

UNITED STATES DEPARTMENT OF AGRICULTURE



INVENTORY No. 76



Washington, D. C.

Issued February, 1926

SEEDS AND PLANTS IMPORTED BY THE OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION, BUREAU OF PLANT INDUSTRY, DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1923 (S. P. I. NOS. 57680 TO 58023)

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INTRODUCTORY STATEMENT

AS WITH the preceding inventory (No. 75), the present number contains numerous locally developed strains of cereals and other crop plants. These have been obtained either directly by representatives of the department traveling abroad or through the ever-widening avenues of exchange with foreign agricultural and botanical institutions. The explorations of H. V. Harlan in the Mediterranean region and India were discussed at some length by David Fairchild in the introductory statement to Inventory No. 75. In May, 1923, Doctor Harlan was in Egypt. From that country he sent a number of varieties of barley (*Hordeum vulgare pallidum*; Nos. 57750 to 57755) and also an Abyssinian emmer (*Triticum dicoccum*; No. 57756). By the end of the month he had reached India, where he sent from Poona a collection of seeds, including several legumes for trial as cover crops, and eight local varieties of sorghum (*Holcus sorghum*; Nos. 57835 to 57842). Early June found him in northern India and Kashmir, where several barleys (*Hordeum vulgare pallidum*, Nos. 57892 to 57898) were collected, in addition to a number of varieties of wheat (*Triticum* spp.; Nos. 57901 to 57911) and several leguminous plants.

In addition to the cereals and forage crops which have been obtained through this channel, the present inventory describes a collection of 14 varieties of rice (*Oryza sativa*; Nos. 57868 to 57881) from the Philippines, sent through the courtesy of Adrian Hernandez, Director of the Bureau of Agriculture; a species of clover from high altitudes in Africa (*Trifolium johnstoni*; No. 57698), presented by our valued correspondent, Dr. J. Burt Davy; 25 varieties of alfalfa (*Medicago sativa*; Nos. 57705 to 57729) developed by plant breeders at the Bathurst Experiment Station in South Africa; a wild red clover (*Trifolium pratense*; No. 57939) from Scotland; and seeds of several hardy crop plants from Ekaterinoslav, Russia.

The urgent desirability of breeding disease-resistant varieties of sugar cane (*Saccharum officinarum*) has led to the introduction of many strains of this plant from the Orient, the West Indies, and other regions; Nos. 57757 to 57769 represent a series of crosses which have been obtained from the Sugar Experiment Station at Paseroean, Java; and Nos. 57781 to 57794 a number of standard Javanese varieties, as well as crosses, from the same place.

The tropical world, far from being explored horticulturally, still continues to yield new species of fruits for cultivation in regions such as Florida, southern California, Hawaii, Porto Rico, and the Philippines. From the temperate re-

gions of the globe, however, it is difficult to obtain edible fruits unknown to horticulture. Pomological varieties of real merit may be introduced, and it is worthy of note that in recent years more and more of these are coming from the newly developed regions of the globe rather than from Europe, as was the case in the early days of American horticulture. Salvador Izquierdo, of Chile, who has assembled at his place near Santiago one of the finest collections of fruit trees in South America, sends seven new peaches (*Amygdalus persica*; Nos. 57686 to 57692) which he thinks worthy of cultivation in the United States. H. R. Wright, whose New Zealand fruits have already shown much promise in this country, sends from Auckland seven new peaches (*Amygdalus persica*; Nos. 57912 to 57918), several interesting plums (*Prunus* spp.; Nos. 57919 to 57926), and a new pear (*Pyrus communis*; No. 57927), obtained as a seedling of the Bon Chrétien. The King Cole apple (*Malus sylvestris*; No. 57937), sent by its originator, C. F. Cole, of Melbourne, Victoria, Australia, is recommended as resistant to the woolly aphis, and its fruit is of good quality and excellent for shipping. Specimens which Mr. Cole sent from Melbourne by parcel post reached Washington after a journey of six weeks in excellent condition for eating.

In the field of tropical and subtropical fruits this inventory contains a number of promising acquisitions. From Shanghai, China, Col. Clyde S. Ford has sent trees of the large, loose-skinned Swatow orange (*Citrus* sp.; No. 57693), well known and highly appreciated in China. In line with the effort to obtain good stock plants on which to graft the best varieties of the Japanese persimmon cultivated in the United States, Rev. A. S. Cooper has sent from Hupeh Province in central China seeds of the wild *Diospyros kaki* (No. 57733). Attention was directed to this plant three years ago by E. H. Wilson, of the Arnold Arboretum, who believes, from having observed its habits and requirements in its native home, that it will prove one of the best stock plants for the cultivated varieties of the same species.

Nos. 57701 and 57771 represent two lots of plants of the true breadfruit (*Artocarpus communis*), the first lot coming from the Hawaiian Islands and the second from the Canal Zone. Efforts to establish this classic tree of Polynesia in southern Florida have not been successful up to the present, but they will be continued. Its congener, the jack fruit (*A. integræ*), has in recent years come into bearing at Coconut Grove, near Miami, Fla.

It seems strange that we should be introducing superior varieties of the cherimoya (*Annona cherimola*), a native American fruit, from a region as distant as Australia. It appears, however, that this tree has found a congenial home in Queensland and that seedling forms of superior merit have originated there. Pink's Mammoth (No. 57799), from the description given by A. H. Benson, seems to be a finer variety than any which has been grown either in California or Florida.

The giant raspberry of Hawaii (*Rubus macraei*; No. 57849), to which attention was called by Mr. Rock several years ago, has been reintroduced for the benefit of North American plant breeders. Experience indicates that this species may not prove adapted for open-air culture in any part of the continental United States. Like numerous other species of *Rubus* which we have introduced from tropical and subtropical regions, it is exacting in its requirements and withstands little cold.

From the Philippines P. J. Wester sends a rare citrus fruit, the tizon (*Citrus nobilis papillaris*; No. 57854), believed to be a natural hybrid between the mandarin and the pomelo. Dr. A. Robertson Proschowsky forwards from Nice seeds of a primitive form of the plantain (*Musa paradisiaca seminifera*; No. 57859), desired by plant breeders in the American Tropics for use in connection with the attempt to breed new forms of bananas resistant to the Panama disease (*Fusarium cubense*). Henry Pittier's peculiar variety of avocado (*Persea americana*; No. 58019) from Venezuela and Frère J. Gillet's wild *Strychnos* from the Belgian Congo (*Strychnos gillettii*; No. 58020) will both be interesting for trial in southern Florida and the West Indies.

The introduction of Manila hemp, or abaca (*Musa textilis*; Nos. 57694 to 57696) is in line with the department's attempt to establish this valuable fiber plant in tropical America. From western Java Carl Hartley has sent an edible chestnut (*Castanopsis argentea*; No. 57732) which will be tested alongside the other subtropical species of *Castanopsis* and *Castanea* which Mr. Rock has recently obtained in Yunnan. Señor Tamayo, of Ecuador, who has done much to advance the work of plant introduction in that country, sends seeds of several ornamental plants; a tomato (*Lycopersicon esculentum*; No. 57744) which will be tested by breeders

in this country; and a wild potato (*Solanum* sp., No. 57747), also for the use of breeders.

Our efforts to introduce wild South African species of gladiolus for the use of American lovers of this handsome flower have been somewhat discouraging, because of the prohibitive prices which the bulbs command, but it is hoped eventually to obtain many species on a basis of exchange with plantsmen in South Africa who desire material from this country. *Gladiolus psittacinus* (No. 57797) has been forwarded by E. Percy Phillips, of Pretoria, and will be propagated for distribution as rapidly as possible. With his customary generosity, G. H. Cave, of Darjiling, has sent a number of ornamental plants of the Himalayan region, which are described under Nos. 57882 to 57890.

The botanical determinations of seeds introduced have been made and the nomenclature determined by H. C. Skeels, and the descriptive notes have been prepared by Paul Russell, who has had general supervision of this inventory.

WILSON POPENOE,
Agricultural Explorer, Acting in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., August 31, 1925.

INVENTORY 1

57680. PRUNUS⁷CERASOIDES⁷D. Don.
(*P. puddum* Roxb.). Amygdalaceæ.
Cherry.

From Benenden, Kent, England. Seeds presented by Collingwood Ingram. Received September 17, 1923.

"The pendulous flowers are campanulate and deep rosy red. They are said to appear before the foliage, which is a bright glossy green. The tree, native to the highlands of Burma, is said to endure some frost in its native country." (Ingram.)

57681. OPSIANDRA MAYA O. F. Cook.
Phœnicaceæ. **Palm.**

From Washington, D. C. Plants presented by O. F. Cook, Bureau of Plant Industry. Received September 21, 1923.

A new genus and species from Peten, Guatemala, discovered and described by O. F. Cook. This palm has a slender, tapering trunk about 6 inches in diameter at the base; it grows to a height of 60 feet or more and is supported on a conical mass of thick roots. The leaves are few, usually about five or six, 8 to 9 feet long with about 90 pinnae on each side of the midrib. The flowers appear several joints below the leaves. The fruit is red and borne in clusters.

The palm is of special interest as having been discovered growing on the ruins of one of the ancient Maya cities. It is a tropical species, of value mainly for botanic gardens and private collections. Adapted from *The Journal of the Washington Academy of Sciences*, vol. 13, p. 132.)

57682. MILLETTIA THONNINGII
(Schum. and Thonn.) Baker. Fabaceæ.

From Loanda, Angola, Africa. Seeds presented by John Gossweiler. Received September 18, 1923.

^f "A beautiful avenue tree of Loanda; it is easily cultivated here, since it grows well with an annual rainfall of only 360 mm. (12 inches) and can readily be propagated by cuttings 2 meters (6 feet) in length. It evidently is a poisonous species" (Gossweiler.)

^f "A very handsome tree, with large drooping racemes of pale-lilac flowers. It grows to a height of 30 to 40 feet, has compound leaves about 6 inches in length, and very narrow woody pods. (Adapted from *Oliver, Flora of Tropical Africa*, vol. 2, p. 128.)

Introduced for department drug-plant specialists in response to a request for fish-poisoning plants.

It should be understood that the varietal names of fruits, vegetables, cereals, and other plants used in this inventory are those under which the material was received when introduced by the Office of Foreign Seed and Plant Introduction and, further, that the printing of such names here does not constitute their official publication and adoption in this country. As the different varieties are studied, their identity fully established, their entrance into the American trade forecast, and the use of varietal names for them in American literature becomes necessary, the foreign varietal 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.

It is a well-known fact that botanical descriptions, both technical and economic, seldom mention the seeds and rarely describe them in such a way as to make possible identification from the seeds alone. Many of the unusual plants listed in these inventories are appearing in this country for the first time, and there are no seed samples or herbarium specimens with ripe seeds with which the new arrivals may be compared. The only identification possible is to see that the sample received resembles seeds of other species of the same genus or of related genera. The responsibility for the specific identifications must necessarily rest with the person sending the material until the plants are grown. If there is any question regarding the correctness of the identification of any plant received from this office, herbarium specimens of leaves and flowers should be sent in so that definite identification can be made.

57683. RUBUS sp. Rosaceæ.

From Likiang, Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received September 29, 1923.

"(No. 9502, August 11, 1923.) Seeds of three species of edible-fruited Rubus, accidentally mixed, collected on the Likiang Snow Range at an altitude of 14,000 feet. These were sent separately last year." (Rock.)

57684 and 57685.

From Ekaterinoslav, Russia. Seeds presented by the Russian Bureau of Applied Botany, through D. Borodin, New York, N. Y. Received June 14, 1923. Numbered July, 1923. Quoted notes by Mr. Borodin.

From the Ekaterinoslav Agricultural Experiment Station. Introduced for department agrostologists.

