

Issued May 23, 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 JANUARY 1
TO MARCH 31, 1919.

(No. 58; Nos. 46951 to 47348.)



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 INTRO- DUCTION DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1919 (NOS. 46951 TO 47348).

INTRODUCTORY STATEMENT.

The purpose of these introductory statements has been to emphasize certain introductions which, from the accumulated experience of those in contact with the stream of plant immigrants, appear to have unusual promise or interest. As the years have passed and that experience has widened, the proportion of new plants which appear interesting seems to have increased and the introductory statements have become correspondingly longer. This is quite the opposite of the predictions of my friends, who raised the question in the beginning as to what I proposed to do when all the plants which were worth while had been introduced. Instead of the widening prospect that actually lies before us and which embarrasses us with its wealth of opportunity, they saw in their imagination the stream of new plants becoming a tiny brook and finally stopping altogether. It is interesting to note that, whereas in the spring quarter of 1913 there were 407 introductions, six years later, 1919, there were practically as many (397), and this in the face of a world war which had demoralized shipping. The dearth is not in plant material of great potential possibilities but in experimenters who can adapt these plants to the wide uses of mankind. Ten thousand independent experimenters scattered over this country could spend their lives working on the material we have brought in and not exhaust its possibilities. It is hoped that these introductions will attract the attention of amateurs to important and interesting problems in a way which, perhaps, the descriptions themselves would not, and it is with this idea in mind that the following comments are made:

Beet tops as greens are so common a vegetable that those who are fond of them may like to have a perennial variety (No. 46951) sent by Dr. Trabut from North Africa, which yields large quantities of leaf.

From the same source comes a forage grass (*Phalaris coerulescens*, No. 46955) which may be worthy of naturalizing on the dry sheep pastures of California, since the animals forage on the subterranean bulbous parts of it, as Dr. Trabut writes, when all other vegetation is dried up.

The argan tree of Morocco (*Argania spinosa*, No. 46969), which yields a valuable oil, is again introduced, but whether or not it can stand the cold weather of southern California is the question. Earlier attempts have failed.

The Taiwania (No. 46980) is a Formosan conifer of great beauty, which was obtained by Mr. E. H. Wilson personally from Formosa, and every possible effort should be made to establish it in our Southern States.

Mr. Popenoe describes *Tigridia pavonia* (No. 46981) as a fascinating garden vegetable. When in bloom it has attractive flowers varying from yellow to deep scarlet in color. Mrs. Nuttall, who has them in her garden in the City of Mexico, finds that they multiply rapidly and require no cultural attention. The tubers, called cacomite, suggest chestnuts when cooked.

From Rio de Janeiro the Minister of Agriculture, Mr. Cardinell, sends a collection of seeds of unusual forage and fiber plants (Nos. 46985-46999), collected in the States of Matto Grosso and Amazonas, Brazil, by Dr. Geraldo Kuhlmann, of the Rondon Commission. It will be strange if some valuable grasses for the Southern States do not come from this collection.

Mr. Wester sends in the spores of five tropical ferns (Nos. 47011-47015). Since Mr. Hertrich, of Pasadena, and others have been so successful in growing tree ferns from spores, the beautiful tree ferns of the world ought to be introduced and established, as far as it is possible, where they will add grace and beauty to the woodlands and rockeries of southern California and Florida.

Nos. 47017-47057 represent a remarkable collection of forage grasses made by Sr. André Goeldi, State of Para, Brazil, some of which might find a place on our Everglade lands, provided the soil conditions are suitable. Word now comes of Sr. Goeldi's death, and we record here sentiments of sincere regard. The world can ill afford to lose these research men.

To find attractive plants which will live down to the water line on sand dunes is a problem of no mean importance, and Mr. J. Burt Davy's suggestion of *Mimusops caffra* (No. 47099) from the African coast for this purpose is worthy of emphasis.

Since the search for corn is for varieties which have some particularly valuable character that may be incorporated into our American races of corn by breeding, the collection (Nos. 47109-47114) sent by

Mr. Cardinell, which represents varieties reported to grow wild in Matto Grosso, can hardly fail to interest the corn breeders, as will also the dwarf varieties (Nos. 47202 and 47327) sent by Mr. Wester from Cotabato on the island of Mindanao, where this crop has been grown for a long time by the wild tribes.

The roselle as a source of brilliant-red jelly-making material is a valuable plant, and Mr. Fraser's prolific variety (*Hibiscus sabdariffa*, No. 47119), which he has selected on Ramrod Key, Fla., will interest those who are growing the common varieties.

A named collection of 14 varieties of Japanese flowering cherry trees from Yokohama (*Prunus serrulata*, Nos. 47132-47145) includes some of the loveliest of these superb early-flowering trees. It will be recalled that the selected sorts arranged for by Mr. E. H. Wilson and later by Mr. Frank N. Meyer from the famous Arakawa collection near Tokyo were previously introduced.

Mr. Zon, of the Forest Service, is inclined to recommend for trial in Florida the 100-foot Tasmanian cypress pine (*Callitris cupressiformis*, No. 47151), which grows well on the coast on poor soils and may prove useful in furnishing a comparatively soft light wood for local use.

I do not know that the Taranaki rimu (*Dacrydium cupressinum*, No. 47154) has been tried around Santa Barbara, Calif., but, if not, its weeping-willow habit should make it worth trying there.

The culture of certain drug plants has been commercially profitable, and *Strophanthus gratus* (No. 47217), which yields the crystalline strophanthin, may prove to be one of the valuable species for cultivation.

From the quantity of sweets and sweetened chewing gums which many Americans use, it would seem as though their chief aim was to keep their mouths sweet all the time. For such as these Mr. Kirby has sent in from Nigeria seeds of a tropical tree (*Synsepalum dulcificum*, No. 47219) whose berries when eaten in considerable quantity are said to make everything eaten thereafter, for a whole day, whether vinegar, lime juice, or tartaric acid, taste as though it were composed solely of saccharine matter.

Various species of *Vitex* are hardy in America. Because they bloom profusely and produce large quantities of nectar they have been proposed as honey plants. A tropical species, *Vitex grandifolia* (No. 47220) from Nigeria, growing at 1,000 feet altitude, and bearing an edible plumlike fruit which is made into "a kind of honey," will be of particular interest, and it is hoped that it will grow in southern Florida at least.

It is not without a feeling of relief that I call attention to the fact that a remarkable species of tree (*Kokia drynarioides*) has been

saved by Mr. Rock. This tree, which is related to the cotton plant, had become almost extinct—was reduced to a single tree, in fact—but now its progeny, a single tree on Mr. C. C. Conradt's place at Pukoo in Molokai, has borne its first crop, consisting of five seeds. Two of these have been sent to us (No. 47223). To have prevented a tree of such possibilities from becoming extinct may win us more praise from succeeding generations than now seems probable.

It seems almost incredible that no tropical horticulturist has made a real collection anywhere of the anonas for the purpose of their improvement by hybridization. The abo (*Annona senegalensis*, No. 47214), with dark-red flesh, would make possible most remarkable color combinations should some one take up in earnest a study of this fascinating group.

Mr. Benjamin Hunnicutt, of Lavras, Brazil, is convinced of the forage value of the "capim gordura roxa," or molasses grass (*Melinis minutiflora*, No. 47162), and has sent in a quantity of seed. At Lake Alfred, Fla., Mr. John Morley, who has a 2-acre patch of it on which he keeps two dairy cows, finds that if cows are put on the young grass they quickly learn to like it, whereas if the grass is allowed to get coarse they refuse to touch it, perhaps because of its heavy nature.

The brilliancy and grace of the Chorizemas (Nos. 47186 and 47187) as potted plants should make them much better known. They are West Australian shrubs with brilliant orange-red pea-shaped flowers.

A Formosan fir (*Abies mariesii kawakamii*, No. 47198), from the Arnold Arboretum, which grows to 80 feet in height—one of the rarest of the silver firs—and a spruce (*Picea morrisonicola*, No. 47199) from the same interesting region will find their way into our Southern States.

Dr. A. H. Graves, of New Haven, has located a number of chestnut trees (Nos. 47330-47348) which are not dying out but growing well in the area infested by the bark disease. The circumstantial evidence is strong that they have descended from disease-resistant ancestors, and as such may have in them the possibilities of being closely interbred to form a resistant race of the American chestnut.

"Konyaku" (*Amorphophallus konjac*, No. 47226) is an interesting aroid which furnishes a peculiar starch used, as Mr. Swingle discovers, by the manufacturers of aeroplanes and also as a food in Japan. It is grown in the shade of orange trees there and should be tried as a source of starch in America.

Nuts from five selected African oil-palm seedlings (*Elaeis guineensis*, Nos. 47304-47308), coming from Dr. P. J. S. Cramer, of the Buitenzorg Plant-Breeding Station, show that selection is going to mean as much in this important tropical crop as it has in the grains and fruits of the temperate zone.

The clovers represent a group of such great agricultural importance that a new species like the one introduced from Natal (*Trifolium africanum glabellum*, No. 47321) is certain to attract its full share of attention. According to Mr. John Fisher, who sends it from Cedara, it has proved more vigorous than any imported species yet tried at Natal.

Job's-tears have commonly attracted only the attention of those who were looking for seeds from which beads can be made, but the ma-yuen (Nos. 47325 and 47326), a variety from Mindanao, has thin-walled seeds which, according to Mr. Wester, are used for food by the natives.

A relative of the chayote, the tacaco (*Polakowskia tacaco*, No. 47329) of Costa Rica, is a small fruit with a single large seed in it. Unlike the chayote, the fruits refuse to grow if put in the ground, whereas if put on top of the ground and covered with leaves they will sprout. Is there here a clue to some peculiarity worth investigation?

The botanical determinations of seeds introduced have been made and the nomenclature determined by Mr. H. C. Skeels, and 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., October 1, 1921.

INVENTORY.¹

46951 and 46952.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received January 2, 1919. Quoted notes by Dr. Trabut.

46951. BETA VULGARIS L. Chenopodiaceæ. Beet.

"Variety *perennis*. The leaves may be eaten like spinach. It grows spontaneously in the north part of Africa."

46952. PHALARIS TRUNCATA GUSS. Poaceæ. Grass.

"For winter forage."

A perennial about 2 feet high, found in the Mediterranean region. The flowers are borne in a dense spike, resembling timothy. (Adapted from *Pereira Flora de Portugal*, p. 69.)

46953 and 46954. ORYZA SATIVA L. Poaceæ. Rice.

From Manchuria. Presented by Mr. A. A. Williamson, American consul at Dairen. Received January 3, 1919.

"Seeds of two varieties of dry or upland rice, received from the South Manchuria Railway Company and which were grown at the company's experiment station at Kungchuling. These two varieties are said to have given the best results yet obtained at that place, which lies about 400 miles north of Dairen in latitude between the 43d and 44th degrees, about on a line with Concord, N. H." (*Williamson*.)

46953. "A superior spring form of beardless dry-land rice (*chang ch'un wu mang liu tao*)."

46954. "A large-grained variety of dry-land rice bearded with deciduous awns (*tai ch'ing mao liu tao*)."

46955. PHALARIS COERULESCENS Desf. Poaceæ. Grass.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received January 3, 1919.

"Seeds of a good forage grass. Our sheep, in summer time, know how to find the subterranean bulbous parts in the ground and live on them when all other vegetation is dried up." (*Trabut*.)

For previous introduction, see S. P. I. No. 22961.

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 brought into harmony with recognized American codes of nomenclature.

46956. CHENOPodium NUTTALLIAE Safford. Chenopodiaceæ.**Huauhtzontli.**

From the City of Mexico, Mexico. Purchased from Mrs. Zelia Nuttall, Coyacan, Mexico. Received January 3, 1919.

"A form of chenopodium (huauhtzontli) having white or rose-colored seeds. [This shipment includes the] entire crop grown at the little village of Los Reyes, as well as that of an Indian woman in Coyacan. This is the finest kind of chenopodium, not at all bitter. The black kind [S. P. I. No. 45722] is slightly bitter, but the Indians say it is good for one's health and like it." (Mrs. Nuttall.)

For previous introduction, see S. P. I. No. 45536.

For an illustration of the fruiting heads of this plant, see Plate I.

46957. RUBUS GLAUCUS Benth. Rosaceæ.**Andes berry.**

From Palmira, Colombia. Presented by Mr. Charles J. Eder. Received January 11, 1919.

Seeds of a large-fruited berry called *Mora de Castilla*, which grows wild in the subtropical zone of Colombia at an altitude of 6,000 to 8,000 feet.

For previous introduction of cuttings from Mr. Eder, see S. P. I. No. 46800.

46958 to 46962. RIBES VULGARE Lam. Grossulariaceæ.**Garden currant.**

From Seine, France. Plants purchased from Nombrot-Bruneau, Bourg la Reine. Received January 4, 1919.

Plants of the following varieties introduced for experimental work being carried on in the Department.

46958. *Belle de Fontenay.*

46961. *Goudoin rouge.*

46959. *Cassis noir le Naples.*

46962. *Ambrée, couleur de chair.*

46960. *Goudoin blanche.*

46963 to 46967.

