ. Horse-radish tree.
(*M. pterygosperma* Gaertn.)

From Managua, Nicaragua. Presented by the American Legation. Received August 14, 1918.

"A small tree, cultivated as an ornamental in Cuba, usually about 16 or 20 feet in height, erect, with compound leaves nearly a foot long. The white flowers are borne in panicles, and the slender pods are often a foot long." (*Wilson Popenoc*.)

For previous introduction, see S. P. I. No. 40913.

46387 and 46388.

From Palmerston North, New Zealand. Presented by Mr. J. W. Poynton. Received July 26, 1918.

46387. DAMMARA AUSTRALIS Lambert. Pinaceæ. Kauri pine.
(*Agathis australis* Steud.)

This magnificent tree, native to New Zealand, sometimes measures 180 feet in height and 17 feet in diameter, the estimated age of such a tree being 700 to 800 years. It furnishes an excellent, straight-grained, remarkably durable timber which is much used in boat building, bridge building, wagon making, and for furniture. This tree also yields the kauri resin, from which an almost colorless varnish is made. (Adapted from *Mueller, Select Extra-Tropical Plants, 9th ed., p. 161.*)

46387 and 46388—Continued.

46388. *PHORMIUM TENAX* FORST. Liliaceæ. New Zealand flax.

"The yield is about 1 ton of fiber from 8 tons of green leaves. The nonfibrous part of the leaves, stripped from the fiber, has a lot of proteid material in it and some sugar and starch. Cattle eat the cut-up leaves greedily, and if the waste were dried it would probably make a good cattle feed. When decayed it makes an excellent fertilizer. Analyses have shown a high percentage of potassium salts in the ash."

1. "From plants cut two or three times."
2. "From plants not previously cut."
3. "From plants cut once only." (*Payton.*)

46389. *APILOIA THEAÆFRMIS* (Vahl) Bennett. Flacourtiaceæ.

From Tamatave, Madagascar. Presented by the Envoy de la Station Experimentale d'Agriculture du Gouvernement Ivoloina. Received August 8, 1918.

A low tree found on the slopes of the mountains in Madagascar. The small white berries, which literally cover the tree, are edible and very wholesome, although slightly bitter. The leaves are said to possess medicinal virtues. (*Adapted from Heckel, Plantes Utiles de Madagascar, p. 256.*)

46390 to 46456.

From China. Collected by Mr. Frank N. Meyer, Agricultural Explorer for the Department of Agriculture. Received August 12, 1918.

"This is the last collection of plant material to be made by the late Frank N. Meyer, our agricultural explorer, who was drowned in the Yangtze River on June 1, 1918. The seeds were found in Mr. Meyer's baggage and forwarded from Shanghai by the American consul.

"In view of Mr. Meyer's usual practice of giving a careful description of every seed and plant which he sent in, it seems appropriate to explain that the reason these few last lots received must be published without notes is that Mr. Meyer evidently had not had time since their collection to arrange the notes to go with them. It is with the same sad reluctance which a traveler feels when he leaves his comrade buried somewhere along the route and pushes on that I write these few words regarding Mr. Meyer's last plant introductions into America." (*David Fairchild.*)

46390. *AMERIMNON* sp. Fabaceæ.

"Altitude 3,000 feet. Shrub 4 feet tall."

46391. *AMYGDALUS DAVIDIANA* (CAMP.) ZABEL. Amygdalaceæ. Peach.
(*Prunus davidiana* Franch.)

46392 and 46393. *AMYGDALUS PERSICA* L. Amygdalaceæ. Peach.
(*Prunus persica* Stokes.)

"Chikungshan, Honan, China, August 7, 1917. Wild peaches. Altitude about 2,000 feet."

46394. *ARALIA* sp. Araliaceæ.

46395. *ARALIA* sp. Araliaceæ.

46396. *ASPARGUS* sp. Convallariaceæ. Asparagus.

46397. *BEGONIA* sp. Begoniaceæ. Begonia.

46398. *BERBERIS* sp. Berberidaceæ. Barberry.

3390 to 46456—Continued.

46399. *BRASSICA PEKINENSIS* (Lour.) Gagn. Brassicaceæ. **Pai ts'ai.**
46400. *BRASSICA PEKINENSIS* (Lour.) Gagu. Brassicaceæ. **Pai ts'ai.**
 "Yo pai ts'ai (oil white vegetable)."
46401. *BRASSICA* sp. Brassicaceæ.
 "Changyang, Hupeh, December 9, 1917. Ching ts'ai and peh ts'ai mixed."
46402. *BRASSICA* sp. Brassicaceæ.
 "Ta pai ts'ai."
46403. *CAPSICUM ANNUM* L. Solanaceæ. **Pepper.**
46404. *CARTHAMUS TINCTORIUS* L. Asteraceæ. **Safflower.**
 "Sample of hong hua, red flower seed; plant for coloring silk red."
46405. *CLEMATIS* sp. Ranunculaceæ. **Clematis.**
46406. *CORYLUS TIBETICA* Batal. Betulaceæ.
46407. *COTONEASTER* sp. Malaceæ.
46408. *COTONEASTER* sp. Malaceæ.
46409. *COTONEASTER* sp. Malaceæ.
46410. *COTONEASTER* sp. Malaceæ.
46411. *CRATAEGUS PINNATIFIDA* Bunge. Malaceæ. **Hawthorn.**
 "From Shinglungshan."
46412. *CRATAEGUS PINNATIFIDA* Bunge. Malaceæ. **Hawthorn.**
46413. *CUCUMIS SATIVUS* L. Cucurbitaceæ. **Cucumber.**
46414. *DIOSPYROS LOTUS* L. Diospyraceæ. **Persimmon.**
46415. *EREMOCHLOA* sp. Poaceæ. **Grass.**
46416. *FAGOPYRUM VULGARE* Hill. Polygonaceæ. **Buckwheat.**
 (*F. esculentum* Moench.)
46417. *JUGLANS MANDSHURICA* Maxim. Juglandaceæ. **Walnut.**
46418. *KOELREUTERIA* sp. Sapindaceæ.
46419. *LILIUM* sp. Liliaceæ. **Lily.**
 "Near Suilokua, Hupeh, November 13, 1917. Altitude, 2,000 feet."
46420. *LILIUM* sp. Liliaceæ. **Lily.**
 "Near Tsayanpoo. Altitude 5,300 feet. December 2, 1917."
46421. *LILIUM* sp. Liliaceæ. **Lily.**
46422. *LILIUM* sp. Liliaceæ. **Lily.**
46423. *LILIUM* sp. Liliaceæ. **Lily.**
46424. *LOROPETALUM CHINENSE* (R. Br.) Oliver. Hamamelidaceæ.
 For an illustration of this shrub, as photographed by Mr. Meyer, see Plate II.
46425. *PALIURUS SPINA-CHRISTI* Mill. Rhamnaceæ.
46426. *PEUCEDANUM* sp. Apiaceæ.
46427. *PHASEOLUS CALCARATUS* Roxb. Fabaceæ. **Rice bean.**
 "Patung, China, December 5, 1917. *Man doh* (savage bean). Eaten in soups."
46428. *PHYSALIS ALKEKENGII* L. Solanaceæ. **Alkekengi.**

46390 to 46456—Continued.