57684. CHAETOCLOA ITALICA (L.) Scribn.
(*Setaria italica* Beauv.). Poaceæ. **Millet.**

"1914 crop. Originally from Gergana."

57685. ELYMUS SIBIRICUS L. Poaceæ. **Grass.**

"1921 crop."

57686 to 57692. AMYGDALUS PERSICA
L. (*Prunus persica* Stokes). Amyg-
dalaceæ. **Peach.**

From Santiago, Chile. Trees presented by Salvador Izquierdo. Received July 9, 1923. Quoted notes by Señor Izquierdo, unless otherwise stated.

"These are my best canning varieties."

57686. "Selection No. 1. A variety originated at Señor Izquierdo's nursery, Santa Ines. It is described as a large white cling, round in form, very sweet, and of pleasant flavor. It ripens there in February and is considered excellent both for table use and for preserving." (Wilson Popenoe.)

For previous introduction, see S. P. I. No. 54622.

57687. "Selection No. 2. A variety originated very recently at Señor Izquierdo's nursery, Santa Ines, and not yet named. It is a cling of somewhat elliptical form with a sharp point at the apex, white fleshed, and weighing up to 450 grams. It ripens in February at Santa Ines and is considered to be a promising new sort." (Wilson Popenoe.)

For previous introduction, see S. P. I. No. 54623.

57686 to 57692—Continued.

57688. "No. 273. *Aurora*. An excellent variety maturing in March at Santa Ines. It is good for table use and suitable for commercial purposes."

57689. "No. 518. *Pomona Mejorada (improvecd Pomona)*. Flesh yellow, sweet and juicy. A vigorous and hardy variety."

57690. "No. 520. *Reina Elena*. Famous for its fine sweet flavor, yellow color, and perfect form; keeps well for a long time and is especially good for shipping."

57691. "No. 520-b. *Rey Alberto*. Large, red skinned, yellow fleshed, sweet and juicy, with the pit not colored, maturing early in April. An excellent variety for preserving."

57692. "No. 522. *Transparente de Conservas*. The first white peach to ripen. Flesh white, very transparent; pit not colored; especially fragrant; excellent for preserving. Resistant to disease."

57693. CITRUS sp. Rutaceæ.

From Shanghai, China. Trees presented by Col. Clyde S. Ford, United States Postal Agency. Received July 24, 1923.

"These are trees of the large loose-skinned Swatow orange so highly appreciated in China." (Ford.)

Introduced for department citriculturists.

57694 to 57696. MUSA TEXTILIS Née. Musaceæ.

From the Philippine Islands. Seeds obtained by L. H. Dewey, Bureau of Plant Industry. Received July 7, 1923.

The plants grow in the Philippine Islands, chiefly in volcanic soils of rather loose texture where there is an abundant rainfall but excellent natural drainage. The abaca will probably grow only in warm, moist tropical regions, and it is possible that it will succeed in the Canal Zone." (Dewey.)

Seeds to be grown for department specialists engaged in fiber-plant investigations.

57694. No. 1. 57696. No. 3.

57695. No. 2.

57697. SCLEROSPERMA sp. Phœnicaceæ. Palm.

From Kisantu, Belgian Congo. Seeds presented by Frère J. Gillet. Received July 11, 1923.

"A superb stemless palm with large entire leaves which should be of interest as a greenhouse plant." (Gillet.)

Received as *Sclerosperma weddendii*, for which a place of publication has not been found.

57698. TRIFOLIUM JOHNSTONI Oliver. Fabaceæ. Clover.

From Kew, England. Seeds presented by Dr. J. Burtt Davy. Received July 11, 1923.

"At high altitudes in East Africa clover is one of the prominent forage plants. It grows where the temperature probably never exceeds 85° F. and where for the greater part of the year it is much below this point. However, no frosts occur in this region." (H. L. Shantz.)

A smooth perennial clover with the habit of white clover (*Trifolium repens*), found at an altitude of 10,000 feet on Kilimanjaro, Tanganyika Territory. The leaves are long stemmed, with membranous leaflets and globose flower heads about an inch in diameter. (Adapted from *Transactions of the Linnean Society, ser. 2, vol. 2, p. 331.*)

For previous introduction, see S. P. I. No. 56458.

57699. DIOSCOREA sp. Dioscoreaceæ. Yam.

From Oneroa, Mangaia Island, Cook Islands. Tubers presented by Geoffrey Henry. Received July 5, 1923.

"*Maararau*. Plant the same as ordinary yams; prepare the soil and put the tubers 1 or 2 inches underground." (Henry.)

"The rather small tubers received are more or less globose and have a slightly pink inner skin and white flesh. The quality of this yam when cooked is very good." (R. A. Young.)

57700. HORDEUM VULGARE PALLIDUM Seringe. Poaceæ. Six-rowed barley.

From Egypt. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received July 17, 1923.

"(No. 101. Markaz of Ithbia, Province of Sharqiyh. May 14, 1923.) A threshed sample from the threshing floor, Soheich Estate." (Harlan.)

Introduced for department cerealists.

57701. ARTOCARPUS COMMUNIS Forst. Moraceæ. Breadfruit.

From Honolulu, Hawaii. Trees presented by W. T. Pope, horticulturist, Agricultural Experiment Station. Received July 19, 1923.

"There is but one kind of breadfruit in Hawaii; while there are slight variations, due probably to local conditions, there are no true varietal differences." (Pope.)

This variety, which now grows wild throughout the Hawaiian Islands, was originally introduced from Tahiti. It has large, rough, ovate, deeply lobed leaves, and the staminate flowers appear in large yellow catkins. The large-stemmed fruit is either round or oblong and varies from 5 to 8 inches in diameter. The thick, tough rind, brownish at maturity, incloses a firm, very starchy, and somewhat fibrous pulp which becomes mealy when cooked, slightly resembling a dry sweetpotato, and is much esteemed as an article of diet. The tree is propagated by suckers or by layering. (Adapted from G. P. Wilder, *Fruits of the Hawaiian Islands, p. 100, pl. 48, under Artocarpus incisa.*)

For previous introduction, see S. P. I. No. 57224.

57702 and 57703.

From Burringbar, New South Wales. Seeds presented by B. Harrison. Received July 2, 1923.

57702. MICROCITRUS AUSTRALASICA (F. Muell.) Swingle (*Citrus australasica* F. Muell.). Rutaceæ. Finger lime.

"The finger lime is one of the most curious and interesting of the citrus fruits. The young plants have more or less horizontally arranged branchlets, with very short internodes and small oval young leaves, these much shorter than the stiff, erect spines. The flowers are small, and the fruits are long and slender, 2½ to 4 inches long, with a loose pulp filled with a sour, rather strongly pungent juice. The shrub is native to the mountain scrubs of the coastal region of northern New South Wales and Queensland." (W. T. Swingle.)

For previous introduction, see S. P. I. No. 55588.

57703. RANDIA sp. Rubiaceæ.

"A shrub 6 feet high with white sweet-scented flowers resembling those of orange blossoms." (Harrison.)

57704. BERBERIS BEALEI Fortune. Berberidaceæ. Barberry.

From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky. Received July 2, 1923

An evergreen shrub of a stiff, erect habit, with thick unbranched stems 10 feet or more in length bearing a few leaves at the top. The leaves, over a foot in length, are composed of 7 to 13 leaflets, which in this variety at times reach a length of 8 inches and a width of 6 inches. The flowers, lemon yellow and delightfully fragrant, are in numerous slender racemes 6 to 9 inches long, terminating the stems, and the oblong purple berries are about half an inch in length. Native to China. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 244.*)

57705 to 57729. MEDICAGO SATIVA L.
Fabaceae. Alfalfa.

From Bathurst, Cape of Good Hope, Union of South Africa. Seeds presented by the manager, Bathurst Experiment Station. Received July 2, 1923. Quoted notes by the manager.

57705. "No. 1. Plat 19, subplat H, rows 2 and 3. I consider this the best of the root selections from the Chinese variety, as it is very early and a quick grower."

57706. "No. 2. Selection from *Tamworth.*"

57707. "No. 3. Plat 19, subplat B, row 7. Selection from *Chinese.*"

57708. "No. 4. Plat 15. Selection from *Arabian.*"

57709. "No. 5. Selection from *Chinese.*"

57710. "No. 6. Plat 19, subplat A, row 3. Selection from *Chinese.*"

57711. "No. 7. Plat 15, subplat 4. Selection from *Chinese.*"

57712. "No. 8. Plat 19, subplat D, row 5. *Medicago falcata* × *Hansen.*"

57713. "No. 9. Plat 19, subplat C, row 3."

57714. "No. 10. Selection from *Turkestan.*"

57715. "No. 11. Plat 19, subplat A. Selection from *Chinese.*"

57716. "No. 12. Plat 19, subplat A, row 12. Selection from *Chinese.*"

57717. "No. 13. *Cossack* × *Hansen.*"

57718. "No. 14. Hybrid flower, '*Falcata*' × *Hansen.*"

57719. "No. 15. Plat 19, subplat A, row 11. Selection from *Chinese.*"

57720. "No. 16. *Egyptian.*"

57721. "No. 17. From three plants of *Arabian.*"

57722. "No. 18. Plat 19, subplat C, row 15. Selection from *Chinese.*"

57723. "No. 19. Plat 19. Selection from *Chinese.*"

57724. "No. 20. Mixed."

57725. "No. 21. Plat 19, subplat H, row 9. Selection from *Chinese.*"

57726. "No. 22. *Chinese.*"

57727. "No. 23. Selection from *Chinese.*"

57728. "No. 24. Plat 19, subplat A, row 3. Selection from *Chinese.*"

57729. "No. 25. Plat 19, subplat C, row 14. Selection from *Chinese.*"

57730. PANDANUS TECTORIUS Parkins.
Pandanaeae.

From Honolulu, Hawaii. Seeds presented by Dr. H. L. Lyon, in charge, Department of Botany and Forestry, Experiment Station of the Sugar Planters' Association. Received July 3, 1923.

This "pandan" is widely distributed throughout the Philippine Islands, being abundant along the seashores, where under favorable circumstances it

reaches a height of 15 to 20 feet. The size and length of the leaves vary greatly. The leaves are split into strips and used for making mats or, when bleached, for weaving hats. The lower part of the ripe fruit is covered by a yellowish red pulp, which is of excellent flavor, although not commonly eaten. (Adapted from *Brown, Philippine Fiber Plants, p. 29.*)

57731. PHOENIX RECLINATA Jacq.
Phœnicaceae. Palm.

From Pretoria, Union of South Africa. Seeds presented by C. P. Lounsbury, Chief, Division of Entomology. Received July 7, 1923.

A bushy or arborescent palm found native in the coastal districts of South Africa, where it sometimes becomes as much as 40 feet in height. The reclinate pinnate leaves are 6 to 9 feet long, with 30 to 50 pairs of leaflets. The elongate berries, about half an inch long, are yellowish when ripe, with a sweetish pulp. (Adapted from *Martoth, Flora of South Africa, vol. 4, p. 49.*)

For previous introduction, see S. P. I. No. 51734.

57732. CASTANOPSIS ARGENTEA
(Blume) A. DC. Fagaceae.
Evergreen chestnut.

From Buitenzorg, Java. Seeds presented by H. J. Wigman, jr., administrator, Botanic Garden. Received July 10, 1923.

"Seeds of an edible chestnut collected in western Java." (*Carl Hartley.*)

An evergreen tree 50 to 60 feet high, with narrow thin leaves 5 to 7 inches long and very dense clusters of spiny burs; each bur is about 2 inches wide and contains normally a single nut an inch in diameter. (Adapted from *Hooker, Flora of British India, vol. 5, p. 621*, and from *Annals of the Royal Botanic Garden, vol. 2, p. 479.*)

For previous introduction, see S. P. I. No. 56461

57733. DIOSPYROS KAKI L. f.
Diospyraceae. Kaki.

From Ichang, China. Seeds presented by Rev. A. S. Cooper, American Church Mission. Received July 6, 1923.