From Bahia, Brazil. Presented by Mr. H. M. Curran, through the Gray Herbarium, Cambridge, Mass. Received January 6, 1919.

These were received without information other than Mr. Curran's numbers.

46963. *SCHINOPSIS BRASILIENSIS* Engl. Anacardiaceæ.

Curran No. 233.

46964. *ACACIA* sp. Mimosaceæ.

Curran No. 234.

46965. *PITHECOLOBIUM UNGUIS-CATI* (L.) Benth. Mimosaceæ.

Curran No. 237.

A leguminous shrub or small tree with astringent bark and edible pods; the seeds have medicinal uses. (Adapted from *Bailey, Standard Cyclopedia of Horticulture*, vol. 5, p. 2652.)

For previous introduction, see S. P. I. No. 32916.

46966. *IPOMOEA FISTULOSA* Mart. Convolvulaceæ.

Morning-glory.

Curran No. 253.

46963 to 46967—Continued.

A subshrubby morning-glory with a branched stem, 4 to 10 feet in height. The bell-shaped purplish to pinkish corollas are about 3 inches long. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 3, p. 1659.*)

For previous introduction, see S. P. I. No. 37917.

For an illustration of this morning-glory in full bloom, see Plate II.

46967. MIMOSA sp. Mimosaceæ.

Curran No. 260.

46968. ABELMOSCHUS ESCULENTUS (L.) Moench. Malvaceæ. **Okra.**
(*Hibiscus esculentus* L.)

From Avery Island, La. Presented by Mr. E. A. McIlhenny. Received January 6, 1919.

Seeds secured for cultural and other experiments in the investigation of okra seed as a possible commercial source of oil.

46969. ARGANIA SPINOSA (L.) Skeels. Sapotaceæ. **Argan tree.**
(*A. sideroxyylon* Roem. and Schult.)

From Algiers, Algeria. Presented by Dr. T. H. Kearney, United States Department of Agriculture. Received January 7, 1919.

"Seeds collected from an argan tree growing in the garden of the School of Medicine at Algiers." (*Kearney.*)

The argan tree is in many respects the most remarkable plant of southern Morocco; and it attracts the more attention as it is the only tree that commonly attains a large size and forms a conspicuous feature of the landscape in the low country near the coast. In structure and properties it is nearly allied to the tropical genus *Sideroxyylon* (ironwood); but there is enough of general resemblance, both in its mode of growth and its economic uses, to the familiar olive tree of the Mediterranean region to make it the local representative of that plant. Its home is the sublittoral zone of southwestern Morocco, where it is common between the rivers Tensift and Sous. A few scattered trees only are said to be found north of the Tensift; but it seems to be not infrequent in the hilly district between the Sous and the river of Oued Noun, making the total length of its area about 200 miles. Extending from near the coast for a distance of 30 or 40 miles inland, it is absolutely unknown elsewhere in the world. The trunk always divides at a height of 8 or 10 feet from the ground and sends out numerous spreading, nearly horizontal branches. The growth is apparently very slow, and the trees that attain a girth of 12 to 15 feet are probably of great antiquity. The minor branches and young shoots are beset with stiff, thick spines, and the leaves are like those of the olive in shape, but of a fuller green, somewhat paler on the under side. Unlike the olive, the wood is of extreme hardness, and seemingly indestructible by insects, as we saw no example of a hollow trunk. The fruit, much like a large olive in appearance, but varying much in size and shape, is greedily devoured by goats, sheep, camels, and cows, but refused by horses and mules; its hard kernel furnishes the oil which replaces that of the olive in the cookery of southern Morocco and is unpleasant to the unaccustomed palate of Europeans. (Adapted from *Hooker and Ball, A Tour in Morocco, p. 96.*)

For previous introduction, see S. P. I. No. 3490.



**A NEW FOOD PLANT, THE HUAUHTZONTLI OF MEXICO. (CHENO-
PODIUM NUTTALLIAE SAFFORD, S. P. I. No. 46956.)**

The unique inflorescence of this plant, in the stage shown in the photograph, is a favorite vegetable with the Mexican Indians. The flowering tips, or rather those on which seed is just beginning to ripen, are boiled or fried. These form, according to Mrs. Zelia Nuttall, for whom the plant was named, a very nutritious and appetizing dish. It should be tested in comparison with lamb's-quarters, of which it is a relative. (Photographed by Dr. W. E. Safford from a plant collected by Maximino Martinez, near the City of Mexico, Mexico, July, 1918.)



A STRIKING SUBSHRUBBY MORNING-GLORY FROM BRAZIL. (IPOMOEA FISTULOSA MART., S. P. I., No. 46966.)

This handsome subshrubby plant is said by Mr. P. H. Dorsett to be a feature of the roadsides around Joazeiro, Brazil. It grows to a height of 8 or 10 feet and produces its lavender-pink flowers in great profusion. The bell-shaped corollas are about 3 inches long. (Photographed by P. H. Dorsett, Joazeiro, Bahia, Brazil, February 24, 1914; P14943FS.)

46970 to 46972. RIBES VULGARE Lam. Grossulariaceæ.**Garden currant.**

From Langport, Somerset, England. Plants purchased from Kelway & Son. Received January 7, 1919.

The following varieties of garden currants have been purchased for experimental use in the Department.

46970. *Kelway's Somerset.*

46972. *Kelway's Latest of All.*

46971. *Kelway's Eclipse.*

46973 and 46974.

From Ecuador. Presented by Dr. J. N. Rose, associate curator, United States National Herbarium. Received January 10, 1919.

46973. *PROSOPIS CHILENSIS* (Molina) Stuntz. Mimosaceæ. **Algaroba.**
(*P. juliflora* Swartz.)

"Seeds of the mesquite, called algaroba, which in Ecuador is a very common shrub or tree on the dry parts of the coast. The pods, which are produced in great abundance, are very sweet and form a staple food for horses, mules, and cattle. The wood is very hard and of a dark-brown color. It makes fine fence posts, tool handles, the very best of charcoal, and is an important firewood on railroad engines." (*Rose.*)

For previous introduction, see S. P. I. No. 45165.

46974. *HYMENOCALLIS* sp. Amaryllidaceæ.

"Bulbs of *Hymenocallis* obtained through Mr. Alfred Cartwright, at Guayaquil. Mr. Cartwright states that this plant has beautiful white flowers with long, slender, almost filiform, pendent petals." (*Rose.*)

46975. PYRUS sp. Malaceæ.**Pear.**

From Canton, China. Fruits presented by Mr. G. Weidman Groff. Received January 14, 1919.

"Wild pear, known in Cantonese as *ye sha lu*. Collected on hills near Canton. A possible stock for pear." (*Groff.*)

46976. ORYZA SATIVA L. Poaceæ.**Rice.**

From Nansuchou, Anhwei, China. Presented by Mr. J. L. Buck. Received January 17, 1919.

"Early white fragrant rice (nonglutinous) from Hsinghwa (near Yengcheng) Kiangsu, China." (*Buck.*)

46977. CANAVALI ENSIFORME (L.) DC. Fabaceæ.**Jack bean.**

From China. Presented by Rev. J. E. Shoemaker, Yuyao, via Ningpo. Received January 23, 1919.

"A Chinese white bean of low-growing habit, which bears a mammoth pod." (*Shoemaker.*)

46978. PYRUS SEROTINA Rehder. Malaceæ. **Pear.**

From Japan. Presented by the Arnold Arboretum, Jamaica Plain, Mass.
Received February 7, 1919.

"Wilson No. 11162."

"This species seems to be most closely related to *Pyrus bretschneideri* Rehder, which is easily distinguished by the leaves being broadly cuneate at the base, by the smaller flowers, and by the yellow color of the fruit. Its leaves resemble closely those of *P. ovoides* Rehder, so that it seems impossible to distinguish these two species with certainty without flowers or fruits; in fruit, however, the persistent calyx of the ovate yellow fruit of *P. ovoides* presents a good character, and the flowers of *P. ovoides* may be distinguished by the styles being pubescent at the base. This species was introduced by E. H. Wilson in 1909. This pear and probably other brown-fruited species are called by the Chinese *tang-li*." (*Proceedings of the American Academy of Arts and Sciences*, vol. 50, No. 10.)

For previous introduction, see S. P. I. No. 46702.

46979. PYRUS KAWAKAMII Hayata. Malaceæ. **Pear.**

From Formosa. Presented by the Arnold Arboretum, Jamaica Plain, Mass. Received January 20, 1919.

(Wilson No. 10876.)

"This pear is a native of the island of Formosa and resembles *Pyrus lindleyi*, from which it differs in having the leaves acute at both ends. The punctate, reddish fruits are globose and about one-third of an inch in diameter. (Adapted from *Journal of the College of Science of the Imperial University, Tokyo*, vol. 30, p. 99.)

46980. TAIWANIA CRYPTOMERIODES Hayata. Pinaceæ.

From Formosa. Presented by the Arnold Arboretum, Jamaica Plain, Mass. Received February 7, 1919.

(Wilson No. 10853.)

"The loftiest tree [in the forests of Formosa] is the *Taiwania*, which rears its small moplike crown well above all its neighbors. The average height of this tree is from 150 to 180 feet, but specimens exceeding 200 feet are known. The trunk is sometimes as much as 30 feet in girth, quite straight and bare of branches for 100 to 150 feet. It is a strikingly distinct tree, singularly like an old *Cryptomeria*, and both trees suggest gigantic *Lycopods*. In the dense forests the crown is small, dome shaped or flattened, the branches few and short, and one wonders how so little leafage can support so large a tree. When the top is broken by storms, the lateral branches assume an erect position. In the more open forest the branches are massive and wide spreading, the crown oval or flattened, and on small trees the branchlets are often pendent. The *Taiwania* sheds its smaller inner branches as do *Cryptomeria*, *Cunninghamia*, and *Sequoia*." (*Journal of the Arnold Arboretum*, vol. 2, p. 35.)

46981. TIGRIDIA PAVONIA (L. f.) Ker. Iridaceæ. **Tiger flower.**

From Coyacan, Mexico. Bulbs and seeds presented by Mrs. Zelia Nuttall, through Wilson Popenoe. Received January 23 and 27, 1919.

"*Cacomite*. Among the plants used as food by the ancient Mexicans, the *cacomite* is one which has received comparatively little attention in modern times.

"This species is common on the slopes of the valley of Mexico, and is still used by the Indians to a limited extent. Doubtless, it was of much greater importance as a foodstuff in ancient times than it is to-day. Mrs. Nuttall has planted in her garden a number of bulbs gathered on the hillsides near her home and has found that they multiply rapidly and require no cultural attention. When in bloom, the plants are beautiful, their flowers varying from yellow to deep scarlet in color. As an ornamental plant the *Tigridia* is already known in other countries, but the use of its bulbs as an article of food is not common outside of Mexico. When fully developed, the bulbs are slightly less than 2 inches in diameter. For eating, they are usually boiled, or parboiled and fried. When boiled they are mealy and have a very agreeable flavor somewhat suggesting that of chestnuts.

"It is suggested by Mrs. Nuttall that the cacomite be given a careful trial in the southern United States as a root crop. When grown from seed it requires two seasons for the bulbs to reach maturity, but they demand very little cultural attention, and the ornamental character of the flowers should make the cultivation of the cacomite very attractive to those who are interested in new and rare vegetables." (*Wilson Popenoe.*)

For previous introduction, see S. P. I. No. 11627, Inv. 11, p. 63 ("Undetermined"), which has been identified as *Tigridia pavonia*.

46982. *TUTCHERIA SPECTABILIS* (Champ.) Dunn. Theaceæ.

From Hongkong, China. Presented by the Botanical and Forestry Department. Received January 23, 1919.

A handsome, ornamental small tree or shrub, indigenous to the island of Hongkong. The leaves are alternate, short petioled, coriaceous, and shining. The flowers are about 2½ inches in diameter, usually having seven white, roundish obovate petals. The fruit, which is the size of a small apple, retains at the base the persistent sepals, and contains several fairly large seeds. The plant flowers in May and fruits in November. (Adapted from *Champion, Transactions of the Linnæan Society, vol. 21, p. 111.*)

For previous introduction, see S. P. I. No. 45720.

46983. *MANISURIS EXALTATA* (L. f.) Kuntze. Poaceæ. (*Rottboellia exaltata* L. f.)

From the Philippine Islands. Sent by Dr. W. H. Weston to the Office of Acclimatization and Adaptation of Crop Plants. Received January 9, 1919.

From fields near the experiment station farm, College of Agriculture, Los Banos, Philippine Islands. This seed was introduced for the use of the officials of the Office of Acclimatization and Adaptation of Crop Plants.

For previous introduction, see S. P. I. No. 39927.

46984. *PERSEA AMERICANA* Mill. Lauraceæ. **Avocado.** (*P. gratissima* Gaertn. f.)

From Ambato, Ecuador. Bud sticks collected by Dr. J. N. Rose. Numbered January, 1919.