46429. *PISUM SATIVUM* L. Fabaceæ. Garden pea.
 "Changyang, Hupeh. December 9, 1917. *Wah doh*. A large variety eaten boiled, steamed, and roasted as human food. A winter crop."
46430. *POUPARTIA AXILLARIS* (Roxb.) King and Prain. Anacardiaceæ..
46431. *PRUNUS* sp. Amygdalaceæ. Plum.
46432. *PRUNUS* sp. Amygdalaceæ. Cherry.
46433. *PTEROCELTIS TATARINOWII* Maxim. Ulmaceæ.
46434. *PYRUS BETULAEFOLIA* Bunge. Malaceæ. Pear.
- 46435 to 46437. *PYRUS CALLERYANA* Decaisne. Malaceæ. Pear.
46435. "Kingmen, Hupeh, October 10, 1917. An intermediate type between the cultivated form and the wild one."
46436. "2453a. Kingmen, Hupeh, October, 1917. *Yeh T'ang li*."
46437. (No descriptive note attached.)
46438. *PYRUS* sp. Malaceæ. Pear.
 "Mixed varieties from various localities."
46439. *QUERCUS* sp. Fagaceæ. Oak.
46440. *RHYNCHOSIA VOLUBILIS* Lour. Fabaceæ.
46441. *RICINUS COMMUNIS* L. Euphorbiaceæ. Castor-bean.
46442. *SACCHARUM ARUNDINACEUM* Retz. Poaceæ. Grass
 "Near Hsiaochita, 5 miles northeast of Ichang, Hupeh. A grass growing from 3 to 10 feet tall, found in sandy and pebbly river beds, subject to annual overflow. A most excellent binder of loose sand for Columbia River regions."
46443. *SOJA MAX* (L.) Piper. Fabaceæ. Soy bean.
 Medium-sized, yellowish green seed.
46444. *SOJA MAX* (L.) Piper. Fabaceæ. Soy bean.
 Small, flat, black seed.
46445. *SOJA MAX* (L.) Piper. Fabaceæ. Soy bean.
 Small, round, yellow seed.
46446. *SOPHORA TOMENTOSA* L. Fabaceæ.
46447. *STILLINGIA SEBIFERA* (L.) Michx. Euphorbiaceæ. Tallow tree.
 (*Sapium sebiferum* Roxb.)
46448. *STIZOLOBIUM DEERINGIANUM* Bort. Fabaceæ. Florida velvet bean.
 "For hilly land."
46449. *STIZOLOBIUM NIVEUM* (Roxb.) Kuntze. Fabaceæ. Lyon bean.
46450. *SYMPLOCOS* sp. Symplocaceæ.
46451. *TOONA SINENSIS* (Juss.) Roemer. Meliaceæ.
 (*Cedrela sinensis* Juss.)
46452. *TRACHYCARPUS EXCELSUS* (Thunb.) Wendl. Phœnicaceæ. Palm.
46453. *TRAPA NATANS* L. Trapaceæ. Water-chestnut.
46454. *VIBURNUM* sp. Caprifoliaceæ.
46455. *VIBURNUM* sp. Caprifoliaceæ.
46456. *VITIS* sp. Vitaceæ. Grape.
 "Tahungshan, August 23, 1917. Altitude, 4,000 feet. Medium-strong growth; leaves very woolly underneath."

46457. SWAINSONA sp. Fabaceae.

From Tolga, Queensland, Australia. Presented by Mr. J. A. Hamilton.
Received August 14, 1918.

"Seeds of a perennial vetch. The plant seems very drought resistant, as it is green all the time. It holds its own among the native grasses and is green when they are dried up, so it must root very deeply. This ought to prove a valuable fodder crop in semitropical areas, especially in the drier parts. It grows in a very porous, well-drained soil." (*Hamilton.*)

46458 to 46464.

From Burringbar, New South Wales. Presented by Mr. B. Harrison. Received August 16, 1918. Quoted notes by Mr. Harrison.

46458. DIANELLA sp. Liliaceae.

"A native lily growing on the beach here, with insignificant purple flowers and berries. Stock eat the foliage."

46459. HIBISCUS sp. Malvaceae.

"A native hibiscus growing on the coast here. Height 10 to 12 feet. Yellow flowers with purple center. Large leathery foliage which is eaten by stock. It requires a few years to grow from seed to flower."

46460. IPOMOEA sp. Convolvulaceae.

"Native Ipomoea with large purple flowers and handsome lacinated foliage. Would make a good ornamental. A perennial vine with tuberous root."

46461. ISCHAEMUM TRITICEUM R. Br. Poaceae.

"Giant Ischaemum, growing to the length of several feet."

46462. PANICUM PARVIFLORUM R. Br. Poaceae.

"Height 3 to 4 feet. A very heavy yielder; nutritious and relished by stock. One of our best native grasses."

46463. MACADAMIA YOUNGIANA F. Muell. Proteaceae. Macadamia.

"The thin-shelled Queensland nut. Very rare here."

A shrub 8 to 10 feet high with oblong leaves in whorls of three or four and with nuts resembling those of *M. ternifolia*, but with thinner shells. (Adapted from *Bentham, Flora Australiensis, vol. 5, p. 406.*)

46464. NYMPHAEA GIGANTEA Hook. Nymphaeaceae. Water lily.

"The large, beautiful blue water lily of the northern rivers of New South Wales."

46465 to 46472.

From Rio Grande, Brazil. Presented by Mr. Samuel T. Lee, American consul. Received August 17, 1918. Quoted notes by Mr. Lee.

These legumes have been introduced for use in a series of experiments in testing and breeding plants which bear beanlike seeds, for the purpose of selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

46465 to 46470. PHASEOLUS VULGARIS L. Fabaceae. Common bean.

46465. "*Feijão branco* (white)."

46466. "*Feijão enrofre* (sulphur)."

46467. "*Feijão mulatinho.*"

46468. "*Feijão manteiga* (butter)."