"Collected on the mountains back of Patung Hupeh, China, at an altitude of 6,000 to 8,000 feet." (*Cooper.*)

Introduced for use as stocks for cultivated varieties of the kaki.

57734 to 57741. PHASEOLUS spp.
Fabaceae.

From Balboa, Canal Zone. Seeds presented by R. D. Rands, Bureau of Plant Industry. Received July 6, 1923.

Introduced for department pathologists studying bean diseases.

57734. PHASEOLUS ACUTIFOLIUS LATIFOLIUS G.
F. Freeman. Tepary bean.
Chimbalito.

57735. PHASEOLUS LUNATUS L. Lima bean.
Habitas del pais.

57736 to 57741. PHASEOLUS VULGARIS L.
Common bean.

57736. *Frijoles rosados.*

57737. *Porotos bayos.*

57738. *Porotos colorados.*

57739. *Porotos caballeros.*

57740. "*Triguitos*; from Chile." (*Rands.*)

57741. *Porotos bayos.*

57742 to 57748.

From Ibarra, Ecuador. Seeds presented by J. F. Tamayo. Received July 11, 1923. Quoted notes by Señor Tamayo, unless otherwise stated.

57742. *DATURA* sp. Solanaceæ.

"*Floripondio*. In general appearance this resembles the garden floripondio, but its fruits profusely, and the white flowers are somewhat smaller."

57743. *LUPINUS* sp. Fabaceæ. Lupine.

"*Wild altramuz*. From the Pinllar Ridge. I believe this is an annual and might be suitable as a cover crop in semiarid regions."

57744. *LYCOPERSICON ESCULENTUM* Mill. Solanaceæ. Tomato.

"The plant from which these seeds were taken produced two crops."

57745. *PSIDIUM* sp. Myrtaceæ.

"*Guayabilla*. A wild guava which grows in the hacienda La Victoria, near Ibarra. In the wild state it is a shrub 4 feet high, while under cultivation it becomes 10 feet or more in height. The leaves and flowers are like those of the cultivated guava. It may prove valuable as a stock."

57746. *SALVIA* sp. Menthaceæ. Sage.

"A wild salvia with sky-blue flowers a half inch in diameter, found on waste land and on the edges of cultivated fields. It is herbaceous, about a foot high, and roots at the nodes."

57747. *SOLANUM* sp. Solanaceæ.

"Seeds of a wild potato from La Rinconada."

"A wild solanum which grows abundantly in certain places, preferring the protection of shrub-vegetation along ravines on the paramo. The plant resembles that of the cultivated potato; the tubers, however, are rarely more than an inch long by half an inch in thickness, and they are whitish brown with white flesh. They are attacked by late-blight, as are cultivated potatoes in the same region." (*Wilson Popenoe*.)

57748. *TRIFOLIUM* sp. Fabaceæ. Clover.

"A wild clover with white flowers, collected at La Rinconada."

57749. *DIOSCOREA ALATA* L. Dioscoreaceæ. Greater yam.

From Barbados, British West Indies. Tubers presented by John R. Bovell, Director of Agriculture. Received July 5, 1923.

"*Barbados Red*. There are two varieties of this red yam, one darker than the other, and I am forwarding tubers of the darker one." (*Bovell*.)

"These tubers of the darker strain of the *Barbados Red* yam weigh from 1½ to 2 pounds each and are club shaped. The inner skin is deep purple, and except near the tip of the tuber, where it is pale purple, the flesh is moderately deep purple with scattered fibers of deeper color. This yam cooks mealy and rather dry and is of very good flavor. The color fades somewhat during cooking, leaving the yam an attractive light reddish purple." (*R. A. Young*.)

57750 to 57756.

From Egypt. Spikes collected by H. V. Harlan, Bureau of Plant Industry. Received July 12, 1923. Quoted notes by Doctor Harlan.

57750 to 57755. *HORDEUM VULGARE PALLIDUM* Seringe. Poaceæ. Six-rowed barley.

"From the Province of Sharqiyh."

57750. "(No. 102. Shershema, Markaz of Hehia. May 14, 1923.) Spikes from a field of the delta type of barley."

57750 to 57756—Continued.

57751. "(No. 103. Markaz of Kop Lahr. May 14, 1923.) From the field of Ahmid Selim."

57752. "(No. 104. Markaz of Kop Lahr. May 14, 1923.) Spikes selected from two fields."

57753. "(No. 105. Markaz of Kop Lahr. May 14, 1923.) From the estate of Baron Menase."

57754. "(No. 106. Markaz of Kop Lahr. May 14, 1923.) From a field."

57755. "(No. 107. Markaz of Kop Lahr. May 14, 1923.) From a field."

57756. *TRITICUM DIOCCUM* Schrank. Poaceæ. Emmer.

"(No. 108. Gizeh. May 12, 1923.) Spikes of an Abyssinian emmer sent at this time because a severe storm has since damaged the plats and better spikes may not be obtainable."

57757 to 57769. *SACCHARUM OFFICINARUM* L. Poaceæ. Sugar cane.

From Paseroean, Java. Seeds presented by Dr. J. Kuyper, Assistant Director, Sugar Experiment Station. Received July 17, 1923. Quoted notes by Doctor Kuyper.

"These are all self-crosses."

57757. "*1499 P. O. J.* Of Chunnee blood."

57758. "*1407 P. O. J.*"

57759. "*Katha*. A British Indian cane resembling Chunnee."

57760 to 57769. "All of Kassoe blood."

57760. No. 2721. 57765. No. K 44.

57761. No. 2727. 57766. No. K 89.

57762. No. 2734. 57767. No. K 262.

57763. No. 1117. 57768. No. K 1349.

57764. No. 1177.

57769. "*Kassoe*. Kassoe blood is resistant to the yellow-stripe disease."

57770. *ILEX PARAGUARIENSIS* St. Hil. Aquifoliaceæ. Yerba maté.

From Buenos Aires, Argentina. Seeds presented by Edward F. Feely, commercial attaché, through B. R. Hart, Bureau of Foreign and Domestic Commerce. Received July 19, 1923.

Seeds of yerba maté introduced for the purpose of establishing this interesting beverage plant in the United States.

For previous introduction, see S. P. I. No. 56621.

57771. *ARTOCARPUS COMMUNIS* Forst. Moraceæ. Breadfruit.

From Summit, Canal Zone. Plants presented by Holger Johansen, agronomist, Introduction Garden. Received July 30, 1923.

"The jack fruit (*Artocarpus integra*) has been grown successfully in southern Florida. The closely allied breadfruit, however, has not yet received an adequate trial in that State, and the department is now attempting to introduce seedless forms, which are the only ones worthy of extensive cultivation. These are propagated by cuttings which, as P. J. Wester, of the Philippine Bureau of Science, has shown, can readily be rooted in sand if made in the proper manner. While it is not anticipated that the breadfruit tree will ever become of economic importance in the continental United States, it is thought that it may prove an interesting addition to the list of tropical economic plants which can be grown in the gardens of southern Florida." (*Wilson Popenoe*.)

For previous introduction, see S. P. I. No. 57701.

57772 and 57773. COLOCASIA ESCULENTA (L.) Schott. Araceæ. Taro.

From Honolulu, Hawaii. Seedlings presented by Gerrit P. Wilder, Honolulu, through Willis T. Pope, horticulturist, Hawaii Agricultural Experiment Station. Received July 20, 1923. Quoted notes by R. A. Young.

57772. Wilder seedling No. 351.

"A taro with light-green petioles; the lower part of the petiole is slightly shaded with greenish bronze, and the sinus wing is margined with pale pink."

57773. Wilder seedling No. 354.

"The petioles are plain light green. The plants tend to flower when very young; the inflorescences of the small plants are very small, the total length of the spathe being only about 2½ inches and that of the spadix 1½ inches."

57774 to 57780.

From Berlin, Germany. Seeds purchased from Dr. A. F. Merkel, Deutsche Landwirtschaftsgesellschaft. Received July 9, 1923. Quoted notes by Doctor Merkel.

57774. *LOTUS CORNICULATUS* L. Fabaceæ.

"From Hans Kofahl, agricultural adviser, Zernikow, near Glöwen."

Sent in response to a request for a variety free from hydrocyanic acid.

57775 to 57780. *TRIFOLIUM PRATENSE* L. Fabaceæ. Red clover.

Locally grown seed introduced for department forage-crop specialists.

57775. "From Holstein. This Province has an ocean climate, with ample rainfall."

57776. "The Rhine country, where this clover has been raised for many years, has mild winters and a heavy yearly precipitation. The soil conditions are favorable, sometimes stony, and sometimes diluvial loam."

57777. "This locality is in southern Germany, and the clover is grown on the extensive plains and slopes of the Wasgau and Odenwälder forests and the northern Black Forest. The precipitation is quite heavy."

57778. "Polish red clover, grown under an east-continental climate."

57779. "From Bohemia, where there is a rather dry east-continental climate with severe winters."

57780. "From Silesia, which has rather severe winters. The precipitation is medium and the soil conditions good, being mostly diluvial sandy loam with a loess subsoil. Red clover has been grown here for many years."

57781 to 57794. SACCHARUM OFFICINARUM L. Poaceæ. Sugar cane.

From Paseroean, Java. Cuttings presented by Dr. J. Kuyper, assistant director, Sugar Experiment Station. Received July 19, 1923. Quoted notes by E. W. Brandes.

57781. "D. I. 52. Equals cross between Charibon and Batjan."

57782. "E. K. 28. This variety produces nearly 90 per cent of the sugar cane in Java. It was developed by Edward Karthouse, a private grower."

57783. "2221 P. O. J. Cross between Black Cheribon and Kassoer."

57784. "2222 P. O. J. Cross between Black Cheribon and Kassoer."

57785. "2345 P. O. J. Cross between 100 P. O. J. and Kassoer."

57781 to 57794—Continued.

57786. "2364 P. O. J. Cross between 100 P. O. J. and Kassoer."

57787. "2747 P. O. J. Cross between Lahaina and 2628 P. O. J."

57788. "2752 P. O. J. Cross between 2364 P. O. J. and 1410 P. O. J."

57789. "S. W. 3. Cross between Cheribon and Batjan. This cane was developed at a private mill, the Sempal Wadak."

57790. "Ardjoena. This variety is also an old original cane, not a hybrid."

57791. "Batjan. This is an old standard variety of Java."

57792. "Fidji. This variety has been grown for many years in Java, according to the records, but probably was imported from Fiji."

57793. "Gestreebt Preanger. Similar to Louisiana Striped and possibly identical."

57794. "Labaina. This variety is supposed to be the old Bourbon of the West Indies. It was formerly widely grown in Hawaii."

57795. PANCRATIUM TORTUOSUM Herbert. Amaryllidaceæ.

From Aden, Arabia. Bulbs presented by Raymond Davis, American consul. Received July 19, 1923.

"The leaves remain green throughout most of the season even in the arid deserts around Aden, but the flowers appear only after one of the rare rainy periods, generally within four to seven days. The plants grow abundantly on cliffs and rocky wastes of Arabia and Egypt." (Davis.)

A relative of the well-known American spiderily (Hymenocallis), with beautiful white flowers 3 to 6 inches long and a handsome toothed crown within the corolla, as in Narcissus. The long linear leaves are spirally twisted.

57796. PROTEA ARGENTEA L. (Leucadendron argenteum R. Br.). Proteaceæ.

From Pretoria, Transvaal, Union of South Africa. Seeds presented by the chief conservator of forests, Forest Department. Received July 20, 1923.