"Avocado from Ambato. Fruit brownish to black, but sometimes green or red, 2½ to 4 inches long. A fine fruit but small." (*Rose.*)

"Budwood of an avocado from Ambato, with sassafras-scented leaves. This variety apparently belongs to the Mexican race. It is likely to be hardier than

most other varieties and should be tested in sections of the United States which are slightly too cold for avocados of the West Indian or Guatemalan races. It will probably prove to be a small-fruited variety of rich flavor, as the Mexican race usually produces fruits of this character." (*Wilson Popenoe.*)

46985 to 46999.

From Rio de Janeiro, Brazil. Presented by Mr. H. A. Cardinell, Ministerio da Agricultura. Received January 23, 1919.

"I am sending you sample quantities of seeds of forage and fiber plants which arrived last week from the States of Matto Grosso and Amazonas. I happened to be at the botanical gardens when this collection arrived there, so I stayed and made you a little collection. These seeds were collected by Dr. Geraldo Kuhlmann, who is the collector of the Rondon Commission." (*Cardinell.*)

46985. *ABUTILON RAMIFLORUM* St. Hil. Malvaceæ.

"Fiber plant called *Uanchuma*, a very delicate fiber from Matto Grosso."

46986. *CROTALARIA FOLIOSA* Benth. Fabaceæ.

"Fiber plant from Matto Grosso, Brazil."

46987. *CROTALARIA MAYPURENSIS* H. B. K. Fabaceæ.

"From 'Pimento Bueno,' Matto Grosso. Grows on all soils."

46988. *HIBISCUS SPATHULATUS* Garke. Malvaceæ.

"Fiber plant from Matto Grosso."

46989. *PAVONIA PANICULATA* Cav. Malvaceæ.

"Fiber plant from the State of Amazonas, which grows on all alluvial sandy-clay soils."

46990. *SIDA RHOMBIFOLIA CANARIENSIS* (Willd.) Schum. Malvaceæ.

"Fiber plant from 'Barao de Capanema,' (linha telegraphica), Matto Grosso."

46991. *SIDA RHOMBIFOLIA SURINAMENSIS* (Miquel) Schum. Malvaceæ.

"Fiber plant from 'Pimento Bueno,' Matto Grosso."

46992. *TRIUMFETTA SEMITRILOBA* Jacq. Tiliaceæ.

"Fiber plant; seed collected at 'Presidente Penna,' Matto Grosso."

46993. *WISSADULA PERIPLCIFOLIA* (L.) Griseb. Malvaceæ.

"Fiber plant from 'Barao de Melgaco,' Matto Grosso."

46994. *AXONOPUS* sp. Poaceæ.

Grass.

"From Matto Grosso."

46995. *AXONOPUS* sp. Poaceæ.

Grass.

"From Matto Grosso; on sandy-clay soil."

46996. *CASSIA FLEXUOSA* L. Cæsalpiniaceæ.

"Forage plant from 'Rio Sacre,' in the State of Matto Grosso."

46997. *ERAGROSTIS MAYPURENSIS* (H. B. K.) Steud. Poaceæ.

Grass.

"From Matto Grosso."

46985 to 46999—Continued.

46998. *ICHNANTHUS CALVESCENS* (Nees) Doell. Poaceæ. **Grass.**

"Called *Papuan*, and considered the best forage plant in *Matto Grosso*."

46999. *PASPALUM MULTICAULE* Poir. Poaceæ. **Grass.**

"A good forage annual grown on all soils in *Matto Grosso*."

47000. *CICER ARIETINUM* L. Fabaceæ. **Chick-pea.**

From Mexico. Obtained through Mr. S. W. Augenstein, steward, Cosmos Club, Washington, D. C., from General Alvaro Obregon, Sinaloa, Mexico. Received January 31, 1919.

Chick-peas, or garbanzos, grown on the ranch of Gen. Obregon in the State of Sinaloa, Mexico. Immense quantities of this grain are grown in Mexico and shipped to Spain, where it forms a staple article of food.

47001. *DIOSCOREA ALATA* L. Dioscoreaceæ. **Yam.**

From Florida. Tubers of a yam growing at the Plant Introduction Field Station, Miami. Obtained April 7, 1905, from Mr. H. W. Steadman, Lemon City, Fla. Its previous history is unknown. Numbered for convenience in distribution. Received January, 1919.

"A white-fleshed yam of good quality, suitable for cultivation in southern Florida. It is thought to be identical with the Agua yam of the West Indies. The plant has been described as a rampant grower and a good yielder. A single tuber may weigh as much as 15 pounds. This yam may be baked or boiled and prepared in other ways, much like potatoes. It is best to pare before boiling. This variety is more moist than most others and, after boiling, usually may be mashed and beaten without milk. It is ivory white in color, but when beaten, after being boiled and mashed, it becomes nearly pure white." (*R. A. Young.*)

47002 and 47003. *COLOCASIA ESCULENTA* (L.) Schott. Araceæ. **Dasheen.**

Tubers growing at the Plant Introduction Field Station, Brooksville, Fla. Numbered January, 1919, for convenience in recording distribution. Descriptive notes by Mr. R. A. Young.

47002. "*Sacramento*. From Sacramento, Calif. Procured by Mr. Peter Bisset in a Chinese store, under the name of 'China potato.' Received November, 1913. A dasheen similar in leaf characters to the *Trinidad* variety. The name *Sacramento* is given to it because the variety was obtained in that city. As compared with the *Trinidad* dasheen, the *Sacramento* variety has considerably fewer and larger tubers. Both corms and tubers are more regular in form, and when cooked they are generally lighter in color and are not so dry; this variety has much less flavor, however, than the *Trinidad* dasheen."

47003. "*Ventura*. From Ventura, Calif. Presented by Mr. L. B. Hogue, who obtained it several years previously from a local Chinese gardener. Received in March, 1916. The name *Ventura* is given to signify the place whence the variety was obtained. A variety of dasheen similar in general appearance to the *Trinidad* dasheen. The bases of the

47002 and 47003—Continued.

leafstalks and the buds of the corms and tubers are distinctly more reddish in color than in the latter variety, however. The quality is similar to that of the *Trinidad* variety."

47004. PERSEA AMERICANA Mill. Lauraceæ. Avocado.

(*P. gratissima* Gaertn. f.)

From the City of Mexico, Mexico. Collected in the market by Mr. Wilson Popenoe, Agricultural Explorer for the Department of Agriculture. Received January 20, 1919.

"A small-fruited, Mexican avocado for growing stocks on which to bud the Guatemalan introductions and other choice varieties." (*Wilson Popenoe.*)

47005 and 47006. PENNISETUM SETOSUM (Swartz) L. Rich. Poaceæ. Grass.

From Rio de Janeiro, Brazil. Presented by Mr. H. A. Cardinell, Ministerio da Agricultura. Received January 23, 1919.

47005. "Forage plant found on all soils in the State of Matto Grosso."

47006. "From Matto Grosso."

47007. COELOCOCCUS AMICARUM (Wendl.) W. F. Wight. Phœnicæ. Ivory-nut palm.

(*C. carolinensis* Dingl.)

[cææ. Ivory-nut palm.]

From Honolulu, Hawaii. Fruits presented by Dr. Harold L. Lyon, Experiment Station of the Hawaiian Sugar Planters' Association. Received January 23, 1919.

"These fruits were collected a few days ago on the premises of Mr. John Scott, of Hilo. Mr. Scott purchased fruits of this palm from a sea captain many years ago and succeeded in rearing one plant which is now a large, handsome palm, the only fruiting specimen in these islands." (*Lyon.*)

"A pinnate-leaved palm introduced into Guam from the Caroline Islands. The nuts are of an ivorylike texture and are exported from the Carolines to Germany for button making. The spheroid fruit, about 7 centimeters long and 8 centimeters in diameter, has a reddish brown, glossy, scaly shell. The surface of the seed is glossy, black, and thickly striped but not furrowed. The allied species of the Solomon Islands (*Coelococcus solomonensis*) has a straw-colored shell, and that of *C. vitiensis* of Fiji, which is not used in the arts, is yellow. The inflorescence of this genus has not yet been described. In some of the Solomon Islands the natives prepare sago from the pith of the species growing there. It is said to keep well and not to be injured by salt water, so that it is a valuable food staple to take with them on their canoe voyages." (*Contributions from the U. S. National Herbarium, vol. 9, p. 244.*)

47008. MILLETTIA RETICULATA Benth. Fabaceæ.

From Houston, Tex. Cuttings presented by Mr. Charles E. Hogans. Received January 24, 1919.

"Cuttings of a wistaria which, I believe, is rare in this country. It was given to me by a Japanese who had imported a few plants; he called it 'Formosan wistaria.' It blooms here in August, holds blooms for over 30 days, and the flowers are a dark red. It holds its leaves all winter if the weather is not extreme, and they are of a darker green than those of other varieties." (*Hogans.*)

47009. HOLCUS SORGHUM L. Poaceæ.**Sorghum.***(Sorghum vulgare Pers.)*

From Angola, Africa. Presented by Rev. M. W. Ennis, Cuma, Benguela.
Received January 28, 1919.

"Seed of kafir. From the ordinary native *ovasa*, which is white with a buff bloom, I selected certain heads which produced a red grain, and from the plants grown I selected a white strain (which seems to be a variety of the Blackhull kafir). This grows vigorously on any land suited to the growth of maize. People from the Cape say that it is the strongest growing kafir that they ever saw. It makes a good flour which is not as liable to discoloration when used in baking as the flour made from the ordinary kafir. It requires a long season." (*Ennis.*)

47010 to 47015.

From Zamboanga, Philippine Islands. Presented by Mr. P. J. Wester, agricultural adviser. Received January 27, 1919.

47010. CAPSICUM ANNUUM L. Solanaceæ.**Red pepper.**

"Seed of a very pungent, large, red pepper, originally from Costa Rica, that might prove superior to the ordinary chili. Seed should be saved for local distribution." (*Wester.*)

47011 to 47015.

"Spores of five ferns, probably *Cyathea*, *Marattia*, *Pteris*, and *Polypodium* spp. All these grow near sea level on Basilan in a hot, damp climate. The *Cyathea* and *Marattia* are especially attractive." (*Wester.*)

47011. CYATHEA sp. Cyatheaceæ.**Fern.****47012 and 47013. MARATTIA spp. Marattiaceæ.****Fern.****47014. POLYPODIUM sp. Polypodiaceæ.****Fern.****47012 and 47013, MARATTIA spp. Marattiaceæ.****Fern.****47016. SPIRAEA sp. Rosaceæ.****Spirea.**

From Chefoo, China. Presented by Mr. A. Sugden. Received January 27, 1919.

"Seeds of our big white spirea." (*Sugden.*)

47017 to 47057. Poaceæ.**Grasses.**

From Para, Brazil. Presented by Sr. André Goeldi through Mr. George H. Pickerell, American consul. Received January 7, 1919. Quoted notes by Mr. Goeldi.

"These species of grasses form the gramineous covering of the campos of Marajo Island."

[The economic value of most of these grasses is unknown. They will be tested by the agronomists of the United States Department of Agriculture.]

47017. ANDROPOGON BREVIFOLIUS Swartz.

"No. 19."

47018. AXONOPUS AUREUS Beauv.

"No. 23."

47017 to 47057—Continued.

47019. *AXONOPUS COMPRESSUS* (Swartz.) Beauv.

"No. 14."

47020. *AXONOPUS* sp.

"No. 15."

47021. *CHAETOCHELOA IMPRESSA* (Nees) Hitchc. and Chase.

"No. 16."

47022. *CHAETOCHELOA* sp.

"No. 21. Not native in Marajo. I found this kind growing in plant pots and plant boxes which contained fruit trees brought from the city of Para. Even in Para itself this species is not native and I have never found it on any of my collecting trips."

47023. *ERAGROSTIS GLOMERATA* (Walt.) L. H. Dewey.

"No. 36."

47024. *ERIOCHLOA* sp.

"No. 26."

47025. *HOMALOCENCHRUS HEXANDRUS* (Swartz) Kuntze.

"No. 18."

47026. *LEPTOCHELOA VIRGATA* (L.) Beauv.

"No. 38."

47027. *MESOSETUM LOLIIFORME* (Hochst.) Chase.

"No. 13."

47028. *OLYRA LATIFOLIA* L.

"No. 41."

47029. *ORYZA LATIFOLIA* Desv.

"No. 1. A kind of native rice, growing on not inundated soil in Marajo. It is an interesting kind for several reasons. In the first place, it is the tallest I ever heard of, growing sometimes to a height of 8 feet. In the second place, it is a perennial kind, growing in large isolated bunches for several years, flowering and bearing seeds the whole year round. Its leaves are very broad. The kernels may not have any industrial or culinary value, but as a cattle feed the green plant might be useful. Besides this, I consider this kind interesting from a phytogeographical standpoint, demonstrating that real native kinds of rice are to be found in the Amazonian region."

47030. *PANICUM AQUATICUM* Poir.

"No. 20."

47031. *PANICUM MAXIMUM* Jacq.

"No. 24. A guinea grass of gigantic growth, completely different from the common one we have here. The common guinea grass has narrow leaves and reaches to a height of about 4 feet. This kind is stronger and much taller, having a very broad leaf and reaching a height of 7 or more feet. It is not a native grass of this country, but was introduced from Jamaica in soil which was packed around banana suckers, growing among the banana trees and especially where the suckers had been laid down before planting."