46469. "*Feijão mulata gorda.*"

46470. "*Feijão preto* (black)."

46471 and 46472. *VIGNA SINENSIS* (Torner) Savi. Fabaceæ. **Cowpea.**

46471. "*Fcijão fradinho.*" 46472. "*Fcijão macaca.*"

46473. *PRUNUS MUME* Sieb. and Zucc. Amygdalaceæ.

Japanese apricot.

From Yuba City, Calif. Presented by Mrs. J. H. Barr. Received August 22, 1918.

"Seeds from a tree of the so-called plumcot. Since this species has shown promise as a stock resistant to crown-gall, the seeds from this plumcot are to be distributed for testing for resistance to this disease." (*David Fairchild.*)

46474. *BRABEJUM STELLATIFOLIUM* L. Proteaceæ.

From Pretoria, South Africa. Presented by Mr. I. B. Pole Evans, Division of Botany, Department of Agriculture. Received August 22, 1918.

A shrub or small tree 8 to 10 feet high, found in the western part of South Africa. The purplish twigs bear lanceolate, serrate, coriaceous leaves in whorls of six. The white sweet-scented flowers are borne in dense axillary racemes 3 to 6 inches long and are followed by ovoid, densely velvety fruits 1 to 2 inches long, each containing a single seed. The seed may be eaten after prolonged soaking in water. The red reticulated wood is used for joiners' and turners' ornamental work. (Adapted from *Thiselton-Dyer, Flora Capensis, vol. 5, p. 504.*)

46475. *BRASSICA OLERACEA VIRIDIS* L. Brassicaceæ

Jersey tree kale.

From St. John, Jersey, Channel Islands, England. Presented by Mr. D. R. Bisson. Received August 24, 1918.

"In this section Jersey kale is sown at the end of summer, then transplanted to 2 to 3 feet apart about November. It must be protected to stand severe frost. Its stalk attains a height of 8 to 12 feet. The leaves of the growing plant are used for feeding cattle and pigs." (*Bisson.*)

For previous introduction, see S. P. I. No. 44829.

46476. *ORYZA SATIVA* L. Poaceæ.

Rice.

From Acapulco, Mexico. Presented by Mr. John A. Gamon, American consul. Received August 29, 1918.

"Purple rice (arroz morado). From the neighborhood of Tecpan, State of Guerrero." (*Gamon.*)

Introduced for the variety tests being carried on by the Office of Cereal Investigations and for trial by other cooperators.

46477. *BELOU MARMELOS* (L.) Lyons. Rutaceæ.

Bel.

(*Aegle marmelos* Correa.)

From Shahjehanpur, India. Presented by Mr. N. L. Rockey, district superintendent, Methodist Episcopal Church. Received September 3, 1918.

"The bel fruit grows plentifully in India. It is prized as a fruit from which to make sherbet. Some of the fruits are very fine; others are useless. It has the flavor of concentrated peaches. The fruit is extremely valuable in the treatment of dysentery, as it is a mild astringent. At the same time it is a food." (*Rockey.*)

46478 and 46479.

From Calcutta, India. Presented by Mr. Humphrey G. Carter, economic botanist, Indian Museum. Received July 1, 1918. Quoted notes by Mr. Carter.

"From Hsipaw in the Shan States in the north of Burma. I have received a packet of mixed seeds."

46478. BRASSICA CHINENSIS Just. Brassicaceæ. **Mustard.**

"The seeds are extremely fine."

46479. BRASSICA RUGOSA (Roxb.) Prain. Brassicaceæ. **Mustard.**

"The seeds have a rugose testa."

46480 and 46481.

From Zacuapam, Mexico. Presented by Dr. C. A. Purpus. Received August 24, 1918. Quoted native names by Dr. Purpus.

46480. CAJAN INDICUM Spreng. Fabaceæ. **Pigeon-pea.**

"*Frijolito garbanzo.*"

"The pigeon-pea, or guandu, supposed to be a native of India, is cultivated widely for food in the Tropics and Subtropics. It is perennial in frostless regions, but is usually cultivated as an annual. The plant develops into a large, semiwoody bush reaching a height of 5 to 10 feet. Although the skin of the pigeon-pea is a little tough, the flavor is good." (*R. A. Young.*)

For previous introduction and fuller description, see S. P. I. No. 46050.

46481. CRATAEGUS MEXICANA Moc. and Sesse. Malaceæ. **Hawthorn.**

"*Tejocote.*"

A bushy tree 8 to 10 feet high, with oblong leaves and large, light-yellow fruits, native of the table-lands of Mexico.

For previous introduction and description, see S. P. I. No. 45818.

46482 to 46486.

From British Guiana. Presented by Mr. John Ogilvie. Rupununy River. Received August 27, 1918. Quoted notes by Mr. Ogilvie.

South American shrubs used as fish poisons.

46482. SESBAN sp. Fabaceæ.

"No. 1. *Hairy* or *Ai*. A small shrub planted by natives around their houses or in the fields. It grows easily and matures quickly. The leaves and small twigs are pounded and thrown into the pool."

46483. (Undetermined.)

"No. 2. A shrub planted as above. The leaves and fruits are picked while green and rubbed to a pulp on a grater, then mixed with grated roots of the bitter or poisonous cassava. It keeps if not allowed to mildew. Pellets the size of a marble are thrown into the creek."

46484. (Undetermined.)

"No. 3. Found wild in the forest and grows rapidly on old abandoned clearings. It becomes a tree 60 to 100 feet high and 2 feet in diameter, with soft white wood. The leaves, seeds, and twigs are pounded and thrown into the water."

46482 to 46486—Continued.**46485.** CARYOCAR SP. Caryocaraceæ.

"No. 4. *Kocar*. Grows plentifully along banks of all creeks and rivers in the interior. It reaches a height of 100 feet and over and a diameter of 2 or 3 feet. The heartwood is tough and exceedingly cross-grained; makes good native corrals. The fruit is pounded in a small hole in the ground and thrown into the pool. The juice which collects while pounding the fruit is carefully scooped up and thrown in with the pounded fruit. The leaves are seldom used, as they are not nearly so powerful. The juice is exceedingly painful if it gets in the eyes, and severe headache and vomiting are caused to Europeans by inhaling the fumes when pounding the fruit."

46486. (Undetermined.)

"No. 5. *Inyak*. Grows abundantly on the open prairie only on the higher sterile ridges and mountains, on soil consisting of hard red decomposed diorite. It is a small stunted shrub not more than 20 feet high. The pounded leaves are used."

46487 to 46489.

From Los Banos, Laguna, Philippine Islands. Collected by Mr. N. Catalan, College of Agriculture. Received September 3, 1918. Quoted notes by Mr. Catalan.