Introduced for department specialists experimenting with acid-soil plants.

The *witteboom*, or *silver-leaf pine*, is a beautiful tree found native only in the immediate vicinity of Cape Town, Cape Province, where it grows up to 50 feet in height. The numerous white silky leaves, which are lanceolate and up to 7 inches long, are now an article of commerce, being used for curios, mats, bookmarks, etc.; when dry they take ink or paint and are then sold with texts or small scenes depicted on them. (Adapted from *Sim, Forests and Forest Flora of Cape Colony*, p. 294.)

For previous introduction, see S. P. I. No. 51623.

57797. GLADIOLUS PSITACINUS Hook. Iridaceæ.

From Pretoria, Transvaal, Union of South Africa. Bulbs presented by E. Percy Phillips, Chief, Division of Botany. Received July 20, 1923.

A South African gladiolus with a large globose corm, a stem 3 feet or more in length, and usually four rigid, swordlike leaves 1 or 2 feet long. The many-flowered spike is very lax, reaching a foot or more in length. The upper segments of the flower are dark crimson, while the much smaller lower segments reflexed at the top are red and yellow mixed. (Adapted from *Thiesselton-Dyer, Flora Capensis*, vol. 6, p. 158.)

57798. GOSSYPIUM sp. Malvaceæ.**Cotton.**

From Ceiba, Honduras. Seeds presented by Alexander K. Sloan, American consul. Received June 16, 1922. Numbered July, 1923.

Seeds of a supposedly wild cotton from the Aguan Valley, near Trujillo, Honduras, introduced for department cotton specialists.

57799. ANNONA CHERIMOLA Mill.**Annonaceæ.****Cherimoya.**

From Brisbane, Queensland. Trees presented by A. H. Benson, director of fruit culture. Received July 27, 1923.

"*Pink's Mammoth*. Our best variety, raised from seed imported from Central America many years ago. It is of superb quality and large size, frequently weighing 5 or 6 pounds or more, and contains only five or six seeds, most of which are infertile. It is the finest of the family which I have seen in any part of the world." (*Benson*.)

57800. COLOCASIA ANTIQUORUM Schott.**Araceæ.****Taro.**

From Aitutaki, Cook Islands. Tubers presented by W. T. Hewett. Received July 30, 1923

"*Niue*. A taro with red inner skin and white flesh and of excellent quality when cooked. It is slightly acid when raw." (*R. A. Young*.)

57801. ELAËIS MELANOCOCCA Gaertn.**Phœnicaceæ.****Palm.**

From Balboa Heights, Canal Zone. Seeds presented by Holger Johansen, agronomist, Plant Introduction Garden, Summit. Received July 31, 1923.

A large spreading low palm which grows in low moist land. It is closely related to the African oil palm (*Elæis guineensis*), and a clear oil is extracted from the kernels in small quantities by the natives, who prize it highly for cooking.

For previous introduction, see S. P. I. No. 50480.

57802. PHASEOLUS LUNATUS L. Fabaceæ.**Lima bean.**

From Holguin, Cuba. Seeds presented by Thomas R. Towns. Received July 31, 1923.

"A Lima bean perennial in Cuba." (*Towns*.)

Introduced for department horticulturists.

57803 to 57810. PHASEOLUS spp. Fabaceæ.

from Port of Spain, Trinidad, British West Indies. Seeds presented by R. D. Rands, Bureau of Plant Industry. Received August 1, 1923. Quoted notes by Doctor Rands.

Locally grown varieties introduced for department specialists engaged in bean-disease investigations. Nos. 57803 to 57809 are Venezuelan varieties which were purchased in the market at Caracas.

57803 to 57805. PHASEOLUS LUNATUS L.
Lima bean.

57803. *Tapiramos blancos*.

57804. *Guaracaras blancos*.

57805. *Guaracoles coloradas*.

57806 to 57810. PHASEOLUS VULGARIS L.
Common bean.

57806. *Guaracaro ballo*.

57807. *Guaracotas guacamayas*.

57808. *Ponchas blancas*.

57809. *Ponchas coloradas*.

57810. "A Trinidad variety obtained here."

57811. ANNESLIA PORTORICENSIS**(Willd.) Donn.-Smith (Calliandra portoricensis Benth.). Mimosaceæ.**

From Rio Piedras, Porto Rico. Seeds presented by E. Murray Bruner, forester, Porto Rico Forest Service. Received July 7, 1923.

A very handsome white-flowered shrub or small tree, native to the West Indies, which is cultivated as an ornamental in Honolulu, Hawaii. The branches are slender and erect, and the leaves have 10 to 30 pairs of narrow leaflets. (Adapted from *Rock, Leguminous Plants of Hawaii, p. 21.*)

57812 to 57818.

From India. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received July 23, 1923. Quoted notes by Doctor Harlan.

57812 and 57813. HORDEUM VULGARE PALLIDUM
Seringe. Poaceæ. Six-rowed barley.

57812. "(No. 122. Delhi. June 4, 1923.) Purchased in the market."

57813. "(No. 127. Simla. June 7, 1923.) Barley of the new crop secured from a farmer in the river valley northeast of Simla at an altitude of about 5,700 feet."

57814 to 57818. TRITICUM ÆSTIVUM L. (T. vulgare Vill.). Poaceæ. Common wheat.

57814. "(No. 123. Delhi. June 4, 1923.) Purchased in the market."

57815. "(No. 124. Delhi. June 4, 1923.) Purchased in the market."

57816. "(No. 125. Simla. June 7, 1923.) Local wheat purchased in the market."

57817. "(No. 126. Simla. June 7, 1923.) Local wheat of new crop purchased in the market."

57818. "(No. 128. Simla. June 7, 1923.) Wheat of new crop secured from a threshing floor in the river valley northeast of Simla at an altitude of about 5,700 feet."

57819. TALINUM TRIANGULARE (Jacq.) Willd. Portulacaceæ.

From Manila, Philippine Islands. Seeds presented by P. J. Wester, Bureau of Agriculture. Received July 31, 1923.

An erect, branching herbaceous plant, about 3 feet high, native to the West Indies and recently introduced from Java into the Philippine Islands. The flowers are pink and produced in great profusion. In the Philippines the fleshy, tender leaves are boiled like spinach and served with meat, for which purpose they are excellent. The plant is easily propagated by cuttings. (Adapted from the *Philippine Agricultural Review, vol. 14, p. 365.*)

57820. CARYOPHYLLUS MALACCENSIS (L.) Stokes (Eugenia malaccensis L.). Myrtaceæ. Ohia.

From Honolulu, Hawaii. Seeds presented by Willis T. Pope, horticulturist, Agricultural Experiment Station. Received August 1, 1923.

"The fruit is much esteemed, and while in Panama I had the pleasure of tasting preserves made from it which seem to have a characteristic flavor of some merit. When in bloom, the branches of this tree are gorgeous, covered as they are with masses of large flowers an inch or so across, composed of hundreds of beautiful deep rose-pink or crimson stamens. The tree itself is a beautiful ornamental, and it would seem as though more work in the selection of this species should be attempted. The remarkable structure of the seeds suggests a high degree of polyembryony. When the seed germinates (as many of them were doing under the tree) the whole large brilliant-green mass seemed to break up into fragments." (*David Fairchild*.)

For previous introduction, see S. P. I. No. 54530.

57821 to 57826.

From India. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received July 31, 1923.

57821 and 57822. HORDEUM VULGARE PALLIDUM Seringe. Poaceae. **Six-rowed barley.**

57821. "(No. 129. Solan. June 10, 1923.) This barley was grown near Katuari under irrigation. It is the best brewing barley of India. There are few broken kernels and less than 2 per cent of 'still' kernels. Secured from the Solan brewery."

57822. "(No. 136. Garhi Kashmiria. June 12, 1923.) Seed of the new crop."

57823. LENTILLA LENS (L.) W. F. Wight (Lens esculenta Moench). Fabaceae. **Lentil.**

"(No. 133. Solan. June 10, 1923.) *Masoor Dhol*. Secured from H. E. J. Peake, of the Solan brewery. Grown in the hills at an altitude of 4,800 feet."

57824. PHASEOLUS MUNGO L. Fabaceae. **Urd.**

"(No. 132. Solan. June 10, 1923.) *Oorad Dhol*. Secured from H. E. J. Peake, of the Solan brewery. Grown in the hills at an altitude of 4,800 feet."

57825 and 57826. TRITICUM AESTIVUM L. (T. vulgare Vill.). Poaceae. **Common wheat.**

57825. "(No. 134. Garhi Kashmiria. June 12, 1923.) New crop just threshed."

57826. "(No. 135. Garhi Kashmiria. June 12, 1923.) A second grade of wheat from the new crop."

57827. LYCOPERSICON ESCULENTUM Mill. Solanaceae. **Tomato.**

From Tucuman, Argentina. Seeds presented by Dr. W. E. Cross, Estación Experimental Agrícola. Received August 6, 1923.

"Seeds from blight-resistant plants of Parana grown at the Tucuman Experiment Station in 1921. This variety is the most extensively planted in Tucuman, especially in the Lules region. It is generally regarded as the most blight-resistant variety, but my own experience has led me to the conclusion that it is not completely resistant, although there are always a number of plants which do not suffer at all when the rest of the plants have died from the disease." (E. F. Schultz.)

For previous introduction, see S. P. I. No. 55591.

57828. PSIDIUM GUAJAVA L. Myrtaceae. **Guava.**

From Dominica, British West Indies. Seeds presented by A. Keys, Botanic Gardens. Received August 13, 1923.

"*Large Indian guava*. This is a round variety, flattened at each end, and about 3½ inches in greatest diameter. The fruit, which is said to be of very good quality, weighs about 12 ounces. The variety was introduced into Dominica from India several years ago." (Keys.)

57829. IPOMOEA PAPILO Hall. f. Convolvulaceae. **Morning-glory.**

From Italian Somaliland, Africa. Seeds presented by Dr. G. Soassellati Sforzolini, Direttore Agrario e Zootechnico, Villaggio Duca Abruzzi. Received August 6, 1923.

A long trailing vine, with smooth, green, deeply toothed leaves half an inch long and rose-red flowers over an inch long and wide. The vine is native to several parts of South Africa. (Adapted from *Thiselton-Dyer, Flora Capensis, vol. 4, sect. 2, p. 167.*)

57830 and 57831. CROTALARIA spp. Fabaceae.

From Buitenzorg, Java. Seeds presented by Dr. P. J. S. Cramer, director, General Experiment Station, Department of Agriculture. Received August 13, 1923. Quoted notes by Doctor Cramer.

57830. CROTALARIA ANAGROIDES H. B. K.

"This species is now given preference here in Java as green manure; it produces more vegetation and does not layer so easily. It is especially satisfactory in higher altitudes and is in such great demand for the tea plantations in the higher mountains that we have to limit our seed distributions to small quantities."

57831. CROTALARIA USARAMOENSIS Baker f.

"Although I introduced this from East Africa as a fiber plant, it does not seem to be very promising as such. It has proved very successful, however, as a green manure, when grown in alternation with corn, producing large quantities of vegetation rich in nitrogen. In the cinchona plantations it is very satisfactory, as it endures partial shade and forms a dense low growth which keeps the edges of the terraces together."

57832. DIOSCOREA ALATA L. Dioscoreaceae. **Greater yam.**

From Summit, Canal Zone. Tuber presented by Holger Johansen, agronomist, Introduction Garden. Received August 13, 1923.

"This yam is white fleshed and remains perfectly white when cooked. It is slightly fibrous but otherwise is of very good quality. The tuber received was somewhat elongated and of good shape for handling; it weighed about 5 pounds." (R. A. Young.)

57833 to 57844.