47032. *PANICUM MAXIMUM* Jacq.

"No. 25. The common guinea grass; introduced, not native."

47017 to 47057—Continued.

47033. *Panicum pilosum* Swartz.

"No. 33."

47034. *Paspalum conjugatum* Berg.

"No. 35."

47035 to 47037. *Paspalum densum* Poir.

47035. "No. 6. An interesting kind. When it is flowering or even bearing ripe seeds, the whole flower or seed bunch secretes a thick sweet siruplike liquid in considerable quantity, which is much sought after by wasps, ants, bees, and other sweet-liking insects."

47036. "No. 7."

47037. "No. 27."

47038. *Paspalum denticulatum* Trin.

"No. 28."

47039. *Paspalum larranagai* Arech.

"No. 5. Not native in the Amazonian region, but introduced."

47040 to 47042. *Paspalum millegranum* Schrad.

47040. "No. 3."

47042. "No. 29."

47041. "No. 22."

47043 to 47049. *Paspalum plicatulum* Michx.

47043. "No. 8."

47047. "No. 17."

47044. "No. 9."

47048. "No. 30."

47045. "No. 10."

47049. "No. 31."

47046. "No. 11."

47050. *Paspalum virgatum* L.

"No. 39."

47051 to 47054. *Paspalum* sp.

47051. "No. 2."

47053. "No. 32."

47052. "No. 12."

47054. "No. 42."

47055. *Pennisetum setosum* (Swartz) L. Rich.

"No. 34."

47056. *Syntherisma* sp.

"No. 40."

47057. *Valota insularis* (Elmg.) Chase.

"No. 37."

47058. *Dolichos lablab* L. Fabaceæ.**Bonavist bean.**

From West Indies. Presented by the Cotton Research Department, St. Vincent, through Mr. S. Cross Harland. Numbered February, 1919.

"Seed of a bush form of *Dolichos lablab*. The seeds are white, and the eating qualities are distinctly good. Under our conditions the plants commence to bloom in about 5 weeks from sowing, and the whole crop is over in about 10 weeks." (*Harland.*)

47059. OXALIS CRENATA Jacq. Oxalidaceæ.

From Paris, France. Tubers presented by Mr. Stuart R. Cope. Received January 31, 1919.

"I am sending you a couple of tubers of *Oxalis crenata*, which has recently made its appearance in the markets here as a vegetable. It is directed to be cooked as crosnes (*Stachys tuberifera*), which is a common vegetable here and usually fried in fat, but I am informed that this *Oxalis* may also be boiled and mashed like turnips." (Cope.)

47060. MIKANIA sp. Asteraceæ.

From Oran, Argentina. Presented by Mr. S. W. Damon. Received January 23, 1919.

"Seeds received from Antonio de Llamas, Corrientes, Province de Corrientes, in reply to my request for seeds of *Stevia rebaudiana*, who says, 'I am sending you seeds of a plant called *yerba dulce, caâ-eeba, nungâ-catu* (sweet herb) from Curuguati. I doubt that they are *Stevia*. They remind me of the genus *Mikania*.'" (Damon.)

47061 to 47092.

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received January 31, 1919.

Peas introduced for the specialists of the United States Department of Agriculture, who are experimenting with disease-resistant varieties.

47061. PISUM ARVENSE L. Fabaceæ. Field pea.

Nain mange-tout à large cosse.

47062 to 47092. PISUM SATIVUM L. Fabaceæ. Garden pea.

47062. Quarante deux de Sarcelles.

47063. Michaux de Hollande.

47064. Michaux de Ruelle.

47065. Michaux ordinaire.

47066. Merveille d'Etampes.

47067. Serpette améliorée à longue cosse.

47068. Sabre.

47069. De Clamart.

47070. Gros carré vert Normand.

47071. Colosse.

47072. Ridé gros blanc à rames.

47073. Nain à chassis très hâtif.

47074. Nain très hâtif d'Annonay.

47075. Du Chemin longue.

47076. Nain très hâtif Gontier à grain vert.

47077. Très nain Couturier.

47078. De Clamart nain hâtif.

47079. Petite Merveille.

47080. Sans parchemin hâtif longue cosse.

47081. Sans parchemin beurre.

47082. Mange-tout à rames grain vert.

47061 to 47082—Continued.

47083. *Sans parchemin corne de bélier.*
 47084. *Sans parchemin de St. Desirat.*
 47085. *Sans parchemin très nain hâtif a châssis.*
 47086. *Nain mange-tout De Barbieux.*
 47087. *Prince Albert.*
 47088. *Le Bienfaiteur.*
 47089. *Caractacus.*
 47090. *Delices des gourmets.*
 47091. *d'Auvergne (Pois serpette).*
 47092. *Serpette vert.*

47093 and 47094. PYRUS COMMUNIS L. Malaceæ. Pear.

From St. Petersburg, Fla. Cuttings presented by Mr. Martin Campas. Received February 4, 1919.

47093. "I was favorably impressed with this pear. It is attractive in appearance, in texture, and in quality. It seemed to me to be a very great improvement over the Kieffer and over any other variety that I know of which is adapted to the far South. If the tree is satisfactory and is reasonably resistant to blight, it seems to me that there may be something in this variety which would be worth considering very carefully in connection with the planting of pears in the South." (H. P. Gould.)

47094. Another pear highly recommended by the sender.

47095 to 47101.

From Johannesburg, Africa. Presented by Mr. J. Burt Davy. Received February 4, 6, 7, and 10, 1919.

47095. ACOKANTHERA VENENATA (Thunb.) Don. Apocynaceæ.

"Along the coast at Kuyona, South Africa." (Davy.)

This shrub or gnarled tree, sometimes 14 feet high, is a native of the coast region of South Africa, and is usually found along streams. It bears axillary corymbs of small, white to pink, sweet-scented flowers and globose purplish black fruits 1 inch in diameter. The thick, coriaceous leaves are ovate to lanceolate and from 1 to 4 inches long. The root is used by the natives for poisoning arrows. (Adapted from *Thiselton-Dyer, Flora Capensis, vol. 4, sect. 1, p. 500.*)

47096. ALLIUM CEPA L. Liliaceæ. Onion.

"Yellow Cape onion." (Davy.)

47097. ANNONA CHERIMOLA Mill. Annonaceæ. Cherimoya.

"Grown at Maritzburg, Natal, South Africa (Warm Temperate Zone)." (Davy.)

47098. LAGENARIA VULGARIS Seringe. Cucurbitaceæ. Gourd.

"Markalas." (Davy.)

47099. MIMUSOPS CAFFRA E. Meyer. Sapotaceæ.

A somewhat hoary or glaucous evergreen tree or shrub forming a large proportion of the sea-dune vegetation, but also extending inland

47095 to 47101—Continued.

on sandy soils. On the dunes it grows down to the water line, fully exposed to sea winds, and where these winds prevail is consequently usually dwarfed and heavily branched from the base. In shelter it gets up to about 10 meters in height and 30 to 45 centimeters in diameter, but even there it is heavily branched and very gnarled and crooked, and consequently yields first-rate knees, etc., for boat building. The leaves are firmly coriaceous and widely obovate. The flowers are usually in clusters of two to four in the axils along the branch. The fruit, which is red, is 2 centimeters long, tapers to a point, and is relished by children. Abundant along the coast and through Mchopes; also in Cape Colony and Natal. (Adapted from *Sim, Forest Flora and Forest Resources of Portuguese East Africa*, p. 80.)

47100. *RHOICISSUS ERYTHRODES* (Fres.) Planch. Vitaceæ.
(*Vitis erythrodes* Fres.)

A shrubby, suberect plant, native to Abyssinia. The leathery compound leaves are made up of three leaflets, the terminal one obovate, 2 to 3 inches long, the lateral ones broadly ovate; all are smooth and deep green above, but covered with fine gray pubescence below. The scarlet flowers occur in small lateral cymes, and the globose fruits are about half an inch in diameter. (Adapted from *Oliver, Flora of Tropical Africa*, vol. 1, p. 401.)

47101. *TRITONIA* sp. Iridaceæ.

"Ornamental from the extreme south of Natal, on the Pondeland border." (*Davy.*)

47102 to 47107. Poaceæ.**Grasses.**

From Pretoria, Union of South Africa. Presented by Mr. Alex Holm, Department of Agriculture. Received February 6, 1919. Quoted notes by Mr. Holm.

"Native grasses of the Transvaal."

47102. *ANDROPOGON* sp.

"No. 2. A useful fodder grain."

Received as *A. purpureo-sericeus* Hack., but it does not agree with the material of that species in the United States National Herbarium.

47103. *ARUNDINELLA ECKLONII* Nees.

"No. 3. A useful fodder grain."

47104. *CHLORIS GAYANA* Kunth.

Rhodes grass.

"No. 4. A useful fodder grain."

47105. *CHLORIS PETRAEA* Thunb.

"No. 5. A useful fodder grain."

47106. *CYMBOPOGON POLYNEUROS* (Steud.) Stapf.

"No. 1. Used commercially for the extraction of oil."

47107. *PENNISETUM RUPPELLII* Steud.

"No. 6. Is valuable horticulturally."

47108. ANNONA MURICATA L. Annonaceæ. Soursop.

From San Lorenzo, Colombia. Presented by Mr. M. T. Dawe. Received February 7, 1919.

"A variety from the Cauca Valley, with roundish fruits of moderate size." (Dawe.)

A small, evergreen, tropical American tree, about the size of a peach tree, with leathery, ill-smelling, glossy leaves, large flowers with fleshy exterior petals, and very large fleshy green fruits with white, juicy, pleasantly subacid pulp. It is commonly cultivated in the Tropics of the Old World. A fine drink is made from the juice, and excellent jelly and preserves are prepared from the pulp. It is easily propagated from seeds or by budding. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 1, p. 292.*)

For previous introduction, see S. P. I. No. 45908.

47109 to 47114. ZEA MAYS L. Poaceæ. Corn.

From Rio de Janeiro, Brazil. Presented by Mr. H. A. Cardinell, Ministerio da Agricultura. Received February 6, 1919.

"A rather curious collection of corn grown by the various Indian tribes of the States of Matto Grosso and Amazonas. This corn came from an exhibit prepared by a commission from that district for the last national corn show held in Rio de Janeiro in August, 1918. The commission informed me that this corn is absolutely wild in Matto Grosso and the Indians have made no attempt at its improvement. The ears I am sending were grown by the Amazon Indians more than 1,500 kilometers (930 miles) from the Madeira River, which is a branch of the River Amazon and forms in part the boundary between the two above-named States; that is, it was brought 930 miles before it reached that river. This will give you an idea of the distance this corn traveled before reaching Rio de Janeiro." (Cardinell.)

47109. No. 1. Kernels yellow with dark-red streaks.

47110. No. 2. Kernels dusky brownish red.

47111. No. 3. Kernels tawny.

47112. No. 4. Kernels dusky red, almost black.

47113. No. 5. Kernels yellow with dark-red streaks.

47114. No. 6. Kernels pale yellow and small.

47115. ORYZA SATIVA L. Poaceæ. Rice.

From Nanhsuchou, Anhwei, China. Presented by Mr. J. L. Buck. Received February 7, 1919.

"Red fragrant rice (nonglutinous) from Hsinghwa (near Yengcheng) Kiangsu, China." (Buck.)

47116 and 47117.

From Haiti. Presented by Mr. Chester J. Hunn, Ithaca, N. Y. Received February 8, 1919.

47116. ORYZA SATIVA L. Poaceæ. Rice.

"Rice paddy collected in Haiti in 1917, at a newly established experiment station conducted by the United States Marines a few miles south and west of Port au Prince." (Hunn.)

47116 and 47117—Continued.**47117. ZEA MAYS L. Poaceæ.****Corn.**

"Corn collected in Haiti in 1917 at a newly established experiment station conducted by the United States Marines a few miles south and west of Port au Prince. This corn was selected from among the ear corn purchased for the animals, and the exact locality from which it came is unknown, except that it was in the southern peninsula to the west of a line drawn from Port au Prince to Jacmel." (*Hunn.*)

47118. ARISTOLOCHIA RINGENS Vahl. Aristolochiaceæ.

From Las Sabanas, Panama. Presented by Mr. G. F. Dietz. Received February 10, 1919.

"Seeds of a vine from Jamaica called '*gallito.*'" (*Dietz.*)

A tall, slender, twining, glabrous plant with broadly orbicular-reniform leaves dull pale green above and glaucous below. The flowers are 7 to 10 inches long, pale green, marbled and reticulated with black-purple. It is found in Venezuela and in the West Indies. (Adapted from *Curtis's Botanical Magazine*, pl. 5700.)

47119. HIBISCUS SABDARIFFA L. Malvaceæ.**Roselle.**

From Ramrod Key, Fla. Presented by Mr. J. R. Fraser. Received February 10, 1919.