46487. CANARIUM LUZONICUM (Blume) A. Gray. Balsameaceæ.

"*Pili*. From Mount Maquiling, Los Banos. The tree is a source of the 'brea blanca' of commerce. The stone of the fruit contains an oily endosperm which is very good to eat. The plant grows in the forest at low altitudes."

46488. PAHUDIA RHOMBOIDEA (Blanco) Prain. Cæsalpiniaceæ.

(*Azelia rhomboidea* Vidal.)

"*Tindalo*. From Mount Maquiling, Los Banos. A tree that is usually found in somewhat open situations at low altitudes. The wood is very durable and beautifully colored; used for finer constructions; one of the best Philippine woods."

46489. KOORDERSTIODENDRON PINNATUM (Blanco) Merr. Anacardiaceæ.

(*K. celebicum* Engl.)

"*Amuguis*. From Mount Maquiling, Los Banos. A medium to large tree, growing in the forest at low altitudes. According to the Philippine standard of classification, the wood falls under the third class."

46490 to 46499.

From Rosario, Argentina. Purchased in the markets by Mr. Wilbert L. Bonney, American consul. Received September 4, 1918. Quoted notes by Mr. Bonney.

These legumes have been introduced for use in a series of experiments in testing and breeding varieties of South American plants bearing beanlike seeds for the purpose of selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

46490. PHASEOLUS LUNATUS L. Fabaceæ.

Lima bean.

"From the Province of Buenos Aires."

46490 to 46499—Continued.

- 46491 to 46495. *PHASEOLUS VULGARIS* L. Fabaceae. Common bean.
 46491. "*Porotos colorados* (Arroyo Seco). From the Province of Santa Fe."
 46492. "Imported from Chile."
 46493. "*Sanjuanino*. From the Province of San Juan."
 46494. "*Porotos mendocinos*. From the Province of Mendoza."
 46495. "*Salteño*. From the Province of Salta."
 46496 to 46498. *VICIA FABA* L. Fabaceae. Broad bean.
 46496. "*Habas entrerrianas*. From the Province of Entre Rios."
 46497. "*Habas de scrille*. From Santa Fe Province."
 46498. "*Habas salteñas*. From the Province of Salta."
 46499. *VIGNA SINENSIS* (Torner) Savi. Fabaceae. Cowpea.
 "From the Province of Mendoza."

46500. BELOU MARMELÓS (L.) LYONS. Rutaceae. Bel.
(Aegle marmelos Correa.)

From Peradeniya, Ceylon. Presented by Mr. H. F. Macmillan, superintendent of the Royal Botanic Gardens. Received September 5, 1918.

For previous introduction and description, see S. P. I. No. 46477.

46501. ERUCA SATIVA Hill. Brassicaceae. Roquette.

From India. Presented by Mr. A. T. Gage, director of the Royal Botanic Gardens at Sibpur, near Calcutta. Received September 6, 1918.

Roquette, or rocket-salad, is a low-growing plant from southern Europe, the leaves of which resemble those of radish and turnip. It is much used by the French as a spring and autumn salad and potherb. The flavor of the young tender leaves bears a strong resemblance to that of horse-radish. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 5, p. 2981.*)

46502 to 46521.

From Para, Brazil. Presented by Mr. André Goeldi through the American consul. Received September 9, 1918. Quoted notes by the consul.

These legumes have been introduced for use in a series of experiments in testing and breeding varieties of South American plants bearing beanlike seeds, for the purpose of selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

- 46502 to 46508. *PHASEOLUS LUNATUS* L. Fabaceae. Lima bean.
 "No. 6. *Fava sortidas*." This package contained six varieties, which were separated as follows:

46502. A. Medium-sized beans, nearly white, with black specks on the edge.

46503. B. Small white beans.

46504. C. Large white beans.

46505. D. Large white beans with black spots and lines.

46506. E. Medium-sized grayish beans with dark-brown eye.

46507. F. Medium-sized reddish brown beans.

46508. "No. 13. *Fava preta* (black bean)."

- 46509 to 46518. *PHASEOLUS VULGARIS* L. Fabaceae. Common bean.
 46509. "No. 1. *Rajado* (striped bean)."

46502 to 46521—Continued.

46510. "No. 2. *Feijão salmão* (salmon bean)."
 46511. "No. 4. *Feijão viuva alegre* (merry widow bean)."
 46512. "No. 5. *Mulãtinho* (mulatto)."
 46513. "No. 7. *Feijão preto* (black bean)."
 46514. "No. 8. *Feijão farinha* (little bean)."
 46515. "No. 10. *Feijão carrapato* (tick bean)."
 46516. "No. 12. *Feijão branco* (white bean)."
 46517. "No. 14. *Feijão enxofre* (sulphur bean)."
 46518. "No. 15. *Feijão vermelho* (red bean)."
 46519. *VIGNA CYLINDRICA* (Stickin.) Skeels. Fabaceæ. Catjang.
 "No. 9. *Feijão manteiga* (butter bean)."
 46520 and 46521. *VIGNA SINENSIS* (Turner) Savi. Fabaceæ. Cowpea.
 46520. "No. 3. *Frade* (friar bean)."
 46521. "No. 11. *Feijão boca preta* (black-mouth bean)."

46522. *CEIBA PENTANDRA* (L.) Gaertn. Bombacaceæ. Kapok.
 (*Eriodendron anfractuosum* DC.)

From Guadalajara, Mexico. Presented by Mr. John R. Silliman, American consul. Received September 10, 1918.

"The kapok tree, native in the American Tropics, is widely distributed in the Tropics of both hemispheres. It attains a height of 75 to 100 feet, with wide-spreading horizontal branches, making an attractive ornamental or shade tree. It is often planted along the borders of fields for fence posts. It begins to bear seed pods containing kapok down when about 5 years old, and the yield of pods increases with the age of the tree. Well-developed trees under favorable conditions yield about 7,000 pounds per acre. Kapok can not be spun, but it is an excellent material for pillows, mattresses, life preservers, etc., and its use is rapidly increasing." (*L. H. Dewey*.)

For previous introduction and further description, see S. P. I. No. 45557.

46523 and 46524.

From Los Baños, Philippine Islands. Collected by Mr. N. Catalan, College of Agriculture. Received September 11, 1918.

46523. *ERYTHRINA VARIEGATA* Stickin. Fabaceæ.
 (*E. indica* Lam.)

"*Dapdap*. A tree with brilliant red flowers which form a very showy inflorescence. Seeds collected from a tree on the college farm, June 28, 1918."

46524. *ORMOSIA CALAVENSIS* Azaola. Fabaceæ.