From Poona, India. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received August 15, 1923. Quoted notes by Doctor Harlan.

57833. CYAMOPSIS TETRAGONOLOBA (L.) Taub. (C. psoraloides DC.). Fabaceae. **Guar.**

"(No. 120. May 29, 1923.) Secured from the Poona Agricultural College. Seeded in June and harvested in October."

57834. DOLICHOS LABLAB L. Fabaceae. **Hyacinth bean**

"(No. 121. May 29, 1923.) Secured from the Poona Agricultural College. Seeded in September and harvested in February."

57835 to 57842. HOLCUS SORGHUM L. (Sorghum vulgare Pers.). Poaceae. **Sorghum.**

"(Nos. 109, 111 to 117. May 29, 1923.) Selected from heads in the Poona collection of over 100 varieties. Especial attention was paid to the time of seeding and ripening. Most varieties here ripen in the winter months, but several of those sent ripen from September to November and therefore may find the proper length of day in the States."

57835. "(No. 109.) An agricultural variety known as *Asipari*. Possibly the *Elichpuri* of Bulletin 30, page 92, by Gamina, 1908. It is grown in the district of Khandesh in rotation with cotton on black cotton land of low rainfall. Sown in June and harvested in the latter part of November. Loose panicle 10 inches long."

57836. "(No. 111. District of Khandesh.) *Garya*. Sown the latter part of June and harvested the latter part of October and the first of November. Compact panicle 7 inches long."

57833 to 57844—Continued.

57837. "(No. 112. Dharwar.) *Nandyal*. Seeded the latter part of July and harvested the latter part of December. Panicle slender, 9 inches long."

57838. "(No. 113.) *Muddi Nandyal*. The season the same as for No. 112 [S. P. I. No. 57837]. Panicle rather compact and 5 inches in length."

57839. "(No. 114. District of Sholapuri) *Sholapuri*. A tall-growing variety. Panicle 7½ inches long. Seeded the middle of June and harvested in December."

57840. "(No. 115. Dekkan.) *Nilwa*. Sown in June and harvested in September. Panicle 5 inches and medium dense. This is a very early variety, but the grain is not so good. It is also used for fodder, for which purpose it is seeded thick."

57841. "(No. 116. Dekkan.) *Utwali*. Similar to No. 115 [S. P. I. No. 57840], but sown later (end of July). It ripens in 9 or 10 weeks. This is also largely used for fodder."

57842. "(No. 117. District of Gujrot.) *Sundhia*. This variety, which is the best for fodder, has a loose panicle and a fine stalk. It matures in 60 days and is seeded either early or late."

57843. PHASEOLUS ACONITIFOLIUS Jacq. Fabaceæ. Moth bean.

"(No. 119. May 29, 1923.) A small-leaved fine-stalked variety from Dekkan secured from the Poona Agricultural College. Several crops of forage are cut. It is seeded in June, and the cutting is not finished until January."

57844. VIGNA SINENSIS (Torner) Savi. Fabaceæ. Cowpea.

"(No. 118. Dekkan. May 29, 1923.) Received from the Poona Agricultural College."

57845 to 57848. IPOMOEA BATATAS (L.) Poir. Convolvulacæ. Sweet potato.

From Buitenzorg, Java. Tubers presented by Dr. P. J. S. Cramer, director, General Experiment Station, Department of Agriculture. Received August 13, 1923.

"These are considered the best sweetpotato varieties at our plant-breeding station." (Cramer.)

57845. No. 2. *Boled*.

57846. No. 1. *Bolcwak*.

57847. No. 4. *Menes noeder*.

57848. No. 3. *Menes 19*.

57849. RUBUS MACRAEI A. Gray. Rosaceæ. Akala.

From Honolulu, Hawaii. Seeds presented by Willis T. Pope, horticulturist, Agricultural Experiment Station. Received August 17, 1923.

"The Hawaiian giant raspberry, occurring at an altitude of about 6,000 feet. It is a straight bush with the older branches thornless. The fruits, borne at the drooping tips of the branches, are very numerous, about 2 inches in diameter and exceedingly juicy; the seeds are comparatively small. The flesh is slightly bitter but otherwise delicious. This berry is of great promise, as it grows in a region where frost is not uncommon in the winter months. It may succeed in some sections of California. (J. F. Rock.)

For previous introduction, see S. P. I. No. 57226.

57850. PRUNUS sp. Amygdalacæ. Cherry.

From Szemao, Yunnan, China. Seeds presented by J. D. Fullerton. Received August 13, 1923.

Seeds of a wild cherry from southwestern China, introduced for testing as a stock for cultivated varieties.

57851 to 57853. PLUMERIA spp. Apocynacæ.

From Honolulu, Hawaii. Seeds presented by Willis T. Pope, horticulturist, Agricultural Experiment Station. Received August 17, 1923. Quoted notes by Mr. Pope unless otherwise stated.

"Few tropical shrubs are more highly esteemed than the Plumerias. Though they are not particularly graceful in habit, the beauty and fragrance of their star-shaped flowers make them worthy of cultivation in every tropical garden. They succeed in southern Florida, where several species are already grown, though not so extensively as they deserve. From the white flowers of *Plumeria alba* the rare and costly frangipani perfume is distilled." (Wilson Popenoe.)

57851. PLUMERIA sp.

"Seeds of a pink Plumeria from slender pods."

57852. PLUMERIA sp.

"Seeds of a pink Plumeria from broad spreading pods."

57853. PLUMERIA sp.

"Seeds of a pink Plumeria from pods attached at an angle."

57854. CITRUS NOBILIS PAPILLARIS (Blanco) Wester. Rutacæ.

From Manila, Philippine Islands. Budwood presented by P. J. Wester, Bureau of Agriculture. Received August 11, 1923.

"A spreading, small tree, attaining a height of 6 meters or more, in habit similar to the pomelo; spines small or wanting; leaves 10 to 14 centimeters long, 5 to 6 centimeters broad, ovate to elliptical-oblong, crenate, dark green and shining above, crinkly, base broadly acute, apex narrowly acute to almost acuminate and caudate; petioles 17 to 20 millimeters long with narrow-winged margin; flowers not seen; fruit large, from 6 to 10 centimeters in diameter, 170 to 580 grams in weight, somewhat compressed at basal half, usually ending in a more or less conspicuous nipple, which, however, is sometimes wanting; apex flattened or even depressed; surface smooth, pale greenish turning to orange-yellow; skin medium thin; locules 10 to 11, separable from each other, and the skin like the mandarin; pulp yellowish, subacid, very juicy, and of good flavor with marked 'quinine' taste; juice cells large; seeds very few, rarely more than seven.

"The tizon is extremely rare and only a few trees are found in cultivation, confined to the citrus district of Batangas, Luzon. The trees are said to be quite prolific, and the fruit matures from September to December. This fruit, on account of its scarcity, is of no commercial importance. However, it would be an acceptable dessert or breakfast fruit, being a little more acid than the orange. It is said to be an introduction from Spain. The tizon is without doubt the *Citrus papillaris* described by Blanco in 'Flora Filipinas.'

"The tizon is believed to be a natural hybrid between the mandarin and the pomelo. It has inherited the loose-skinned character, large juice cells, partial absence of spines, and leaf character of the first-named species to which it is (without the writer having had the opportunity to examine the flowers) unquestionably more closely related than to any other species in the genus." (Wester.)

57855. TRIFOLIUM MEDIUM Huds.
Fabaceæ. Clover.

From Waverley, New Zealand. Seeds presented by the manager, Moumahaki Experimental Farm. Received August 17, 1923.

Seeds of a type of clover which is said to spread by means of underground stolons. Introduced for department clover specialists.

57856. QUERCUS DISCOCARPA Hance.
Fagaceæ.

From Buitenzorg, Java. Seeds presented by the director, Botanic Garden. Received August 3, 1923.

A lofty tree, 100 to 130 feet in height, with leathery narrowly oval leaves about 5 inches in length and small spiny hemispherical or roundish acorns about half an inch long. The tree is native to the Federated Malay States. (Adapted from *Annals of the Royal Botanic Garden, Calcutta, vol. 2, p. 76.*)

57857 to 57860.

From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky. Received August 22, 1923.

57857. BERBERIS BEALEI Fortune. Berberidaceæ.
Barberry.

For previous introduction and description, see S. P. I. No. 57704.

57858. GLADIOLUS SEGETUM Ker. Iridaceæ.

"One of the most beautiful wild flowers ground here; it might be very valuable for hybridizing." (*Proschowsky.*)

A European gladiolus of free habit, fond of warm dry soil and a sunny situation, with rather small rose-purple flowers. It is an admirable species for mixed borders. (Adapted from *Robinson, English Flower Garden, p. 577.*)

For previous introduction, see S. P. I. No. 56629.

57859. MUSA PARADISIACA SEMINIFERA (Lour.) Baker. Musaceæ. **Plantain.**

A wild seed-bearing form of the plantain, with small oblong greenish fruits full of seeds. These fruits are about a third of the size of the common banana and are of pleasant taste, although encumbered by numerous seeds. The plant is quite ornamental and harder than the common banana, so that it may be possible, by selection or hybridization, to extend the range of banana culture into cooler regions. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 4, p. 2679, and letter of Doctor Proschowsky, June 30, 1917.*)

For previous introduction, see S. P. I. No. 45007

57860. VERONICA HULKEANA F. Muell. Scrophulariaceæ.

One of the handsomest and most graceful of all the New Zealand veronics. It is easily distinguished from others of the group by its shining dark-green, coarsely toothed leaves about 3 inches long and its long sprays of lilac-colored flowers which are in panicles sometimes a foot in length.

57861 to 57867.

From Ekaterinoslav, Russia. Seeds presented by the Russian Bureau of Applied Botany, through D. Borodin, New York, N. Y. Received June 14, 1923. Numbered July, 1923. Quoted notes by Mr. Borodin.

From the Ekaterinoslav Agricultural Experiment Station; introduced for department agrostologists.

57861 to 57866. BROMUS spp. Poaceæ. **Bromegrass.****57861. BROMUS HORDEACEUS L.** Soft chess.

"No. 412. 1915 crop. Originally from Khar-kof."

57861 to 57867—Continued.**57862 to 57865. BROMUS INERMIS Leyss.**

57862. "1918 crop."

57863. "No. 190. 1916 crop."

57864. "No. 193. 1916 crop."

57865. "No. 814. 1918 crop. Originally from Amur, Siberia."

57866. BROMUS STERILIS L.

"No. 444. 1917 crop. Originally from Turkestan."

57867. ECHINOCHLOA CRUSGALLI (L.) Beauv. Poaceæ. **Barnyard millet.**

"No. 214. 1916 crop. Originally from Bakmut."

57868 to 57881. ORYZA SATIVA L. Poaceæ. **Rice.**

From Manila, Philippine Islands. Seeds presented by Adn. Hernandez, director, Bureau of Agriculture. Received August 21, 1923. Quoted notes by S. Youngberg, acting director, Bureau of Agriculture.

"The following were grown at the Lamao Experiment Station, Lamao, Bataan."

57868. "(No. 2.) *Bincol I.* Tested eight years under upland conditions; matures usually in 140 days. Average yield per hectare 1,662 kilograms (approximately 1,480 pounds per acre)."

57869. "(No. 5.) *Calonod.* Tested seven years under upland conditions; matures usually in 143 days. Average yield per hectare 1,835 kilograms (approximately 1,635 pounds per acre)."

57870. "(No. 6.) *Pileng Baybay.* Tested one year under upland conditions; matures usually in 139 days. Average yield per hectare 1,780 kilograms (approximately 1,560 pounds per acre)."

57871. "(No. 14.) *Sagunoy.* Tested one year under upland conditions; matures usually in 129 days. Average yield per hectare 1,000 kilograms (approximately 890 pounds per acre)."