"In my experiments with the roselle, I observed one plant that seemed somewhat superior to the others, and after the first picking I let it mature its seed. The first picking yielded 8 pounds of fruit [the usual yield is 4 pounds of fruit per plant], and the second picking yielded 10 pounds of fruit, a total of 18 pounds per plant. The calyces on this plant were 2½ inches in length and 1½ inches in diameter at the base." (*Fraser.*)

For previous introduction, see S. P. I. No. 46001.

47120. GARCINIA MANGOSTANA L. Clusiaceæ.**Mangosteen.**

From Buitenzorg, Java. Presented by the director, Botanic Garden. Received February 11, 1919.

"This delicious fruit is about the size of a mandarin orange, round and slightly flattened at each end, with a smooth, thick rind, rich red-purple in color, which, when cut, exposes the white segments, five, six, or seven in number, lying loose in the cup. The cut surface of the rind is a most delicate pink in color and is studded with small yellow points. The separate segments are between snow white and ivory in color, and are covered with a delicate network of fibers. As one poises the dainty bit of snowy fruit on his fork and looks at the empty pink cup from which it has been taken, he hardly knows whether the delicate flavor or the beautiful coloring of the fruit pleases him more. The texture of the mangosteen pulp much resembles that of a well-ripened plum, but is extremely delicate, and the flavor is quite indescribably delicious. This fruit produces no feeling of satiety, such as the banana and the mango do, for there is little substance to the delicate pulp." (*David Fairchild.*)

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

**47121. CARDIOSPERMUM HALICACABUM MICROCARPUM Blume. Sap-
indaceæ. Balloon vine.**

From Zamboanga, Philippine Islands. Presented by Mr. P. J. Wester, agricultural adviser. Received January 27, 1919.

"An annual climbing vine, native of Zamboanga, with balloonlike seed pods that, together with the delicate foliage, make the plant an attractive ornamental." (*Wester.*)

47122. RUBUS GLAUCUS Benth. Andes berry.

From Palmira, Colombia. Presented by Charles J. Eder. Received February 6, 1919.

"Seeds from Palmira, Valle, Republic of Colombia; altitude 6,000 feet; average temperature 65° F." (*Eder.*)

Mora de Castilla. This berry, which appears to grow wild, attains a size and shape comparable to that of our best cultivated varieties, and to my mind has a better flavor than any of them. (Adapted from *notes by Dr. F. M. Chapman.*)

Cuttings of this berry previously received were given S. P. I. No. 46800.

47123. ARTHROSTYLIIDIUM CAPILLIFOLIUM Griseb. Poaceæ. Climbing bamboo.

From New Providence, Bahama Islands. Plants presented by Father C. N. Field and Mr. W. F. Doty, American consul, Nassau. Received February 11, 1919.

"A climbing bamboo, 15 meters or more in height, repeatedly branching, swinging down from the trees in great curtains or festooning lower growth, with the linear or filiform blades crowded on short sterile branchlets, these arranged in dense whorls like great pompons at the nodes." (*Contributions from the U. S. National Herbarium, vol. 18, p. 397.*)

47124. ELAEIS GUINEENSIS Jacq. Phœnicaceæ. Oil palm.

From Buitenzorg, Java. Presented by the director, Botanic Gardens. Received February 12, 1919.

This palm is very important economically. The fruit is used by the natives for food; an intoxicating drink is made from the juice of the stem; the leaf stalks and leaves are used for thatching the native houses; and the fleshy outer layer and the kernels of the fruit each yield a commercial oil—that from the fleshy part being the ordinary palm oil used in the manufacture of soap and candles and that from the kernels being the white or nut oil used for making margarine or artificial butter. It is a native of west tropical Africa and occurs over immense areas both wild and in cultivation. (Adapted from *Macmillan, Handbook of Tropical Gardening and Planting, p. 538.*)

Dorsett, Shamel, and Popenoe, in Department of Agriculture Bulletin No. 445, mention the uses of this tree in Brazil, and in regard to the oil from the pulp say: "Dendé oil is an important food product, entering into the preparation of a number of dishes, some of which, such as vatapá, are considered peculiar to the region. While utilized by all classes of people, its greatest popularity is among the negroes, long familiarity having made dendé oil almost as indispensable to them as olive oil is to the Spaniard."

For previous introduction, see S. P. I. No. 45766.

47125. IPOMOEA COPTICA (L.) Roth. Convolvulaceæ.*(I dissecta Willd.)***Morning-glory.**

From Cairo, Egypt. Presented by the director, Horticultural Section, Gizeh Branch, Ministry of Agriculture. Received February 13, 1919.

A slender, trailing, annual vine generally distributed throughout the Tropics. The digitate leaves, 1 to 2 inches across, are divided into five deeply pinnatifid segments. The large, white flowers, often 6 inches long, are borne singly or in clusters of two or three. (Adapted from *Thiselton-Dyer, Flora of Tropical Africa, vol. 4, sect. 2, p. 176.*)

47126. SALVIA HISPANICA L. Menthaceæ.**Chia.**

From San Luis Potosi, Mexico. Procured by Mr. Cornelius Ferris, jr., American consul. Received February 13, 1919.

"This seed was obtained in the semitropical region of the State of San Luis Potosi and is known simply as *chia*. It is the kind used in making the drink called *chia*." (*Ferris.*)

For previous introduction, see S. P. I. No. 46645.

47127. CROTALARIA INCANA L. Fabaceæ.

From Cairo, Egypt. Presented by the director, Horticultural Section, Gizeh Branch, Ministry of Agriculture. Received February 14, 1919.

"A bushy, half-shrubby legume forming plants 3 to 6 feet high and 2 to 4 feet across. Flowers yellow." (*C. V. Piper.*)

For previous introduction, see S. P. I. No. 31593.

47128 and 47129. SOJA MAX (L.) Piper. Fabaceæ. Soy bean.

From Harbin, Manchuria. Presented by Mr. Lewis S. Palen. Received February 17, 1919. Quoted notes by Mr. W. J. Morse.

47128. "Straw-yellow soy beans obtained from Peiliatze, Manchuria."

47129. "Early black soy beans obtained from Peiliatze, Manchuria."

47130 and 47131. SOJA MAX (L.) Piper. Fabaceæ. Soy bean.

From Harbin, Manchuria. Presented by Mr. Charles H. Tuck. Received February 17, 1919. Quoted notes by Mr. W. J. Morse.

47130. "Early yellow soy beans grown in the vicinity of Harbin."

47131. "Early black soy beans grown in the vicinity of Harbin."

47132 to 47145. PRUNUS SERRULATA Lindl. Amygdalaceæ.**Flowering cherry.**

From Yokohama, Japan. Cuttings purchased from the Yokohama Nursery Co. Received February 18, 1919.

The following descriptions are either adapted from Miyoshi, "Japanische Bergkirschen," *Journal of the College of Science, Tokyo*, vol. 34, art. 1, or quoted from Wilson, "The Cherries of Japan." The times of flowering noted in the descriptions from Miyoshi, of course, are for Japan.

47132. "*Aryake*." Branches brown-gray, young leaves yellow-brown, inflorescence in two to four flowered long-pedunculate false umbels, blossoms white or delicate pink. Single and slightly double blossoms ap-

47132 to 47145—Continued.

pear on the same tree. Blossoms in mid-April. (*Miyoshi*, p. 98, under *P. serrulata* Lindl. forma *candida*.)

"Flowers pale pink, single or semidouble, very large and fragrant. This is a very striking form." (*Wilson*, p. 51, under *P. lannesiana* forma *ariake*.)

47133. "*Choshuhizakura*." A medium-sized tree with spreading top, brown-gray twigs, deep-red young leaves, inflorescence in two to four flowered pedunculate umbels or corymbs, flowers 4 centimeters in diameter and uniformly rose color. The red young leaves and rose-colored flowers make this cherry very attractive. Blossoming time, mid-April. (*Miyoshi*, p. 121, under *P. serrulata* Lindl. forma *splendens*.)

"Flowers pink, single or semidouble. This form is of little horticultural interest." (*Wilson*, p. 51, under *P. serrulata* var. *sachalinensis* forma *choshuhizakura*.)

47134. "*Fugenzo*." A medium-sized tree with long, pendent inflorescences, two green leaflets in the flower bud, and striking full-blown flowers, red at first but soon becoming white. The flower buds open one after another, thus prolonging the blossoming time usually to the 1st of May. I have seen the last flower as late as the 1st of June. (*Miyoshi*, p. 123, under *P. serrulata* Lindl. forma *classica*.)

"One of the most beautiful of all cherries and now well known in gardens under the name of James H. Veitch. The flowers are rose pink, and the variety is distinguished by the presence of two leafy carpels in the center of each flower. Its Japanese name is *Kofugen* or *Benifugen*, and this and its white form (*alborosea*) are the only kinds of Japanese cherries which have green and leafy carpels." (*Wilson*, p. 39, under *P. serrulata* var. *sachalinensis* forma *fugenzo*.)

47135. "*Horinji*." A small tree with dark-gray twigs, yellowish brown young leaves, and flowers with roundish petals, the outer rank pink, the inner rank white. Blossoming time from the middle to the end of April. (*Miyoshi*, p. 110, under *P. serrulata* Lindl. forma *decora*.)

"This is a very beautiful form, with clusters of pale-pink double or semidouble flowers." (*Wilson*, p. 40, under *P. serrulata* var. *sachalinensis* forma *horinji*.)

47136. "*Kanzakura*." "Flowers single, pale pink, and rather small. A curious cherry which blooms in late winter, hence its Japanese name *Kanzakura*, i. e., winter cherry." (*Wilson*, p. 31, under *P. serrulata* var. *spontanea* forma *praecox*.)

47137. "*Kokonoye*." A small tree with erect slender branches, light-gray twigs, brownish green young leaves, inflorescence in two to four flowered pedunculate umbels or false umbels with uniformly pink flowers. Blossoms in mid-April. (*Miyoshi*, p. 107, under *P. serrulata* Lindl. forma *homogena*.)

47138. "*Kongozan*." "Flowers pink, single. This form is of little horticultural interest." (*Wilson*, p. 52, under *P. lannesiana* forma *kongozan*.)

47139. "*Oshimazakura*." A large tree with young leaves delicate brown turning to green, green peduncles, green calyces, and large, white, fragrant flowers in four to five flowered corymbs. (*Miyoshi*, p. 42, under *P. mutabilis* forma *speciosa*.)

47132 to 47145—Continued.

"As it came under my observation in Japan, this cherry is quick growing and obviously short lived. It makes a tree 6 to 10 meters tall with a trunk 1 to 2 meters in girth, and has thick spreading and ascending-spreading branches. The bark is pale gray and smooth even on old trees. The shoots are stout, usually with prominent lenticels, grayish at first and often passing to dull reddish purple before becoming finally pale gray. The leaves are glabrous and green, but as they open often have a more or less brownish, metallic luster; they are ovate or rarely obovate, abruptly caudate-acuminate, double-serrate, and the teeth are long-aristate. The flowers are fragrant, everywhere glabrous, white (pinkish in the bud) and may appear before or with the leaves; the peduncle is sometimes almost wanting; usually it is from 2 to 4 centimeters long, but occasionally it is 6 centimeters and even more in length. The scaly involucre bracts are slightly viscid, the bracts subtending the pedicels are green, obovate, glandular-ciliate and very prominent. The fruit is ovoid, black, and lustrous.

"In this cherry the peduncle is extremely variable in length, often on the same individual tree, but this character has no taxonomic value in this or any other Japanese species. Varieties and forms have been based on this character, which is not only inconstant, but may vary from year to year. Koidzumi has distinguished the wild plant under the name of *speciosa*, but I can not discover any differences between a series of specimens from wild trees and those from cultivated trees. Koehne says this plant is in cultivation in Europe under the name *P. serrulata yoshino*. In Japan the vernacular name Yoshino is applied to *P. yedoensis* Matsumura, and not to any form of *P. lannesiana*. Koidzumi gives the vernacular name of Ohyamasakura to the wild plant. The cultivated plant and its forms are known as *oshimazakura* or as *sakura*." (Wilson, p. 45, under *P. lannesiana* forma *albida*.)

47140. "*Ranzan*." "Flowers single, pink, on long slender pedicels. This is a very pleasing form." (Wilson, p. 52, under *P. lannesiana* forma *ranzan*.)

47141. "*Shirayuki*." A moderately large tree with numerous closely crowded, erect-spreading branches, smooth brown-gray twigs, yellowish brown young leaves, and white flowers with hairy peduncles. Blossoming time, mid-April. (Miyoshi, p. 127, under *P. serrulata* Lindl. forma *nivea*.)

"With its large flowers this distinct form resembles *P. yedoensis* Matsumura, but the bracteoles show that it belongs to *P. serrulata* Lindl. The branches are erect-spreading and the flowers white, single or nearly so." (Wilson, p. 34, under *P. serrulata* var. *pubescens* forma *sirayuki*.)

47142. "*Shitoyefugen*." [No description of this variety has been found.]

47143. "*Surugadainioi*." A moderately large tree with brown-gray twigs, brownish red young leaves, and white, fragrant flowers. Blossoming time about the end of April. (Miyoshi, p. 132, under *P. serrulata* Lindl. forma *surugadai-odora*.)