"*Bahai*. The seed is said to be of medicinal value for certain cases of stomach trouble. The tree grows on lower portions of the forest. Seeds collected from a tree on the college farm, July 20, 1918."

46525 to 46530.

From Punta Arenas, Chile. Presented by Mr. John R. Bradley, American consul. Received September 11, 1918.

These beans have been introduced for use in a series of experiments in testing and breeding varieties of plants bearing beanlike seeds, for the purpose of

selecting or developing strains suited to the various conditions obtaining in different parts of the United States.

46525. PHASEOLUS COCCINEUS L. Fabaceæ. **Scarlet Runner bean.**

Large white beans.

46526 to 46530. PHASEOLUS VULGARIS L. Fabaceæ. **Common bean.**

46526. Small white beans.

46527. Light-brown beans.

46528. White and yellowish white beans mixed.

46529. Mixed beans from light yellow to light brown.

46530. Grayish brown beans.

46531. NORMANBYA MERRILLII Beccari. Phœnicaceæ. **Palm.**

From Manila, Philippine Islands. Presented by Mr. E. D. Merrill, acting director of the Bureau of Science. Received September 12, 1918.

"*Bonga de China* or *Bonga de Jolo*. A medium-sized palm with graceful, somewhat curved, pinnate leaves, resembling the common betel-nut palm, but not so tall. The leaves are rather glaucous, and the pretty crimson fruits are borne just below the leaves in medium-sized bunches; the individual fruits are less than 1 inch long. This palm thrives remarkably well in Manila." (Merrill.)

For previous introduction, see S. P. I. No. 42722.

46532 to 46534.

From Jamaica Plain, Mass. Presented by Dr. C. S. Sargent, of the Arnold Arboretum. Received September 13, 1918.

46532. MORUS ACIDOSA Griffith. Moraceæ.

Usually a broad shrub from 3 to 16 feet in height, but occasionally forming a tree 25 feet tall. It is found in the Provinces of Hupeh and Szechwan, China. The leaves are very variable in size and shape and are not used for feeding silkworms. The fruits are dark red or shining black and are quite palatable. (Adapted from *Sargent, Plantæ Wilsonianæ, vol. 3, p. 300.*)

For previous introduction, see S. P. I. No. 45708.

46533. PRUNUS SERRULATA SACHALINENSIS (Schmidt) Makino. Amygdalaceæ. **Sargent's cherry.**
(*P. sargentii* Rehder.)

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

For previous introduction, see S. P. I. 45248.

46534. PRUNUS TOMENTOSA Thunb. Amygdalaceæ. **Bush cherry.**

A broad, vigorous shrub, from northern China; one of the earliest cherries to flower. The flowers are large, with the white petals more or less tinged with red toward the base; the small bright-red, slightly hairy fruits are of good flavor. (Adapted from *Arnold Arboretum Bulletin of Popular Information, No. 19.*)

"The plant thrives and fruits abundantly from Georgia to Canada. The ripe fruits make a delicious jelly." (Bisset.)

For illustrations showing the use of this species as a flowering shrub and as a fruiting plant, see Plates III and IV.



THE DOWNY BUSH CHERRY OF NORTH CHINA. (PRUNUS TOMENTOSA THUNB., S. P. I. No. 46534.)

The extreme hardiness of this species make it a promising dooryard shrub for the northern Great Plains region. It has grown well at Ottawa, Canada. While its flowers are too delicate to make this shrub ideal as an ornamental, it is one of the earliest of all the cherries to bloom, and its dark-green downy foliage and deep-red juicy cherries of good flavor make it a most attractive dwarf fruiting shrub. Worked upon the wild Chinese peach (*Amgdalus davidiana*) it is said to be longer lived than on its own roots. (Photographed by Peter Bisset at the Yarrow Plant Introduction Gardens, Rockville, Md., May 5, 1919; P25126FS.)



FRUITING BRANCHES OF THE DOWNY BUSH CHERRY. (*PRUNUS TOMENTOSA* THUNB., S. P. I. No. 46534.)

The miniature cherries of this North Chinese bush (shown one-half actual size) are refreshingly acid, and an excellent preserve has been made from them. In Canada, where the species does well, it is one of the shrubs recommended for dooryard planting, and it deserves a wide distribution in our northern Great Plains area. Little work has been done yet in the selection of large-fruited seedlings. (Photographed by Peter Bisset, Chico, Calif., May 27, 1918; P24041FS.)

46535. MADHUCA INDICA Gmel. Sapotaceæ.*(Bassia latifolia Roxb.)*

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens. Received September 14, 1918.

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

For previous introduction, see S. P. I. No. 45195.

46536. SOLANUM sp. Solanaceæ.**Potato.**

From Tucuman, Argentina. Tubers presented by Mr. H. F. Schultz, Estacion Experimental Agricola. Received September 17, 1918.

"I am sending you to-day a small lot of the native wild potato, of which it is extremely difficult to get tubers, on account of the very short growing season we had this year. The tubers could not start growth at the accustomed time on account of prolonged drought in early summer, and it appears that they suffered later on through the extremely wet weather of the latter part of summer." (*Schultz.*)

46537 to 46559. PAPAVER SOMNIFERUM L. Papaveraceæ. Poppy.

From Calcutta, India. Presented by Mr. James A. Smith, American consul general, who obtained them from the Economic Botanist to the Government of the United Provinces. Received September 17, 1918. Information by Mr. Smith.

46537. No. 1. *Katdi danti*. From Rae Bareilly.

46538. No. 2. *Ujli danti*. Big Posti. From Rae Bareilly.

46539. No. 3. *Posti*. From Faizabad.

46540. No. 4. *Kataila*. From Faizabad.

46541. No. 5. *Bharbharwa*. From Faizabad.

46542. No. 6. *Posti*. From Bahraich.

46543. No. 7. *Bhagalpur*. From Bahraich.

46544. No. 8. *Bhagalpur*. From Bahraich.

46545. No. 9. *Chinsarwa*. From Bahraich.

46546. No. 10. *Chinsarwa*. From Bahraich.

46547. No. 11. *Kan phatwa*. From Bahraich.

46548. No. 12. *Kataila*. From Bahraich.

46549. No. 13. *Kali danti*. From Ghazipur.

46550. No. 14. *Golgalwa*. From Ghazipur.

46551. No. 15. *Bhagwatia*. From Ghazipur.

46552. No. 16. *Jeliwa*. From Ghazipur.

46553. No. 17. *Hariella*. From Etawah.

46554. No. 18. *Kali danti*. From Etawah.

46555. No. 19. *Kataila*. From Etawah.

46556. No. 20. *Posti*. From Lucknow.

46557. No. 21. *Baunia*. From Lucknow.

46558. No. 22. *Mandrass*. From Lucknow.

46559. No. 23. *Kataila*. From Lucknow.

46560. ALLIUM TRIQUETRUM L. Liliaceæ.

From Algiers, Algeria. Bulbs presented by Dr. L. Trabut. Received September 18, 1918.