57872. "(No. 11.) *Bonguet.* Tested six years under upland conditions; matures usually in 127 days. Average yield per hectare 2,062 kilograms (approximately 1,840 pounds per acre)."

57873. "(No. 10.) *Catlong.* Tested six years under upland conditions; matures usually in 141 days. Average yield per hectare 2,176 kilograms (approximately 1,940 pounds per acre)."

57874. "(No. 1.) *Inantipolo II.* Tested six years under upland conditions; matures usually in 137 days. Average yield per hectare 2,184 kilograms (approximately 1,950 pounds per acre)."

57875. "(No. 3.) *Kinastila IV.* Tested five years under upland conditions; matures usually in 129 days. Average yield per hectare 1,939 kilograms (approximately 1,730 pounds per acre)."

57876. "(No. 12.) *Hinrang.* Tested six years under upland conditions; matures usually in 130 days. Average yield per hectare 3,496 kilograms (approximately 3,100 pounds per acre)."

57877. "(No. 4.) *Calibug.* Tested four years under upland conditions; matures usually in 133 days. Average yield per hectare 2,010 kilograms (approximately 1,800 pounds per acre)."

57878. "(No. 8.) *Casulig.* Tested three years under upland conditions; matures usually in 142 days. Average yield per hectare 1,714 kilograms (approximately 1,500 pounds per acre)."

57879. "(No. 13.) *Kinandang Kumpol.* Tested three years under upland conditions; matures usually in 132 days. Average yield per hectare 1,853 kilograms (approximately 1,650 pounds per acre)."

57868 to 57881—Continued.

57880. "(No. 7.) *Pinling*. Tested three years under upland conditions; matures usually in 132 days. Average yield per hectare 1,316 kilograms (approximately 1,170 pounds per acre)."

57881. "(No. 9.) *Caponguit*."

57882 to 57890.

From Darjiling, India. Seeds presented by G. H. Cave, Curator, Lloyd Botanic Garden. Received August 21, 1923.

57882. *ACROCARPUS FRAXINIFOLIUS* Wight and Arn. *Casalpiniaceae*.

A lofty tree, native to the eastern Himalayas at altitudes of 4,000 feet and less, used by the natives for making tea boxes and also for planking. The sapwood is white and the heartwood light red and moderately hard. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 1, p. 102.*)

57883. *AMERIMON PINNATUM* (Lour.) Kuntze (*Dalbergia tamarindifolia* Roxb.). *Fabaceae*.

A climbing plant with leaves resembling those of the tamarind, found as high as 4,000 feet in the eastern Himalayas. The leaves are eaten by cattle. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 3, p. 16.*)

57884. *BERBERIS NAPAULENSIS* (DC.) Spreng. *Berberidaceae*.

A shrub or small tree, common in eastern India at altitudes above 5,000 feet. The wood is bright yellow and hard, and because of its hardness and handsome color it might be useful for inlaying. It is used to a small extent by the natives of India in making a yellow dye. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 1, p. 446.*)

For previous introduction, see S. P. I. No. 55672.

57885. *BUDDELEIA ASIATICA* Lour. *Loganiaceae*.

A very graceful evergreen shrub or small tree, common throughout India and the Malay Peninsula, with narrow leaves up to 8 inches in length. For three months in India the long slender racemes of white sweet-scented flowers fill the air with delightful fragrance. (Adapted from *Curtis's Botanical Magazine, pl. 6323.*)

For previous introduction, see S. P. I. No. 48264.

57886. *CHONEMORPHA MACROPHYLLA* (Roxb.) Don. *Apocynaceae*.

A large climber, native to Bengal and Burma, with milky sap from which a kind of caoutchouc is obtained. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 2, p. 271.*)

57887. *EDGEWORTHIA GARDNERI* (Wall.) Meisn. *Thymelaeaceae*.

A handsome shrub whose branches are covered with dense clusters of yellow sweet-scented flowers before the leaves appear. The strong, tough fiber which is obtained from the long straight twigs seems very promising as paper-making material. (Adapted from *Watt, Dictionary of the Economic Products of India, vol. 5, p. 202.*)

For previous introduction, see S. P. I. No. 39642.

57888. *LEUCOSCEPTRUM CANUM* J. E. Smith. *Menthaeae*.

A stout-branched densely hairy tree, commonly about 30 feet in height, with large narrowly ovate leaves, silvery hairy beneath and at times a foot long. The small white or pinkish flowers are in spikes. (Adapted from *Hooker, Flora of British India, vol. 4, p. 700.*)

For previous introduction, see S. P. I. No. 39646.

57889. *MACHILUS GAMBLEI* King. *Lauraceae*.

An evergreen tree, native to northern Bengal, India, with thin leathery leaves, pale beneath

57882 to 57890—Continued.

silky flower clusters, and small globular fruits. (Adapted from *Hooker, Flora of British India, vol. 5, p. 138.*)

57890. *TETRASTIGMA BRACTEOLATUM* (Wall.) Planch. (*Vitis bracteolata* Wall.). *Vitaceae*.

A slender-branched shrub which has the habit of producing long runners. The greenish flowers are very small, and the round black fruits are the size of peas. Native to Bhutan and Assam, India. (Adapted from *Hooker, Flora of British India, vol. 1, p. 654.*)

For previous introduction, see S. P. I. No. 47811.

57891. (Undetermined.)

From Bluefields, Nicaragua. Seeds presented by Y. R. Heath, Moravian Mission. Received August 31, 1923.

"*Ihiri*. The unripe fruits of this plant, in which no seeds have formed, may be boiled and eaten; they resemble the Irish potato in taste. But the fully formed seeds, such as I am sending, are better. When raw they taste somewhat peppery. They are boiled with ashes, after which the skin is easily rubbed off, and then they are reboiled in ordinary water. The *ihiri* usually grows in swamps, although sometimes on dry land, but it prefers a rather swampy location. According to the Indians the root is hard and woody." (*Heath.*)

57892 to 57911.

From Kashmir, India. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received August 17, 1923. Quoted notes by Doctor Harlan.

57892 to 57898. *HORDEUM VULGARE PALLIDUM* Seringe. *Poaceae*. **Six-rowed barley.**

57892. "(No. 128. June 13, 1923.) A winter barley collected in a field near Brahmoola. Altitude about 5,300 feet."

57893. "(No. 141. June 14, 1923.) Head selections of winter barley from fields in Sonawar. Altitude about 5,400 feet."

57894. "(No. 151. Garden of Lalla Rukh, Manarbal, Kashmir. June 15, 1923.) Barley selected in a plot on one of the terraces beside the lake."

57895. "(No. 153. June 15, 1923.) Head selections from fields about Shadipur."

57896. "(No. 154. Shadipur. June 15, 1923.) Head selections from the field from which the rye of No. 152 [S. P. I. No. 57900] was secured."

57897. "(No. 158. June 17, 1923.) Head selections from fields about Ganderbal."

57898. "(No. 164a. Ranbir Bagh vineyard. June 19, 1923.)"

57899. *MEDICAGO MINIMA* (L.) Grufberg. *Fabaceae*.

"(No. 157. Ganderbal. June 17, 1923.) Found growing plentifully on a dry mountain side."

57900. *SECALE CEREALE* L. *Poaceae*. **Rye.**

"(No. 152. Shadipur. June 15, 1923.) Spikes of rye from a field of barley. These are from the only rye plants I have seen in Kashmir. They were widely scattered and contain few seeds as a consequence. Apparently rye is not grown here."

57901 to 57909. *TRITICUM AESTIVUM* L. (*T. vulgare* Vill.). *Poaceae*. **Common wheat.**

57901. "(No. 137. June 13, 1923.) This sample contains five or more types of wheat from a field near Uppi. Altitude about 5,000 feet."

57902. "(No. 139. June 14, 1923.) Head selections with white glumes from fields in Sonawar."

57892 to 57911—Continued.

57903. "(No. 140. June 14, 1923.) Head selections with red glumes from fields in Sonawar."
57904. "(No. 143. June 15, 1923.) Head selections made in fields at Sumbal."
57905. "(No. 155. June 17, 1923.) Head selections from fields near Ganderbal."
57906. "(No. 156. June 17, 1923.) Head selections in fields about Ganderbal."
57907. "(No. 163. Ranbir Bagh. June 19, 1923.) Head selections made from wheat grown between the rows of grapes."
57908. "(No. 164b. Ranbir Bagh vineyard. June 19, 1923.) Awlless white wheat."
57909. "(No. 165. Ranbir Bagh vineyard. June 19, 1923.) Selections of an awned red-chaffed wheat."
- 57910 and 57911. TRITICUM DURUM Desf. Poaceae. Durum wheat.
57910. "(No. 144. June 15, 1923.) Head selections made in a field near Sumbal."
57911. "(No. 166. Ranbir Bagh vineyard. June 19, 1923.) Selections of durum wheat from the same vineyard as No. 165 [S. P. I. No. 57909]."

57912 to 57929.

From Avondale, Auckland, New Zealand. Plants presented by H. R. Wright. Received August 13, 1923. Quoted notes by Mr. Wright.

- 57912 to 57918. AMYGDALUS PERSICA L. (*Prunus persica* Stokes). Amygdalaceae. Peach.
57912. "*Bennett's Perfection*. A very late yellow freestone variety."
57913. "*Early Gem*. A very early variety with a splendid flavor; raised from the same parent as *Sunrise* [S. P. I. No. 57916]."
57914. "*Golden Prolific*. A yellow freestone variety of excellent flavor. Season medium."
57915. "*Lord Kitchener*. A late yellow freestone variety of fine flavor."
57916. "*Sunrise*. A very early variety of splendid flavor. The tree is sturdy and a good cropper."
- For previous introduction, see S. P. I. No. 55740.
57917. "*Watt's Early*. A seedling from *Flat China*, claimed by C. E. Vessey, of Australia, to be the earliest of all peach varieties."
- For previous introduction, see S. P. I. No. 55741.
57918. "*White Cling*. A white clingstone variety, with very juicy fruits of excellent flavor."
- For previous introduction, see S. P. I. No. 55742.
- 57919 to 57928. PRUNUS spp. Amygdalaceae.
- 57919 to 57921. PRUNUS CERASIFERA Ehrh. Cherry plum.
57919. "*Anderson's Early*. A glorified cherry plum about twice the size of the ordinary type. It is probably a cross between the cherry plum and the Japanese cherry."
- 57920 and 57921. "*Palmer's Early*. A yellow variety which we believe to be the earliest plum known. Because of its extreme earliness this plum should have great commercial possibilities."
57922. PRUNUS DOMESTICA L. Plum.
- "*Jenkin's Seedling*. A European variety, very early, which bears large crops of fine-flavored fruits."

57912 to 57929—Continued.