"Flowers semidouble, fragrant, nearly white, pendulous on long slender pedicels. This is a late-flowering form." (Wilson, p. 51, under *P. lannesiana* forma *surugadai-odora*.)

47132 to 47145—Continued.

47144. "*Takinioi*." A medium-sized tree with spreading branches, brown-gray twigs, brown-red young leaves, flower buds with reddish tips, and white, fragrant flowers. Blossoming time about the end of April. (*Miyoshi*, p. 133, under *P. serrulata* Lindl. forma *cataracta*.)

"Flowers single, white, and very fragrant. The vernacular name [*takinioi*] signifies 'fragrance from cataract.'" (*Wilson*, p. 48, under *P. lannesiana* forma *cataracta*.)

47145. "*Ukonzakura*." A middle-sized tree with light yellow-green flowers, the outermost petals of which are pinkish on the outer surface. Blossoming time the last of April. A subform *luteoides* of lighter yellow-green color (Asagi) is found in Kohoku. (*Miyoshi*, p. 124, under *P. serrulata* Lindl. forma *luteovirens*.)

"Flowers greenish yellow, semidouble or double. This is a very striking cherry with large flowers, borne in great profusion. The Japanese names are Ukon and Asagi." (*Wilson*, p. 56, under *P. lannesiana* forma *grandiflora*.)

47146. *CACARA EROSA* (L.) Kuntze. Fabaceæ. Yam bean.
(*Pachyrhizus angulatus* Rich.)

From Miami, Fla. Collected by Mr. Edward Simmonds, Plant Introduction Field Station. Received February 13, 1919.

"A twining, wiry stemmed plant with large tuberous roots, occasionally grown in the West Indies. It has also been tested in Florida, and has proved to be quite successful at Miami. Its roots, which sometimes become very large, contain much starch." (*Wilson Popenoe*.)

An analysis of the tubers by the United States Bureau of Chemistry gave the following percentages: Total solids, 15.01; ash, 0.53; alkalinity of ash (as K_2CO_3), 0.59; acid (as H_2SO_4), 0.06; protein ($N \times 6.25$), 1.34; crude fat, 0.21; sucrose, 1.81; invert sugar, 2.70; starch, 5.46; fiber, 1.36.

47147. *COLOCASIA* sp. Araceæ. Taro.

Found growing, without mark of identification, in the autumn of 1912 at the Plant Introduction Field Station, Brooksville, Fla. Possibly from Java. Numbered for convenience in distribution.

"This taro resembles the Trinidad dasheen in its habit of developing oval cormels, or lateral tubers, but differs materially from it in several important respects: (1) It is a better keeper; (2) the lateral tubers rarely send up leaf shoots, which makes the harvesting and cleaning of the crop easier; (3) the corms and tubers are much more moist and require a curing period of 6 or 8 weeks after harvesting before they are suitable for table use; (4) the flesh remains more nearly white when cooked; and (5) the flavor is even more mild than that of the Trinidad dasheen.

"Because of the necessity for a curing period, this taro is to be considered as one for late winter and spring use only. Since it is less dry and firm than the Trinidad dasheen, and has less tendency to darken after cooking, it is believed that in its proper season this variety will prove very popular on the market. The lateral tubers are much better baked than boiled." (*R. A. Young*.)

47148. LACTUCA SATIVA L. Cichoriaceæ. Lettuce.

From Khartum, North Africa. Presented by Mr. R. E. Massey, Government botanist, Central Research Farm, Sudan Government. Received February 20, 1919.

"A sample of lettuce seed which may interest you." (*Massey.*)

47149 to 47153.

From Richmond, Victoria, Australia. Presented by Mr. F. H. Baker. Received February 20, 1919.

47149. ACACIA IMPLEXA Benth. Mimosaceæ.

A tall Australian tree, 50 feet high, with light-green, sickle-shaped, lanceolate leaves 4 to 7 inches long, cream-colored flowers in short racemes, and light-brown pods 4 to 5 inches long, curved like an interrogation mark. The dark-brown, hard, close-grained wood is much used for turnery and for all purposes which call for tenacity and strength. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 1, p. 186*, and from *Maiden, Useful Native Plants of Australia, p. 357.*)

For previous introduction, see S. P. I. No. 44321.

47150. CALLISTEMON RIGIDUS R. Br. Myrtaceæ.

"Bottle-brush plant; grows to a height of 4 to 6 feet." (*Baker.*)

A low shrub with linear, rigid leaves 2 to 5 inches long. The flowers are borne in dense spikes and the protruding stamens have brilliant crimson filaments an inch long, tipped with darker colored anthers. (Adapted from *Bentham, Flora Australiensis, vol. 3, p. 121.*)

47151. CALLITRIS CUPRESSIFORMIS Vent. Pinaceæ.

"Grows in sand ridges where there is a small rainfall. It is a fine tree." (*Baker.*)

"This pine is described by Col. W. V. Legge in a report on 'The Tasmanian Cypress Pine,' published [in 1911]. According to this paper, the tree is confined mainly to the coast, where it does well on poor soils. It seems to have a slow growth, but in time reaches a height of 100 feet and a diameter of about 2½ feet. In spite of the fact that it is chiefly a warm-climate tree, it also thrives in some of the colder parts of Tasmania where there is considerable frost. It has a plain whitish wood, without figure, and with little difference in color between the sapwood and the heartwood. Its grain is hard and close, and the wood is exceedingly durable. It is largely used for piles, telegraph poles, and in general construction work. It not infrequently grows in mixture with eucalypts, and when grown in the forest under moderate light conditions its form is that of a sharp cone which is tall in proportion both to the diameter and to the spread of the lateral branches. There are all gradations from this form to the spreading, bushy tree found in the open.

"Since Florida is apparently the region in the United States best adapted to this species, I would advise growing some at Miami for experimental planting in the Florida National Forest. Although the tree is widely used for a great variety of purposes in Tasmania, I doubt if it would prove superior to our own conifers and believe that the chief advantage in introducing it into Florida would probably be to furnish a comparatively soft, light wood for local use." (*Raphael Zon.*)

47149 to 47153—Continued.

Received as *Callitris rhomboidea*, for which we are now using the name given above.

For previous introduction, see S. P. I. No. 32071.

47152. INDIGOFERA AUSTRALIS Willd. Fabaceæ.

“Native indigo plant, a beautiful shrub, with violet flowers.” (*Baker.*)

An erect-branching shrub 2 to 4 feet high, with pinnately compound leaves. The 9 to 11 leaflets, about three-fourths of an inch long, vary from nearly linear to almost orbicular, and the showy red flowers are borne in dense racemes. (Adapted from *Bentham, Flora Australiensis, vol. 2, p. 199.*)

47153. STERCULIA DIVERSIFOLIA DOB. Sterculiaceæ.

“*Kurrajong.*”

Found in Victoria, New South Wales, and Queensland. Useful as human food, as a forage crop, and as a fiber plant. The taproots of young trees and the young roots of old trees are used as food by the aborigines; when boiled they have a flavor similar to that of turnips, but sweeter. The seeds of this and other species are edible, and make a good beverage. Cattle and sheep are fond of the leaves and branches and in some dry seasons have existed for long periods on scarcely anything else. In parts of the Riverina (New South Wales) the trees are cut down as required for this purpose. A strong fiber is obtained from the bark; it is used by the aboriginals for making fishing nets, in both eastern and western Australia. (Adapted from *Maiden, Useful Native Plants of Australia, pp. 59, 140, and 633.*)

Received as *Brachychiton populneum*, which is now referred to the species named above.

47154. DACRYDIUM CUPRESSINUM Soland. Taxaceæ. Rimu.

From Auckland, New Zealand. Presented by Mr. H. R. Wright. Received February 25, 1919.

“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 of a red or yellow color and beautifully marked. It is used to great advantage in dadoes, 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.” (*Laing and Blackwell, Plants of New Zealand, p. 74.*)

For previous introduction, see S. P. I. No. 46575.

47155 to 47160.

From Japan. Presented by the Arnold Arboretum, Jamaica Plain, Mass. Numbered February, 1919.

47155 to 47160—Continued.

47155. *PYRUS FAURIEI* C. Schneid. Malaceæ. Pear.

Wilson No. 11256.

An apparently thorny shrub with small leaves $2\frac{1}{2}$ to 3 centimeters long, smooth above and sparingly pubescent beneath, smooth young fruits about 4 millimeters through, and with the calyx fugacious. This species is very striking, because of its extremely small leaves, flowers, and fruit. (Adapted from *Schneider, Illustriertes Handbuch der Laubholzkunde vol. 1, p. 666.*)

47156. *PYRUS* sp. Malaceæ. Pear.

Wilson No. 11254. From Chosen (Korea).

47157. *PYRUS* sp. Malaceæ. Pear.

Wilson No. 11258.

47158. *PYRUS* sp. Malaceæ. Pear.

Wilson No. 11260.

47159 and 47160. *PYRUS USSURIENSIS* Maxim. Malaceæ. Pear.

47159. Long peduncled. Wilson No. 11262.

"In our work the wild *Pyrus ussuriensis* has shown greater resistance to pear-blight than any other species, and since this species also endures more cold than any other, it should prove of great value in breeding work." (*F. C. Reimer.*)

47160. Short peduncled. Wilson No. 11261. From Manchuria. See preceding number.

47161. *ROSA LAXA* Retz. Rosaceæ. Rose.

From Jamaica Plain, Mass. Plants presented by the Arnold Arboretum. Numbered February, 1919.

This rose, which is found from Turkestan to Songaria and Altai, is an upright shrub with paired hooked thorns. The leaflets are small and light green, and the flowers are small and white. The small fruits are oval oblong. (Adapted from *Bailey, Standard Cyclopaedia of Horticulture, vol. 5, p. 2998.*)

47162. *MELINIS MINUTIFLORA* Beauv. Poaceæ. Molasses grass.

From Lavras, Minas Geraes, Brazil. Presented by Mr. Benjamin H. Hunicutt, Director da Escola de Lavras. Received February 26, 1919.

"*Capim gordura roxa*, as this grass is called, literally means 'greasy purple grass.' I have seen *Capim gordura roxa* live down the wild fern that is such a plague in some districts and form a dense carpet between 3 and 4 feet thick upon which it was almost possible to walk. When riding or walking through it in the pasture under normal conditions one finds that the proportion of wax and grease on the blades is sufficient to thoroughly clean and polish his boots; this is no exaggeration, but is often remarked. The grass is not watery, but is unusually palatable to cattle and horses. The wax or grease, according to one analysis, totals as much as 3.22 per cent of the dry digestible matter. It is sensible to the fingers, which it makes quite sticky. I have not met it in any other country, and I believe that it is indigenous to the central part of Brazil, not thriving in the south nor in the sandier coast States of the north. It is fairly drought resistant, and comes up fairly well again after a fire. There is a related variety called *Capim gordura branco* of a bright

emerald-green color, but without the resistance of *roxa*. I have found both of the above grasses growing up to 2,000 meters on Caparaó, one of the highest mountains of Brazil, and at 1,000 meters living down the wild fern; both these altitudes are subject to frost; I have also ridden through them on the uplands of Minas Geraes when they were coated with a dense white frost." (*R. T. Day.*)

For previous introduction, see S. P. I. No. 41148.

An illustration of a field of molasses grass is shown in Plate III.

47163. CICER ARIETINUM L. Fabaceæ. Chick-pea.

From Mexico. Presented by Mr. S. W. Augenstein, steward, Cosmos Club, Washington, D. C. Received February 27, 1919.

"A large-seeded variety grown in Mexico." (*Augenstein.*)

47164. PAULOWNIA FORTUNEI (Seem.) Hemsl. Scrophulariaceæ.

From Japan. Presented by the Arnold Arboretum, Jamaica Plain, Mass. Received February 21 and 28, 1919.

(Wilson No. 11181.)

A magnificent tree, 30 to 60 feet high, much resembling the well-known *Paulownia imperialis* but having slightly shorter panicles of larger lilac or purple-tinted flowers dotted with purple on the inside of the corolla. A native of central Formosa. (Adapted from *T. Ito, Icones Plantarum Japonicarum, vol. 1, No. 3, p. 5, pl. 9.*)

Received as *Paulownia mikado*, for which we are now using the name given above.

47165. PSYCHOTRIA UNDATA Jacq. Rubiaceæ.

From Littleriver, Fla. Presented by Dr. V. K. Chesnut, Bureau of Chemistry, United States Department of Agriculture. Received February 28, 1919.

"Collected the last half of October, 1918, at Littleriver, Fla., by Prof. Charles T. Simpson." (*Chesnut.*)

For experimentation with other nitrogen-gathering rubiaceous plants at the Miami Plant Introduction Field Station, Miami, Fla. For a discussion of nitrogen-gathering bacteria in Rubiaceæ see note under *Pavetta zimmermanniana*, S. P. I. No. 45554.

47166 to 47172. SACCHARUM OFFICINARUM L. Poaceæ.

Sugar cane.

From Santiago de las Vegas, Cuba. Presented by Dr. Mario Calvino, director, Estacion Experimental Agronomica. Received February 28, 1919.