"Used by the natives as a vegetable. Resembles a leek. Plant the bulbs 8 inches apart and not very deep." (*Trabut.*)

46561 and 46562. COPERNICIA CERIFERA Mart. Phœnicaceæ.**Wax palm.**

From Brazil. Presented by Mr. H. M. Curran. Received September 6, 1918. Quoted notes by Mr. Curran.

- A palm 25 to 30 feet high with fan-shaped, rather finely cut leaves 2 to 3 feet in diameter. The wax is extracted by drying the leaves in the sun, when the wax appears in the form of a powder. The fruit is valued for hog feed. The trunks are extensively employed in building houses. (Note by *Dorsett, Shamel, and Popenoe.*)

46561. "Seeds from Pernambuco, Brazil."

46562. "Seeds from Bahia, Brazil."

For previous introduction and further description, see S. P. I. No. 37866.

46563. ORYZA SATIVA L. Poaceæ.**Rice.**

From Trujillo, Peru. Presented by Mr. A. Martin Lynch. Received September 13, 1918.

Seed of the 90-day rice known as *Italiano*. Introduced for the variety tests being carried on by the United States Department of Agriculture.

46564. ILEX PARAGUARIENSIS St. Hil. Aquifoliaceæ. Yerba maté.

From Cairo, Egypt. Presented by Mr. F. S. Walsingham for the director, Horticultural Section, Gizeh Branch, Ministry of Agriculture. Received September 14, 1918.

A small evergreen tree, native of Paraguay and Brazil, whose leaves are roasted and ground to make the Paraguay tea of commerce. (Adapted from *Friderici, Tropenpflanzen*, p. 776.)

For previous introduction with full description, see S. P. I. No. 43456.

46565. AVENA STERILIS L. Poaceæ.**Oats.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received September 14, 1918.

"Variety *culta*. Several kinds in mixture." (*Trabut.*)

46566. PYRUS COMMUNIS × SEROTINA. Malaceæ.**Pear.**

From Avery Island, La. Cuttings presented by Mr. E. A. McIlhenny. Received September 17, 1918.

"This pear originated in the orchard of Mr. E. A. McIlhenny, Avery Island, La. Mr. McIlhenny has a LeConte orchard, 8 or 9 years old, propagated from trees made from cuttings. The original trees from which the cuttings were taken have been lost. Eight trees in the LeConte orchard are of the new type

and differ materially from the LeConte trees. The new type is spreading in habit and has roundish fruit about as large as a medium-sized apple. The fruit is of fair quality, comparing favorably with LeConte. It is believed that the eight trees are bud sprouts from a limb or branch from which the original cuttings were taken. The fact that there are only eight trees would indicate that there was a limited supply of wood. This pear is of interest because up to this time it has been practically free from fire-blight, while the LeConte trees in the same orchard have blighted badly." (*B. T. Galloway*.)

46567. CAPRIOLA INCOMPLETA (Nees) Skeels. Poaceæ. Grass.
(*Cymodon incompletus* Nees.)

From Johannesburg, South Africa. Presented by Mr. J. Burt Davy. Received September 18, 1918.

"This species spreads by surface runners and does not produce stolons as does *C. dactylon*. It is difficult to collect seed, as the grass is so closely grazed by stock of all sorts that it is difficult to find mature seed." (*Davy*.)

46568 to 46572.

From Canton, China. Presented by Mr. G. Weidman Groff of the Canton Christian College. Received September 23, 1918. Quoted notes by Mr. Groff.

46568 to 46570. LITCHI CHINENSIS SONBER. Sapindaceæ. Lychee.
(*Nephelium litchi* Cambess.)

46568. "*Shanchi*, or mountain lychee. One of the wildest forms of lychee growing in the Tsenyuen district. Especially valuable as stock. July 17, 1918."

46569. "*Wai chi*: one of the edible forms. Fruit from the orchards of Canton Christian College. July 17, 1918."

46570. "*Loh haai tuen*: an edible lychee. Secured from orchards of the Canton Christian College. July 17, 1918."

46571. MYRICA RUBRA Sieb. and Zucc. Myricaceæ. Yang mei.

"*Shui yeung mui*. A very interesting fruit from Canton. A kind of plumlike fruit common on the market of Canton in the month of May. This fruit makes a most attractive appearance, and it is always marketed with the dark-green leaves attached to the fruit. In general appearance it is not unlike a strawberry, but it is more rounded. It has a roughened skin and is quite acid in taste. There is but one seed, which is difficult to detach from the flesh. July 18, 1918."

An old tree as it grows in China is shown in Plate V, while Plate VI shows fruits of an improved variety.

46572. PRUNUS MUME Sieb. and Zucc. Amygdalaceæ. Japanese apricot.

"These fruits, known on the Chinese (Cantonese) markets as *Hang mui*, are quite common in Canton in the month of May. The fruit is somewhat like an apricot. It is said there are several different types. A bitter principle exists in these particular fruits, but they make a very fine jelly. This number has possibilities as a cultivated fruit or as a stock. July 18, 1918."

46573. AZADIRACHTA INDICA Juss. Meliaceæ. Neem tree.
(Melia azadirachta L.)

From Sibpur, near Calcutta, India. Presented by Mr. G. T. Lane, curator of the Royal Botanic Garden. Received September 14, 1918.

A large tree, sometimes 50 feet tall, native to India. The pinnate leaves are made up of 9 to 15 ovate, serrate leaflets. The white, fragrant flowers hang in graceful panicles and are followed by clusters of ovoid, dark-purple drupes the size of an olive. The wood resembles mahogany and takes a beautiful polish. It is used in making furniture, carts, ships, agricultural implements, and Hindu idols. The sap is used in the spring in making a cooling drink. A gum, which exudes from the bark, is used as a stimulant. Margosa oil, extracted from the pulp of the fruits by boiling or by pressure, is an acrid, bitter oil used in medicine and in dyeing. The seeds are employed in killing insects. (Adapted from *Brandis, Forest Flora of India, p. 67.*)

46574. PERSEA AMERICANA Mill. Lauraceæ. Avocado.
(P. gratissima Gaertn. f.)

From Coyacan, Mexico. Presented by Mrs. Zelia Nuttall. Received September 25, 1918.