57923. PRUNUS SALICINA Lindl. Japanese plum.
- "*Early Blood*. The earliest blood plum we have raised; it ripens before the cherry plum. The fruit is of good flavor but too soft for long shipment."
- 57924 to 57926. PRUNUS SALICINA × CERASIFERA. Hybrid plum.
57924. "*Fuller's Seedling*. A cherry plum and Satsuma cross. A red-fleshed cherry plum, splendid for cooking and for jam. Propagated easily from cuttings."
57925. "*Ford's Early*. A cross between the cherry plum and Japanese plum. A heavy cropper, ripening early. The flavor strongly suggests the Japanese plum."
- For previous introduction, see S. P. I. No. 55716.
57926. "*Norris Early*. A cross between the cherry plum and Japanese plum. The crop is good and the season early."
57927. PYRUS COMMUNIS L. Malaceae. Pear.
- "*Ruby*. A *Bon Chrétien* seedling raised in Victoria. The tree is a good bearer, resembling *Bon Chrétien* in growth, and the ripening season in Australia is the latter end of March. The fruit is medium to large and of splendid quality."
57928. MALUS PRUNIFOLIA (Willd.) Borkh. Malaceae. Apple.
- Introduced for testing as a stock for cultivated apple varieties.
57929. VITIS LABRUSCA × VINIFERA. Vitaceae. Grape.
- "*Albany Surprise*. A large-fruited sport of *Isabella*."
57930. EPHEDRA ALTISSIMA Desf. Gnetaeaceae.
- From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky. Received September 4, 1923.
- "This is a strikingly ornamental climber, attractive at all times, but especially so when covered with its small red fruits." (*Proschowsky*.)
- 57931 to 57936.
- From Montevideo, Uruguay. Seeds presented by the Director, Dirección General de Paseos Públicos. Received September 4, 1923.
57931. CELTIS SELLOVIANA Miquel. Ulmaceae.
- A much-branched spiny shrub, native to southern Brazil, with narrow, membranous, light-green, sharp-pointed leaves less than an inch long and inconspicuous flowers. (Adapted from *Martius, Flora Brasiliensis, vol. 4, pt. 1, p. 179*.)
57932. EUGENIA GLAUDESCENS Cambess. Myrtaceae.
- A large shrub, native to southern Brazil, with rather short, very narrow leaves up to 2½ inches in length and small white flowers borne singly in the axils of the leaves. (Adapted from *St. Hilaire, Flora Brasiliæ Meridionalis, tcl. 2, p. 368*.)
- For previous introduction, see S. P. I. No. 50392.
57933. MANIHOT TWEEDIFANA Muell. Arg. Euphorbiaceae.
- A wild Brazilian species from which the Indians are said to obtain edible varieties by cultivating the plants for a few years.
- For previous introduction, see S. P. I. No. 48678.

57931 to 57936.—Continued.

57934. *POECILANTHE PARVIFLORA* Benth. Fabaceæ.

The *lapachillo*, as it is called in its native home on the Uruguay River, is a tree of great beauty, with its finely divided leaves and small but dense clusters of pink flowers. The heartwood is dark brown, very hard, heavy, and durable. (Adapted from *Journal of the Linnean Society*, vol. 4, suppl., p. 82, and *Lillo, Contribucion al Conocimiento de los Arboles de la Argentina*, p. 107.)

57935. *POMADERIS APETALA* Labill. Rhamnacæ.

A tree occasionally 60 feet in height, but usually smaller; native to southeastern Australia. The foliage is eaten readily by stock, often in preference to their customary feed. (Adapted from *Mueller, Select Extra-Tropical Plants*, p. 416.)

For previous introduction, see S. P. I. No. 48684.

57936. *PROSOPIS NANDUBEY* Lorentz. Mimosacæ.

A tree of moderate height which is common in the mountainous regions of Uruguay. The numerous small yellowish flowers appear in the spring, and the sickle-shaped pods inclose a pulp of acid flavor. Because of its great durability the wood is prized for industrial purposes. (Adapted from *Arechavaleta, Flora Uruguayana*, vol. 1, p. 419.)

For previous introduction, see S. P. I. No. 48685.

57937 and 57938. *MALUS SYLVESTRIS* Mill. (*Pyrus malus* L.). Malacæ.
Apple.

From Melbourne, Victoria, Australia. Presented by C. F. Cole, orchard supervisor, Department of Agriculture. Received September 6, 1923.

"*King Cole*. Fruit medium sized, roundish, inclined to oblate, pretty uniform in shape and size. Stem short, slender. Cavity rather deep, acute, symmetrical. Calyx small. A beautiful apple, highly colored and with a fine aroma. The apple gives evidence of being a good keeper and a good snipper. A specimen of this fruit forwarded by Mr. Cole in April reached us in good condition six weeks later although packed in an ordinary small wooden box. Other specimens forwarded July 13, 1923, reached us August 21 in excellent condition. If this variety proves resistant to woolly aphis, as claimed, it will prove a valuable acquisition to our apple collections." (*L. T. Galloway*.)

"This is a chance seedling supposed to be a cross between *Jonathan* and *Dutch Mignone*. The original seedling is still standing upon the property of R. G. Cole, orchardist, Lang Lang, Victoria, where the seed germinated. The producer first exhibited this apple at the fruit carnival held in the Exhibition Buildings, Melbourne, in 1912, and won the silver medal for a Victoria-raised seedling. The seedling was registered with the Royal Horticultural Society of Victoria under the name *R. G. Cole's Champion*. The writer submitted it under the name of *Cole's Champion* to the committee of the Australia Pomological Society, but owing likely to confusion the word *Champion* has been dropped and *Cole* accepted as the future name of this apple.

"The tree is very productive and a strong upright grower. The wood is dark, becoming reddish with age and lightly speckled with grey dots; the buds are moderately prominent; the foliage is medium sized and dark green. During the 1920 fruit season 22 cases of salable fruit were gathered from the original seedling tree. The flowers are not bold and are medium sized. The blossoming period is from the 12th to the 26th of October in Victoria.

"The apple, which has been tested under cool storage conditions, is a handsome dessert type of medium size, roundish conical, or tapering to the eye; the skin is thin and smooth; the ground clear pale yellow, splashed with lively red narrow broken stripes. The whole of the exposed surface is a light red, becoming deeper in color where exposed to the sun. The flesh is firm, white, crisp, juicy, sweet,

with a slightly perfumed aromatic flavor; the core is compact, the stalk thin and averaging three-quarters of an inch in length, inserted in a deep, rather fairly regular cavity. The calyx is small and closed; the segments pointed, slightly recurved, and set in a deep, rather narrow and corrugated basin. Its season in Victoria is April to September. It has been proved to be a very good keeper in cool storage and while stored it emits a strong aroma. It could be gathered in some districts about the middle of March. This variety is being largely planted, and it promises to become one of the best late apples introduced." (*Journal of the Department of Agriculture, Victoria*, p. 492.)

57937. Trees. Budded on *Northern Spy*.

57938. Budwood.

57939. *TRIFOLIUM PRATENSE* L. Fabacæ.
Red clover.

From Ayr, Scotland. Seeds presented by McGill & Smith. Received September 8, 1923.

"A very hardy and permanent strain of wild red clover with which we are experimenting. It grows slightly the first year and by the third year produces quite a lot of foliage." (*McGill*.)

Introduced for department agronomists.

57940. *NYPA FRUTICANS* Wurmbr. Phœnicacæ.
Nipa palm.

From Lamac, Philippine Islands. Seeds presented by H. H. Boyle, of the Columbian Rope Co., Manila, through the Bureau of Agriculture, Manila. Received September 6, 1923.

From an economic standpoint this palm is one of the most important in the Philippines. It occurs along tidal streams throughout the archipelago and thrives only in brackish swamps. The "nipa," as it is called, has a stout, creeping, underground stem, and the pinnate leaves, which are in erect clusters, are 7 meters (23 feet) or more in length. The flat fruits, 5 inches long, 4 inches wide, and 2 inches thick, are crowded in a large, round head which is borne on a special, erect stalk. The juice obtained by cutting this stalk just below the fruiting head is a very promising source of sugar and alcohol. Probably 85 per cent of the 3,000,000 gallons of proof alcohol produced annually in the Philippines comes from the "nipa" palm. The leaves of this palm are extensively used for thatching and for making baskets and mats, and the immature seeds are boiled in sugar to form a confection. The tree is also a pleasing ornamental. (Adapted from *Brown and Merrill, Philippine Palms and Palm Products*, p. 98.)

57941 and 57942.

From Barberton, Transvaal. Seeds presented by George Thorncroft. Received September 8, 1923. Quoted notes by Mr. Thorncroft.

57941. *NATHUSIA* sp. (*Schrebera* sp.) Oleacæ.

"A tree about 20 feet high with sweet-scented flowers resembling those of the jasmine."

57942. *WATSONIA FLAVIDA* Bolus. Iridacæ.

"This is very closely allied to the gladiolus, but the flowers are smaller and creamy white. It grows on stony hills in this region at an altitude of 4,000 feet."

57943. *HEVEA BRASILIENSIS* (H. B. K.) Muell. Arg. Euphorbiacæ.

From Dominica, British West Indies. Seeds presented by the Botanic Garden. Received September 13, 1923.

"The Para rubber tree (*Hevea brasiliensis*), native to Brazil and now extensively cultivated in the East Indies, has always ranked as the principal and most important rubber-producing tree of the world

"In 1922 the world's production of rubber amounted to 379,200 tons, of which 354,980 tons, or 93 per cent of the world's output, came from this source.

"In connection with the investigations now being undertaken by the department for the development of the rubber industry in the Western Hemisphere, this important plant will receive the attention it deserves with a view to establishing plantations in Porto Rico and other tropical dependencies of the United States." (*Alfred Keys*.)

57944 to 58012.

From Kashmir, India. Seeds collected by H. V. Harlan, Bureau of Plant Industry. Received August 28 and September 6, 1923. Quoted notes by Doctor Harlan.

"(Nos. 205 to 358. Lyallpur. July 16, 1923.) Secured from the botanical section of the Lyallpur Agricultural College. The barleys and wheats are pure lines descendant from single plants."

57944. *CROTALARIA JUNCEA* L. Fabaceæ.
Sunn hemp.

"(No. 237.) Used as a fiber plant and for green manure."

57945. *ERUCA SATIVA* Hill. Brassicaceæ.
Roquette.

"(No. 232.) A cruciferous weed which grows wild in the drier parts of the Punjab. Sixty thousand tons of seeds are collected annually for the extraction of oil."

57946 to 57965. *HORDEUM* spp. Poaceæ.

57946 to 57948. *HORDEUM VULGARE COELESTE* L.
Six-rowed barley.

57946. "(No. 146. June 15, 1923.) Head selections made in a field near Sumbal. Probably fall seeded."

57947. "(No. 167. June 24, 1923.) From the highest terraces on the west side of the Sind Valley. Altitude between 6,500 and 6,700 feet. Only the upper terraces were planted to this variety."

57948. "(No. 216.) *Gujar Khan*."

57949 to 57963. *HORDEUM VULGARE FALLIDUM* Seringe.
Six-rowed barley.

57949. "(No. 145. June 15, 1923.) Head selections made near Sumbal."

57950. "(No. 147. June 14, 1923.) Spikes selected in a field in Samwar near Srinagar."

57951. "(No. 168. Mountain side, Sind Valley. June 24, 1923.) Barley grown at a slightly lower altitude than No. 167 [S. P. I. No. 57947]."

57952. "(No. 183. June 24, 1923.) Barley from a bench on the south side of the Sind Valley."

57953. "(No. 205.) *Rewari*. Originally from Rewari."

57954. "(No. 206.) *Lyallpur*. This is the standard or check variety used in the tests at Lyallpur."

57955. "(No. 207.) *Mianwali*. From a town of that name."

57956. "(No. 208.) *Multan*. From a town of that name."

57957. "(No. 209.) *Giyarkhan*. Originally from a nonirrigated district near Rawalpindi."

57958. "(No. 210.) *Hoshiarpur*. From a nonirrigated area."

57959. "(No. 211.) *Lyallpur*. A new selection of dense 6-rowed barley."

57960. "(No. 212.) *Ludhiana*"

57944 to 58012—Continued.

57961. "(No. 213.) *Baluchistan*. From near Quetta."

57962. "(No. 214.) *Nushera*. A good brewing barley."

57963. "(No. 215.) *Gujrat*. From a district of that name in the Punjab."

57964. *HORDEUM DISTICHON NUDUM* L.
Naked barley.

"(No. 217.) *Black* barley from Lyallpur. Two-rowed naked purple."

57965. *HORDEUM VULGARE COELESTE* L.
Six-rowed barley.