"The following seeds came from Cuba." (*Calvino.*)

47166. *Cuba 903.*

47167. *Cuba 904.*

"The following seeds were sent to us from Barbados." (*Calvino.*)

47168. *Ba. 6032.*

47171. *Ba. 7924.*

47169. *B. 6308.*

47172. *B. H. 10 (12).*

47170. *B. 7169.*

47173 to 47184. SACCHARUM OFFICINARUM L. Poaceæ.

Sugar cane.

From Santiago de las Vegas Cuba. Presented by Dr. Mario Calvino director, Estacion Experimental Agronomica, through Dr. P. A. Yoder, of the Bureau of Plant Industry. Received March 4, 1919.

47173. <i>C. 903.</i>	47179. <i>C. 917.</i>
47174. <i>C. 904.</i>	47180. <i>C. 4.</i>
47175. <i>C. 905.</i>	47181. <i>C. 8.</i>
47176. <i>C. 907.</i>	47182. <i>C. 9.</i>
47177. <i>C. 908.</i>	47183. <i>C. 21.</i>
47178. <i>C. 912.</i>	47184. <i>903 de gorro.</i>

47185 to 47193.

From Blackwood, South Australia. Presented by Mr. Edwin Ashby. Received March 4, 1919. Quoted notes by Mr. Ashby.

47185. BOSSIAEA sp. Fabaceæ.

"An upright-growing leafless shrub, with flattened ribbonlike stems and pea-shaped flowers all up the stem. Collected in the quarantine station at Sydney."

47186 and 47187. CHORIZEMA ILICIFOLIUM Labill. Fabaceæ.

47186. "A pretty shrub from Western Australia, about 3 to 4 feet high, with brilliant orange-red pea-shaped flowers. It blooms for many months in winter and spring."

47187. "Similar to the preceding number—with bright red and orange flowers. It blooms in the spring, but not over so long a period as the preceding number."

Received as *Chorizema grandiflora*, for which name a place of publication has not been found. It is apparently a large-flowered form of *C. ilicifolium*.

47188. ERICA HOLOSERICEA Salisb. Ericaceæ.

(*E. andromedaeflora* Andr.)

"This is a handsome and distinct species."

47189. GREVILLEA LAVANDULACEA Schlecht. Proteaceæ.

"This is a charming, shrubby plant which grows in sandy soil, about 1 foot high and from 1½ to 2 feet broad; it flowers very freely. This variety is better than the Victorian."

47190. HIBISCUS HUEGELII WRAYÆ (Lindl.) Benth. Malvaceæ.

"From the Gawler Ranges, South Australia. A tall shrub bearing large mauve-colored flowers. This is the handsomest of all the Australian 'desert roses.'"

47191. KENNEDYA COMPTONIANA (Andrews) Link. Fabaceæ.

(*Hardenbergia comptoniana* Benth.)

"This is a fine climber. The sprays of flowers are very long and deep violet, and the leaves are more deeply cut than in the variety around Perth, Western Australia."

47192. OLEARIA TERETIFOLIA (Sond.) F. Muell. Asteraceæ.

(*Aster teretifolius* F. Muell.)

"A bright-green almost broomlike shrub, native of Kangaroo Island, this State. It grows to 5 feet in height and is covered with masses of



A FIELD OF MOLASSES GRASS IN BRAZIL. (MELINIS MINUTIFLORA BEAUV., S. P. I. No. 47162.)

This is the most important native pasture grass in Brazil, where it is known as *Capim melado* and *Capim gordura*; it is also native to parts of Africa. Although it is naturally abundant as a wild plant in Brazil, it is also cultivated extensively and is considered a very valuable forage, especially for fattening stock. The grass grows to a height of 3 to 4 feet and is very leafy; the blades have a strong molasseslike odor and are very sticky. Molasses grass was first introduced into the United States in 1899. It is well adapted to Florida and Gulf Coast conditions and will survive cold well below the freezing point, though the herbage becomes blackened. For the southern half of Florida it has shown considerable value as a pasture grass and at present is being planted rather extensively. Cattle must first acquire a taste for this grass before they will eat it readily. At Chico, Calif., it grew well, but did not withstand the winter. It may prove valuable in southern California. (Photographed by P. H. Dorsett, Lavras, Minas Geraes, Brazil, January 20, 1914; P14658FS.)



A NEW RELATIVE OF THE CHAYOTE, THE TACACO OF COSTA RICA. (POLAKOWSKIA TACACO PITTIER, S. P. I. No. 47329.)

A popular vegetable among the Costa Ricans, the tacaco, which is closely allied to the chayote (the mirliton of the New Orleans Creoles) has never been tried in the United States. It comes highly recommended as a delicious and palatable dish when prepared for the table by boiling or baking and can probably be used in as many diverse forms as the chayote itself. (Photographed by Wilson Popenoe, San Jose, Costa Rica, June 17, 1920; P17951FS.)

47185 to 47193—Continued.

small white flowers which give the bush when in flower a snowlike appearance. It stands clipping well and should make a good dwarf border hedge."

47193. TEMPLETONIA sp. Fabaceæ.

"A shrub which produces large pinkish flowers in winter; from Cottesloe Beach, Western Australia. It grows well in sand."

47194 to 47197.

From Buitenzorg, Java. Presented by the director, Botanic Garden. Received March 7, 1919. Quoted notes by Wilson Popenoe.

47194 and 47195. LANSIUM DOMESTICUM Jack. Meliaceæ. Langsat.

47194. "This, like the mangosteen, is a delicious oriental fruit not yet well established in America. While it is not so famous as the mangosteen, it is highly esteemed throughout the Malayan region and is praised by many travelers. Judging from our limited experience with it, the langsat is slightly harder than the mangosteen, and there seems to be no reason why it should not succeed with us. A few plants have been grown in the West Indies and other parts of the American Tropics, but I have yet to hear of its fruiting outside the Orient. The langsat has two allies in America; one is the well-known umbrella tree (*Melia azedarach*) naturalized in the Southern States; the other is the tropical mahogany (*Swietenia mahagoni*). The genus *Lansium*, to which the langsat belongs, is a small one; and this species is the only one cultivated for its fruit.

"The tree is rather slender in habit, with a straight trunk and compound leaves composed of three or more pairs of elliptic to obovate leaflets 3 or 4 inches in length. The fruits, which ripen in the Straits Settlements from July to September, are produced in small clusters; in general appearance they suggest large loquats, the surface being straw colored and slightly downy. The skin is thick and leathery and does not adhere to the white, translucent flesh, which separates into five segments. The flavor is highly aromatic, at times slightly pungent. Each segment of the flesh normally contains an oval seed, but some of the segments in each fruit are usually seedless. The fruit is commonly eaten while fresh, but it is said also to be utilized in various other ways.

"The name *lanzón* is applied to this fruit in the Philippine Islands, but *langsat*, or *lanseh*, is the form used in the Malay Peninsula."

47195. "*Duku*, or *dockoc*. The duku, a fruit closely resembling the langsat, is commonly considered a botanical variety of *Lansium domesticum*."

47196 and 47197. NEPHELIUM LAPPACEUM L. Sapindaceæ. Rambutan.

"The rambutan is one of the commonest and at the same time most palatable fruits of the Malay Peninsula. Trees are to be seen in almost every garden in Singapore and Penang, and in its season the fruit is hawked everywhere in the streets.

"The tree grows to a height of about 40 feet and when in fruit is a handsome sight, the terminal clusters of bright crimson fruits being pro-

47194 to 47197—Continued.

duced on every branch. The compound leaves are made up of oblong-ovate leaflets, about 4 inches in length and $1\frac{1}{2}$ inches wide. In habit of growth the tree appears to be normally rather round topped and spreading, but as it is frequently planted among numerous other trees it is forced to grow tall and slender, branching only at a considerable height above the ground.

"According to J. D'Almeida Pereira, of Singapore, there are 8 or 10 varieties of the rambutan, the difference being in form and coloring. The natives, however, do not distinguish between any of these varieties. Among the varieties of the true rambutan the differences do not seem to be very well marked or of great importance.

"In appearance a cluster of rambutans, when highly colored, is exceptionally attractive. The best forms attain, when fully ripe, a rich crimson color, while the poorer ones are greenish or yellowish, sometimes a combination of these two and lacking any tinge of crimson. The individual fruits are slightly smaller than a hen's egg, but more elongated in form; they are covered with soft spines about half an inch in length, and are borne in clusters of rarely more than 10 or 12. The pericarp is not thick or tough, and to eat the fruit the basal end is usually torn off, exposing the aril. The flavor is mildly subacid and somewhat vinous. An oblong flattened seed is inclosed by the aril.

"A description of the rambutan, taking as a type one of the best forms, is as follows: General form oblong elliptical; weight averaging about 1 ounce; dimension, length $1\frac{1}{8}$ inches, breadth $1\frac{1}{4}$ inches; base rounded or slightly tapering; stem slender, short; peduncle 8 to 10 inches long, woody, medium stout, bearing 3 to 10 fruits; surface covered with slender, soft fleshy spines under half an inch in length; color when ripe, crimson or crimson maroon, yellowish when not fully ripe; pericarp one-sixteenth to one-eighth of an inch thick, firm, greenish, aril whitish, transparent, about one-fourth of an inch thick, meaty, very juicy, flavor subacid, vinous, pleasant; seeds one, large, oblong, compressed, pointed at the apex, the aril adhering to it closely. For inferior varieties about the only change to be made would be in the size and coloring of the fruit."

47196. *Pamboetan si kouto*. 47197. *Atjeh lebak boelaes*.

47198. *ABIES MARIESII KAWAKAMII* Hayata. Pinaceæ. **Fir.**

From Formosa. Presented by the Arnold Arboretum, Jamaica Plain, Mass.
Received February 21, 1919.

This differs from the type in having longer cylindrical cones and black seeds. *Abies mariesii* is a tree 40 to 50 (occasionally 80) feet high, of compact, pyramidal form; the young shoots are very densely covered with red-brown down which persists several years. The leaves, one-third to an inch long and one-twelfth of an inch wide, are dark shining green and deeply grooved above, glaucous beneath with two broad bands of stomata. The lower ranks spread horizontally, while the upper shorter ones point forward and completely hide the shoot. The egg-shaped cones, 3 to 4 inches long and about 2 inches wide, are purple when young. It is one of the rarest of the silver firs. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 123.*)

47199. PICEA MORRISONICOLA Hayata. Pinaceæ. Spruce.

From Formosa. Presented by the Arnold Arboretum, Jamaica Plain, Mass.
Received February 28, 1919.

A spruce with smooth branches, linear leaves 6 to 16 millimeters long, and oblong-cylindrical cones about 6 centimeters long. It grows on the slopes of Mount Morrison, Formosa, at an altitude of 9,500 feet. (Adapted from *Journal of the College of Science, Tokyo, vol. 25, art. 19, p. 220.*)

47200 to 47202.

From Zamboanga, Philippine Islands. Presented by Mr. P. J. Wester, agricultural adviser. Received February 25, 1919. Quoted notes by Mr. Wester.

47200. IPOMOEA sp. Convolvulaceæ Morning-glory.

"A white-flowered Ipomoea which should prove an addition to the ornamental flora of Florida and Porto Rico."

47201. MERREMIA sp. Convolvulaceæ.

"A purple-flowered Merremia which should prove an addition to the ornamental flora of Florida and Porto Rico."

47202. ZEA MAYS L. Poaceæ. Corn.

"A corn variety, discovered on a recent visit to Kudurangan, Cotabato, Mindanao, that matures 72 days from planting, and so may be of value to your corn breeders. This corn has been grown for many years (no one knows how many) by one of the wild tribes in Cotabato."

47203. LYCOPERSICON ESCULENTUM Miller. Solanaceæ. Tomato.

From Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion horticulturist, Central Experiment Farm. Received March 5, 1919.

"Tomato 1919, Alacrity A." (*Macoun.*)

47204 to 47212.

From Los Banos, Philippine Islands. Collected by Mr. Nemesio Catalan and presented by Dr. E. B. Copeland, of the college farm. Received March 6, 1919. Quoted notes by Mr. Catalan.

47204. ANTIDESMA BUNIUS (L.) Spreng. Euphorbiaceæ.

"*Bignay.* Collected from the college farm."

47205. CANARIUM LUZONICUM (Blume) A. Gray. Balsameaceæ.

"This tree is a source of the 'brea blanca' of commerce. The stone of the fruit (seed) contains an oily endosperm which is very good to eat. The plant is found in the forest at lower altitudes. Collected from Mount Maquiling."

47206. CORDIA BLANCOI Vidal. Boraginaceæ.

"*Anonang.* Collected from the college farm."

47207. ERYTHRINA VARIEGATA Stickin. Fabaceæ.

(*E. indica* Lam.)

"*Dapdap.* A tree with brilliant red flowers which form a very showy inflorescence. Collected on the college farm."

47208. KOORDERSIODENDRON PINNATUM (Blanco) Merr. Anacardiaceæ.

(*K. celebicum* Engl.)

47204 to 47212—Continued.

"*Anuguis*. A tree attaining a medium to large size, growing in the forest at lower altitudes. The wood falls under the third grade, according to Philippine classification. Collected at Mount Maquilang."