"When Mr. Popenoe was here lately he asked me what variety of aguacate I thought the best I had ever tasted, here or in other countries. I told him that I considered those of a certain kind grown on my own place, Casa Alvarado, the finest in flavor and creaminess; besides, the skin was so thin it could be peeled off as readily as that of a ripe peach. I was able to let him try the first ripe ones of this year's crop, and he was delighted with them and asked me to send him lots of seeds." (*Mrs. Nuttall.*)

46575. DACRYDIUM CUPRESSINUM Soland. Taxaceæ. Rimu.

From Auckland, New Zealand. Presented by Mr. H. R. Wright. Received September 24, 1918.

"Rimu seed. Prettiest of all our native trees: a real treasure." (*Wright.*)

This pine is one of the most beautiful objects in the New Zealand bush. Its pale-green drooping branches differ from those of any other forest tree. The leaves are only small prickles running up a long stem, from which branch other small stems whose united weight causes the main stem to hang like the branches of the weeping willow. The whole tree, when young, has the appearance of a lycopodium. The fruit is tiny, but beautiful, the nut being blue-black and the cup red. The timber is red and yellow and beautifully marked. It is used to great advantage in dados, panels, and for ceilings. The Taranaki rimu is especially straight in the grain and very resinous. It is much used for bridge building in that district. (Adapted from *Laing and Blackwell, Plants of New Zealand, p. 74.*)

46576 to 46586.

From eastern Asia. Cuttings collected by Prof. F. C. Reimer, superintendent, Southern Oregon Experiment Station, Talent, Oreg. Received April 16, 1918. Numbered September 31, 1918. Quoted notes by Prof. Reimer.

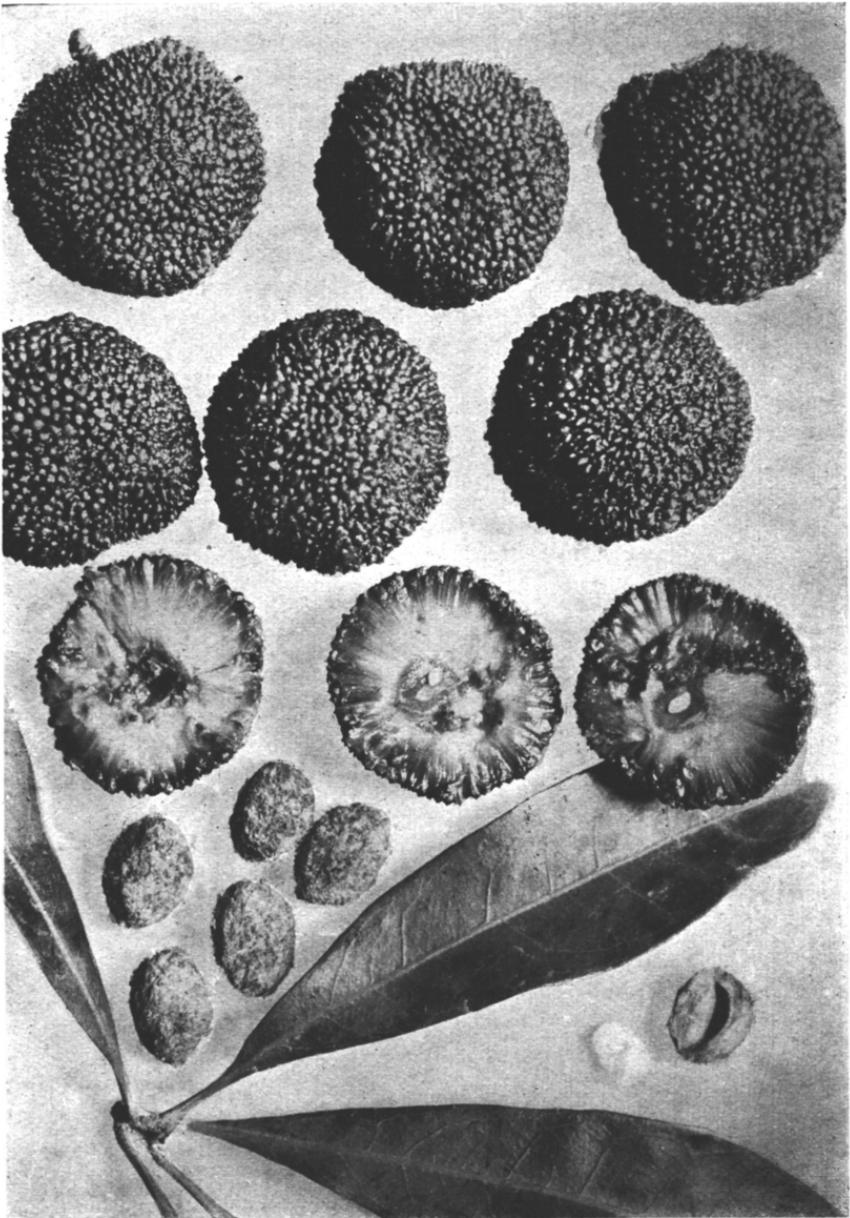
46576. PYRUS sp. Malaceæ. Pear.

"(No. 51. *Mi li*. Obtained at Maoshan, near Malanyu, Chibli, China.) This is a roundish medium-sized pear, about 2 inches in diameter. It is yellow in color, and the calyx is deciduous. The flesh is firm and



AN OLD TREE OF THE YANG MEI IN SHANGHAI. (MYRICA RUBRA SIEB. AND ZUCC., S. P. I. NO. 46571.)

Its sea-green foliage and carmine-colored fruits the size of small plums make this a very attractive park tree. Its slow growth has doubtless interfered heretofore with its figuring anywhere very largely as an orchard tree, but its freedom from disease and ability to grow on rocky soils taken in connection with the excellent character of its fruits entitle it to much more attention than has been given to it so far. In Canton fruiting branches of it are common on the markets in May. In California trees have fruited in July. (Photographed by F. N. Meyer, Jessefield Park, Shanghai, China, June 11, 1915; P12298FS.)



FRUITS, SEEDS, AND LEAVES OF AN IMPROVED VARIETY OF THE YANG MEI.
(*MYRICA RUBRA* SIEB. AND ZUCC., S. P. I. NO. 46571.)