"(No. 218.) *Kulu*. A short-awned naked barley from the Kangro Valley."

57966. *LATHYRUS SATIVUS* L. Fabaceæ.
Bittervetch.

"(No. 236.) Found wild and under cultivation."

57967. *LOTUS CORNICULATUS* L. Fabaceæ.

"(No. 162. Raipur. June 18, 1923.) A yellow-flowered low-growing legume growing spontaneously in an orchard."

57968 to 57976. *MEDICAGO* spp. Fabaceæ.

57968. *MEDICAGO HISPIDA APICULATA* (Willd.) Urban.
Bur clover.

"(No. 233.) This legume grows wild in many places in the Punjab. Once established it comes up as a secondary growth in wheat."

57969 and 57970. *MEDICAGO LUPULINA* L.
Black medick.

57969. "(No. 149. June 15, 1923.) A low-growing legume from the orchard in the old garden of Lalla Rukh at Manarbal, Kashmir. Not cultivated."

57970. "(Nos. 188 to 190. Votler. June 26, 1923.) This is a form with branches 4 to 5 feet long."

57971 to 57976. *MEDICAGO SATIVA* L. Alfalfa.

57971 and 57972. "(Nos. 169 and 170. Nacimbagh. June 23, 1923.) Alfalfa was found growing in nonirrigated wheat fields where it had never been seeded as far as the peasants knew. I have seen no cultivated alfalfa in Kashmir. Both samples are immature, but some seed may grow. They were the ripest obtainable. Altitude 5,400 feet, rainfall 20 inches, winter mild."

57971. No. 169. 57972. No. 170.

57973. "(No. 195. Aishmakan. July 1, 1923.) Seeds of several plants found growing in a wheat field. No cultivated alfalfa in this region."

57974. "(No. 196. Aishmakan. July 1, 1923.) Seeds of a different type, later than No. 195 [S. P. I. No. 57973]."

57975. "(No. 197. Aishmakan. July 1, 1923.) Seeds of a single plant later than Nos. 195 and 196 [S. P. I. Nos. 57973 and 57974]. Probably too immature to grow."

57976. "(No. 235.) A local strain."

57977. *MELILOTUS ALBA* Desr. Fabaceæ.
White sweetclover.

"(No. 187. Votler. June 26, 1923.) This seed is immature and may not germinate, but it was the largest on the plants. This is the white-flowered tall sort."

57978. *MELILOTUS INDICA* (L.) All. Fabaceæ.
Sweetclover.

"(No. 238.) Occurs as a weed in many places in the Punjab."

57944 to 58012—Continued.

57979. *TRIFOLIUM PRATENSE* L. Fabaceæ.
Red clover.
“(No. 161. Raipur. June 18, 1923.) Apparently ordinary red clover but not cultivated.”
57980. *TRIFOLIUM REPENS* L. Fabaceæ.
White clover.
“(No. 150. June 15, 1923.) From the orchard in the old garden of Lalla Rukh at Manarbal, Kashmir. Apparently ordinary white clover.”
57981. *TRIGONELLA FOENUM-GRÆCUM* L. Fabaceæ.
Fenugreek.
“(No. 234.) Used for fodder and green manure. Does not look as vigorous here as in Tunisia.”
- 57982 to 58009. *TRITICUM ÆSTIVUM* L. (*T. vulgare* Vill.). Poaceæ.
Common wheat.
57982. “(No. 148. Simla. June 7, 1923.) Spikes from a threshing floor.”
57983. “(No. 160. Raipur. June 18, 1923.) Selections made in fields about Raipur.”
57984. “(No. 171. Nacimbagh. June 23, 1923.) Head selections of wheat that seemed to differ from the rest of the field.”
- 57985 and 57986. “(Nos. 172 and 173. Nacimbagh. June 23, 1923.) Variations of two types of wheat.”
57985. No. 172. 57986. No. 173.
57987. “(No. 174. Sind Valley. June 24, 1923.) Three spikes of wheat found growing in No. 168 [S. P. I. No. 57951].”
- 57988 to 57995. “(Nos. 175 to 177, 179, 180, and 182. June 24, 1923.) Wheat types on bench on south side of the Sind Valley.”
57988. No. 175. 57992. No. 180.
57989. No. 176. 57993. No. 182.
57990. No. 177. 57994. No. 184.
57991. No. 179. 57995. No. 185.
57996. “(No. 186. Ganderbol. June, 1923.) Consists of a single spike, but no others of this type were found in the immediate locality of this specimen.”
57997. “(No. 219.) *Wheat 17 B*. A selection not yet distributed. A red wheat of good milling and baking quality.”
57998. “(No. 220.) *Type XI wheat*. Has done well in the colony. Profitable for export but poor for milling and baking.”
57999. “(No. 221.) *Lyallpur 8 A wheat*. Good on both dry and irrigable lands. A good milling wheat.”
58000. “(No. 222.) *Lyallpur 8 wheat*. Similar to No. 221 [S. P. I. No. 57999].”
58001. “(No. 223.) *Lyallpur 16 A wheat*. Likely to do well in a dry area.”
58002. “(No. 224.) *Lyallpur 17 wheat*. Try in a dry area.”
58003. “(No. 225.) *Lyallpur No. 14 wheat*. A typical dry-area wheat.”
58004. “(No. 226.) *Lyallpur No. 9 wheat*. This is the check or standard variety at Lyallpur. Good for milling and baking.”
58005. “(No. 227.) *Lyallpur No. 15 wheat*. A dry-land variety.”
58006. “(No. 228.) *Lyallpur 9 C wheat*. A selection from No. 9 wheat [S. P. I. No. 58004].”
58007. “(No. 229.) *Lyallpur Cron III wheat*. A hybrid selection which has done well.”

57944 to 58012—Continued.

58008. “(No. 230.) *Lyallpur Cron II wheat*. The same as No. 229 [S. P. I. No. 58007].”
58009. “(No. 231.) *Lyallpur Cron C121 wheat*. A hybrid resistant to yellow rust.”
- 58010 to 58012. *TRITICUM DURUM* Desf. Poaceæ.
Durum wheat.
58010. “(No. 159. Raipur. June 18, 1923.) Selections from the only field of pure durum wheat I have seen so far in Kashmir.”
58011. “(No. 178. June 24, 1923.) A type on bench on the south side of Sind Valley.”
58012. “(No. 181. June 24, 1923.) A type on bench on the south side of Sind Valley.”
- 58013 and 58014.
- From Likiang, Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received September 10, 1923. Quoted notes by Mr. Rock.
58013. *PRUNUS MAJESTICA* Koehne. Amygdalaceæ.
“(No. 8793. Talifu. June 30, 1923.) Var. *talicensis*. Seeds from the same trees as that collected in April, 1922 [S. P. I. No. 55498]. This is a very vigorous and healthy early-fruited wild cherry, which grows at an altitude of about 8,000 feet.”
58014. *ZEA MAYS* L. Poaceæ. Corn.
“(No. 8795. Taku. June, 1923.) This variety is cultivated on the plateau of Taku, by Nashi (Moso) tribesmen, and, next to wheat, is one of their most important crops. The plants are 8 to 10 feet high, and the ears are large and uniformly yellow.”
58015. *MEDICAGO FALCATA* L. Fabaceæ.
Alfalfa.
From Ekaterinoslav, Russia. Seeds presented by the Russian Bureau of Applied Botany, through D. Borodin, New York, N. Y. Received June 14, 1923. Numbered July, 1923.
“No. 841. 1919 crop.” (*Borodin*.)
Introduced for department agronomists.
58016. *FLACOURTIA INDICA* (Burm. f.) Merr. (*F. ramontchi* L'Herit.). Flacourtiaceæ.
Ramontchi.
From Manila, Philippine Islands. Seeds presented by P. J. Wester, Bureau of Agriculture. Received July 31, 1923.
A shrub or small tree, armed with scattered slender spines, native to many parts of the Philippine Islands. The white flowers are borne singly or in pairs in the leaf axils or at the ends of short branchlets. The rounded dark-purple fleshy fruits are nearly half an inch in diameter and contain edible fleshy pulp of an agreeable flavor. (Adapted from *Brown, Wild Food Plants of the Philippines*, p. 126.)
For previous introduction, see S. P. I. No. 53576.
58017. *VIGNA SINENSIS* (Torner) Savi. Fabaceæ.
Cowpea.
From Port of Spain, Trinidad, British West Indies. Seeds presented by R. D. Rands, Bureau of Plant Industry. Received August 1, 1923.
“*Frijoles ballos*. This variety was obtained from the public market in Caracas, Venezuela.” (*Rands*.)
Introduced for department pathologists studying bean diseases.

**58018. ATTALEA sp. Phœnicaceæ.
Palm.**

From Tepic, Nayarit, Mexico. Seeds presented by M. Bandala, Agrónomo Regional, Dirección General de Agricultura. Received August 17, 1923.

A genus of tropical American palms, some members of which produce valuable oil-yielding fruits, while others are prized for the fiber obtained from the leaves and leafstalks. All are of great ornamental value because of their long graceful pinnate leaves.

**58019. PERSEA AMERICANA Mill.
(*P. gratissima* Gaertn. f.). Lauraceæ.
Avocado.**

From Caracas, Venezuela. Seeds presented by H. Pittier. Received September 12, 1923.

"The fruits from which these seeds were taken were obtained from a peddler here in Caracas. They are pear shaped, of uniform size, about 4 inches long and 2 inches in diameter. The rather tough skin is light yellow, and the flesh, rather well developed in proportion to the seed, has a peculiar but agreeable flavor." (*Pittier*.)

**58020. STRYCHNOS GILLETII Wildem.
Loganiaceæ.**

From Kisantu, Belgian Congo. Seeds presented by Frère J. Gillet. Received September 12, 1923.

"The fruits of this species are edible." (*Gillet*.)

A spiny shrub, related to the Kafir orange (*Strychnos spinosa*) which grows wild in thickets in the Belgian Congo. The leathery shining leaves are oblong-oval, deeply notched at the apex, and the fruits are about 2 inches in diameter. (Adapted from *Annales du Musée du Congo, sér. 5, vol. 1, p. 176.*)

**58021. POPULUS sp. Salicaceæ.
Poplar.**

From Likiang, Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received September 17, 1923.

"(No. 9501. June, 1923.) A large and handsome tree 60 to 80 feet tall with a trunk 2 to 3 feet in diameter growing at the foot of Kintzu Shan along streams at an altitude of 8,500 feet. The very large dark-green heart-shaped leaves are silvery beneath, and the branches are straight and ascending." (*Rock*.)

**58022. LAPAGERIA ROSEA Ruiz and
Pav. Liliaceæ.**

From Valparaiso, Chile. Seeds presented by F. L. Crouse, Instituto Agrícola Bunster, Angol, through C. F. Deichman, American consul general, Valparaiso. Received September 4, 1923.

"*Copihue*. This, the national flower of Chile, has been occasionally grown in northern greenhouses, where it creates a genuine sensation when in bloom. It is a climbing plant of slow growth, with slender wiry stems and bright-crimson tubular flowers about 3 inches in length. In southern Chile huge bunches of these blossoms are brought to the railway stations and sold to passing travelers. The plant requires an acid soil." (*Wilson Popenoe*.)

For previous introduction, see S. P. I. No. 54621.

**58023. PRUNUS TOMENTOSA Thunb.
Amygdalaceæ. Bush cherry.**

From Likiang, Yunnan, China. Seeds collected by J. F. Rock, National Geographic Society, Washington, D. C. Received September 17, 1923.

"(No. 8794. Tsehchung. June, 1923.) A shrub about 4 feet high, found in the mountains on the upper Mekong at an altitude of about 10,000 feet. The oval, serrate leaves are densely hairy beneath and the short-stalked fruits also are hairy." (*Rock*.)

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