Whereas in Japan the *yama momo* (mountain peach), as it is called, is a fruit of comparatively little importance, in parts of China, where it is called *yang mei* or *nagi*, various distinct horticultural varieties have been developed. The fruits of these vary in size from that of a cherry to that of a medium-sized plum, in color from dull white to deep carmine, and in flavor from very acid to refreshingly sweet. The tree is evergreen and when in fruit strikingly beautiful. It is a slow grower and difficult to transplant. The fine varieties are worked on small-fruited seedling stocks. In America trees have fruited in September at Del Monte and Chico, Calif., and specimens are growing at Brooksville, Fla. This species grows wild in rather poor but well-drained rocky soils in semishaded localities and will stand temperatures of 113° F. The showy color of its fruit, the intense carmine of their juice, the ability of the tree to grow in rocky semishaded localities, and the various uses to which its fruit can be put should entitle the *yang mei* to the serious consideration of American horticulturists. For description of the introduction of seeds of the *yang mei*, see S. P. I. No. 46571. (Photographed by F. N. Meyer, Hangchow, Chekiang, China, June 30, 1915; P13220FS.)

46576 to 46586—Continued.

juicy, and the grit cells are not noticeable. The flavor is sweetish and the quality only fair. In some places in northern China this has proved the most profitable variety."

46577. PYRUS sp. Malaceæ.

Pear.

"(No. 52. *Tang li*. Obtained at Maoshan, near Malanyu, Chihli, China.) This is a large pear, ovate or ovate-oblong in shape, and has a russet color. The calyx is deciduous. The flesh is firm, and the grit cells not noticeable. The flavor is sweet and of fair quality. This is an interesting variety, since it shows some of the characteristics of *Pyrus ussuriensis*, especially in leaf characters, while the color of the fruit is not characteristic of this species. It may be a hybrid with *P. ussuriensis* as one of the parents."

46578. PYRUS sp. Malaceæ.

Pear.

"(No. 53. *Fo chien hsi*. Obtained at Maoshan, near Malanyu, Chihli, China.) This pear is of medium size, slightly flattened, yellowish in color; the calyx is deciduous; the flesh is hard, juicy, and rather sweet. It is an excellent shipper and keeper. Highly regarded in northern China."

46579. PYRUS sp. Malaceæ.

Pear.

"(No. 55. *Ma li*. Obtained at Maoshan, near Malanyu, Chihli, China.) This is a medium to large flat pear, yellow in color, russet toward the base, and covered with small light dots. It has a deciduous calyx, and the stem is of medium length. The flesh is firm, rather coarse, sweet, and fair in quality. It ripens the latter part of August in northern China."

46580. PYRUS sp. Malaceæ.

Pear.

"(No. 58. *Yarb li*. Obtained at Maoshan, near Malanyu, Chihli, China.) This is the most widely grown pear in northern China. It is of large size and resembles the *Bartlett* in shape. It has a beautiful, clear, light-yellow color. The flesh is firm, juicy, and sweet, and free from grit cells. This pear possesses extraordinary keeping qualities and can be purchased at any time throughout the entire winter. It is in best condition for eating during the latter part of winter and early spring."

46581. PYRUS sp. Malaceæ.

Pear.

"(No. 56. *Chieh li*. Obtained at Maoshan, near Malanyu, Chihli, China.) This pear is of medium size, varying from ovate to obovate in shape and dull greenish yellow in color. The calyx is persistent. The flesh is soft, very juicy, and of fair quality. It ripens about the first of September. This is a variety of *Pyrus ussuriensis*, and should prove valuable in breeding work."

46582. PYRUS PHAEOCARPA Rehder. Malaceæ.

Pear.

"(No. 36. From Chosen (Korea).) A pear which is used as a root-stock for cultivated pears at Seoul. This type produces its fruit in clusters of three to eight. The pears are from one-half to three-fourths of an inch in diameter, roundish or short turbinate in shape, brown or russet in color, and usually have three, or rarely two or four, covered cells or seed cavities. The trees which I saw were still young and from 6 to 12 feet high. The young shoots are densely pubescent. The leaves are of medium size, and the margins are crenate or bluntly serrate.

46576 to 46586—Continued.

These trees had evidently grown from the rootstock of some cultivated varieties of pears. Of no value except possibly as a stock in this country."

46583 and 46584. *PYRUS SEROTINA* Rehder. Malaceæ. Pear.

46583. "(No. 38. *Imamura Aki*. Obtained at Yokohama, Japan.) This is one of the best varieties of pears in Japan and Chosen (Korea). It is a large, russet pear and distinctly ovoid in shape. The fruit ripens late in the fall and is in good condition to eat during early winter. In quality it ranks among the best Japanese pears."

46584. "(No. 39. *Meigetsu*. Obtained at Yokohama, Japan.) This is considered the very finest pear in Japan and Chosen (Korea). It is a very large pear, oblong or oblong-elliptical in shape, and of bright russet color. The tree is very vigorous and productive. Should be thoroughly tested in this country, especially for blight resistance."

46585 and 46586. *PYRUS USSURIENSIS* Makim. Malaceæ. Pear.

46585. "(No. 50. *Ta suan li*. Obtained at Maoshan, near Malanyu, Chihli, China.) This is one of the most interesting and may prove one of the most valuable pears that I saw in China. It is very popular in the mountain districts northeast of Peking. The fruit is medium to large in size, slightly flattened in shape, and greenish yellow in color. It has a persistent calyx, and the stem is medium to long. The flesh is hard, possesses large grit cells around the core, and has a very tart flavor. It is an excellent keeper, often remaining in good condition until early spring under suitable conditions. While it can not be recommended as a desirable commercial variety, it should prove of great value in breeding blight-resistant and hardy varieties for cold regions. In our work the wild *Pyrus ussuriensis* has shown greater resistance to fireblight than any other species, and since this species also endures more cold than any other, this variety should prove of great value in breeding work."

46586. "(No. 54. *E' li* or *nah li*. Obtained at Maoshan, near Malanyu, Chihli, China.) The fruit of this pear is very large, of oblong shape and greenish color. It ripens the latter part of September, is very fragrant, and of poor flavor. The calyx is persistent. It is to be regretted that the flavor is not better; however, its large size, and the fact that it belongs to *Pyrus ussuriensis* makes it a promising variety for breeding purposes."

46587. *PYRUS USSURIENSIS* Maxim. Malaceæ. Pear.

From China. Cuttings collected by Prof. F. C. Reimer, superintendent, Southern Oregon Experiment Station, Talent, Oreg. Received April 16, 1918. Numbered September 31, 1918. Quoted notes by Prof. Reimer.

"(No. 59. *Hung li*. Obtained at Maoshan, near Malanyu, Chihli, China.) This pear is medium to almost large in size, round or roundish oblong in shape, and yellow with an attractive red blush. The flesh is very firm, juicy, and sweet, and only fair in quality. The fruit ripens during the latter part of September and has remarkable keeping qualities, being found on the markets until late winter. It is probably of hybrid origin."

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