47209. *ORMOSIA CALAVENSIS* Azaola. Fabaceæ.

"*Bahai*. The seed is claimed to be of medicinal value for certain cases of stomach ache. The tree is found at lower altitudes in the forest. Collected from a tree on the college farm."

47210. *PAHUDIA RHOMBOIDEA* (Blanco) Prain. Cæsalpiniaceæ.
(*Azelia rhomboidea* Vidal.)

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

47211. *PREMNA CUMINGIANA* Schauer. Verbenaceæ.

"*Maguilic*. Collected from the college farm."

47212. *QUERCUS BENNETTII* Miquel. Fagaceæ.

Oak.

"*Pangan*. Collected on Mount Maquilang at an altitude of about 1,000 feet."

47213. *CORDEAUXIA EDULIS* Hemsl. Cæsalpiniaceæ. **Yeheb nut.**

From Aden, Arabia. Presented by Mr. A. G. Watson, American vice consul. Received March 1, 1919.

The yeheb nut is the fruit of a bush or small tree found in the Somaliland Desert in Africa. The compound leaves comprise 6 to 8 ovate-oblong, coriaceous leaflets about 1 inch long. On the under surface of the leaflets are peltate glandular hairs, which yield a red secretion that stains the hand when one bruises the foliage. The small flowers are borne in terminal corymbs and are followed by the coriaceous, 1-seeded pods. The ovoid seeds, which are 1 to 2 inches long, are greatly valued by the natives for food. The seeds are stewed in water and are preferred by the poorer classes to their usual diet of dates and rice. (Adapted from *Kew Bulletin of Miscellaneous Information*, 1908, p. 36.)

The following analysis of the kernels gives a good idea of the food value of these nuts: "Moisture, 9.3 per cent; ash, 3.1 per cent; reducing sugar, 2.3 per cent; cane sugar, 21.6 per cent; carbohydrates (other than sugars), by difference, 37.1 per cent; albuminoid proteids, 11.8 per cent; amid proteids, 1.3 per cent; fiber, 2.7 per cent; oil, 10.8 per cent. Nutrient ratio, 1:6.5; nutrient value, 92.

"The nuts were tested for alkaloids and glucosids, but no indication of the presence of such constituents was obtained.

"The results of the analysis indicate that the nuts are likely to prove a useful foodstuff. A satisfactory point is the presence of considerable quantities of sugars and oil.

"Judging from the analytical figures alone, the nutrient ratio, i. e., the ratio of albuminoids to carbohydrates and oil converted into their starch equivalents, is a very serviceable one, and the total 'nutrient value' is high. The kernels are rather tough, and this point raises some doubt as to the complete digestibility of the carbohydrates other than sugars.

"In preparing the nuts for use as food it is desirable that they should be soaked in just such a quantity of water as they can absorb, since if more be used there is danger of the loss of the sugars, which would diffuse into the excess of water." (*Kew Bulletin of Miscellaneous Information*, 1908, p. 43.)

47214 to 47220.

From Southern Nigeria, Africa. Presented by Mr. A. H. Kirby, assistant director of agriculture at Ibadan. Received March 6, 1919.

47214. *ANNONA SENEGALENSIS* Pers. Annonaceæ.

"*Abo*. No European production in any way represents the *Annona senegalensis* with its large, blue-green leaf and its small fruit. The fruit contains an aromatic, dark-red pulp, and in a modest degree displays something of that captivating quality which has exalted its kindred plant, the cherimoya of Peru, to its high repute as the queen of fruits. It must be owned, however, that it is difficult to obtain a well-developed example of this fruit, for so keenly is it spied out and devoured by the birds that often for months together it may be sought in vain." (*Dr. George Schweinfurth, The Heart of Africa, p. 222.*)

For previous introduction, see S. P. I. No. 46630.

47215. *CRACCA VOGELII* (Hook. f.) Kuntze. Fabaceæ.
(*Tephrosia vogelii* Hook. f.)

"*Kassa*," "*Igun*," etc. For vernacular names, see the work by Holland cited below.

"Used for stupefying fish . . . throughout tropical Africa. The methods adopted are much the same everywhere. The leaves and branches are pounded and thrown on the surface of the water, causing the fish to rise to the surface stupefied or dead a few minutes afterwards. They [the fish] are quite wholesome and fit for food.

"The following passage [extract from Report on Gongga Country by Inspector Armitage] gives an account of the use of 'kassa' in the Gongga Country: 'A stretch of about half a mile of water is dammed and any alligators in it killed; the people from the neighboring villages assemble, each bringing a bundle of kassa leaves which are beaten to a pulp, taken to the prepared stretch of water, and thrown in. Men then enter the water and splash about, and in about 10 minutes fish begin to appear on the surface and are collected in baskets or by hand. The largest fish are taken in this way. The skin of the men who enter the water into which the kassa has been thrown is affected by the latter and becomes rough, or, as they say, like a stick.'" (*Holland, Useful Plants of Nigeria, pt. 2, p. 196.*)

47216. *SPATHODEA CAMPANULATA* Beauv. Bignoniaceæ.
"*Oruru*."

A strikingly handsome tree, 20 to 70 or more feet high, with smooth white stem without branches for a considerable height from the ground and a luxuriant conical head of foliage, all studded with large flowers of a bright orange scarlet. One of the most beautiful trees in Angola, flowering from September to the end of May and fruiting in June and July. Suitable for avenue or as a shade tree. Grown from seed which is winged, light, and freely distributed by the wind. (Adapted from *Holland, Useful Plants of Nigeria, pt. 3, p. 509.*)

47217. *STROPHANTHUS GRATUS* (Wall. and Hook.) Baill. Apocynaceæ.

A handsome flowering plant; it may be propagated by seeds which are distinguished from the *Strophanthus* seeds of commerce (*S.*

47214 to 47220—Continued.

kombe Oliv.) by being glabrous. The seeds of this species are recommended for use in medicine in preference to those of any other, chiefly because they yield crystalline strophanthin, whereas the established official *Strophanthus* yields this glucosid in an amorphous condition. Used for poisoning arrows. (Adapted from *Holland, Useful Plants of Nigeria, pt. 3, p. 447.*)

47218. STROPHANTHUS HISPIDUS A. DC. Apocynaceæ.

The seeds are an important drug, worth about 2 to 2½ shillings (48 to 60 cents) per pound wholesale, commonly shipped in the pods, but more often taken out, freed from the awns, and packed in bales. The seeds are poisonous, the active principle being strophanthin; used in Nigeria and generally in tropical Africa for arrow poison. It may be propagated by seed, but the commercial supply is obtained, so far, from wild plants, strong climbers making the seed difficult to collect, though, according to Dalziel, as a shrub with long lax branches it is capable of being grown in the neighborhood of towns and villages. The seed pods are available in October at Abepa, Kabba Province, where the plant is said to be plentiful. The seeds take several months to ripen. Billington reports collecting a pod in October, then not quite ripe, after noting its development for 10 months. (Adapted from *Holland, Useful Plants of Nigeria, pt. 3, p. 448.*)

47219. SYNSEPALUM DULCIFICUM (Schum.) Daniell. Sapotaceæ.

“*Agbayun.*”

This tropical African tree flowers in the months of June, July, and August, and usually produces a number of oblong or oval berries which resemble olives; they are dull green at first, but gradually change, as they ripen, into a dusky red. The seeds are inclosed in a thin, soft, slightly saccharine pulp which, when eaten, has the peculiar property of making the most sour and acidulous substances seem intensely sweet, so that citric or tartaric acids, lime juice, vinegar, and all sour immature fruits eaten thereafter taste as if they were composed solely of saccharine matter. The duration of this effect depends upon the amount of berries eaten, and the degree of maturity they have attained; when a sufficient quantity has been taken their influence is commonly perceptible throughout the day. This peculiar principle, however, is soon dissipated if the fruits are suffered to remain in a ripe condition for a length of time; preserved fruits brought to England not only lost this property but became extremely insipid. The natives of the Gold Coast often use them to render their stale and acidulated kankies [maize bread] more palatable and to give sweetness to sour palm wine and pitto [beer made from maize]. (Adapted from *Pharmaceutical Journal, vol. 11, p. 446.*)

47220. VITEX GRANDIFOLIA Guerke. Verbenaceæ.

“*Oricia.*” Near the River Num, *Vitex grandifolia* is a small tree with the habit of an *Aralia*, growing to a height of 25 feet. In Akwapim it is a shrub, 10 feet in height, with cream-colored flowers, found at an altitude of 1,000 feet. The fruit is edible, about the size of a small plum, and is made into a kind of honey. The wood is used for making large drums. (Adapted from *Holland, Useful Plants of Nigeria, pt. 3, p. 526.*)

47221 and 47222. BAROSMA CRENULATA (L.) Hook. Rutaceæ.
Buchu.

From Cape Town, South Africa. Presented by the Conservator of Forests.
 Received March 8, 1919.

A small evergreen shrub, with opposite or alternate, simple, dotted, leathery leaves, in the axils of which the flowers appear. The buchu leaves of commerce are procured chiefly from *Barosma crenulata*, *B. crenata*, and *B. serratifolia*. The leaves are much used in medicine as a stimulant and tonic and appear to have a specific effect in chronic diseases of the bladder, their action probably being dependent on the powerful-smelling volatile oil which they contain. (Adapted from *Lindley, Treasury of Botany, p. 125.*)

47221. Collected at French Hoek, Cape Province.

47222. Collected at Dluitjes Kraal, Ceres, Cape Province.

47223. KOKIA DRYNARIOIDES (Seem.) Lewton. Malvaceæ.

From Honolulu, Hawaiian Islands. Presented by Mr. J. F. Rock. Received March 10, 1919.

"From Pukoo, Japulehu, Molokai." (*Rock.*)

A tree, 4 to 8 meters high, woody throughout, with membranous, nearly glabrous, cordate, five to seven lobed leaves on long petioles, and bright red flowers, of silky texture, on stout peduncles, single in the axils of the uppermost leaves. The thick, woody, ovoid capsule, about an inch in length, contains several obovoid seeds which are covered with a reddish brown tomentum. Of this exceedingly interesting species there has been only one tree in existence up to a few months ago. This same tree, which was declared dead, still showed some signs of life and produced a few capsules with mature seeds; but this is evidently the last, only a small branchlet having produced a few leaves. A few seeds of this tree have been sent to Washington to the Bureau of Plant Industry [S. P. I. No. 39354]; thus it is hoped still to perpetuate this most interesting plant. Several trees were found on the west end of Molokai, at Mahana; all are now dead, owing to ravages of cattle, sheep, and goats, which eat off the bark and leaves. (Adapted from *Rock, The Indigenous Trees of the Hawaiian Islands, p. 307.*)

"Seeds from a seedling tree given to Mr. C. C. Conradt, of Pukoo, Molokai, in 1911. The tree has flowered and fruited this season for the first time; it bore five seeds—three of which I planted here, and two I have sent to you. The original tree on Molokai [parent of Mr. Conradt's tree] is dead." (*Letter of Mr. Rock, April 14, 1919.*)

47224. BARLERIA CRISTATA L. Acanthaceæ.

From Cairo, Egypt. Seeds presented by the director, Gizeh Branch, Ministry of Agriculture. Received March 11, 1919.

A tropical shrub, with axillary, or terminal, purplish blue or rarely white flowers in dense spikes. It is sometimes used as a bedding plant. (Adapted from *Bailey, Standard Cyclopedia of Horticulture, vol. 1, p. 454.*)

47225. CARICA sp. Papayaceæ. Papaya.

From the Cauca Valley, Colombia. Presented by Mr. M. T. Dawe, San Lorenzo, Colombia. Received March 13, 1919.

"Seeds of 'papaw' collected in the Cauca Valley, January, 1919." (*Dawe.*)

"These seeds seem to belong to the same species as S. P. I. No. 41339 from Peru, and Nos. 46761 and 46945 from Colombia. They closely resemble those of *Carica candamarcensis*, but are nearly twice as large." (*H. C. Skeels.*)

47226. AMORPHOPHALLUS KONJAC Koch. Araceæ.

From Japan. Tubers collected by Mr. Walter T. Swingle, Bureau of Plant Industry, United States Department of Agriculture. Received March 13, 1919.

"Tubers of *Konyaku*. Starch from the tubers is used for food in Japan. During the war the starch prepared from this plant was exported to the United States. It is said to be used in treating airplane wings. In Japan this plant is grown under the shade of orange trees, and as it seems to be important both for food and as industrial starch, I am anxious to see what it will do in this country." (*Swingle.*)

47227. PYRUS COMMUNIS L. Malaceæ.

Pear.

From Algiers, Algeria. Cuttings presented by Dr. L. Trabut. Received March 13, 1919.

"*Kontoula* pear from Achaia. Grafts of an early pear which bears abundantly a very sweet little fruit which is quite fragrant. This vigorous tree, which rapidly attains large dimensions, appears interesting to me.

"In 1914, the Botanical Station received from Greece some grafts of a pear whose fruits are much esteemed in Elis and Achaia because of their earliness; it bears the name of *Kontopodaroussa* or *Kontoula*, attains large dimensions, and is remarkable for its great and regular fruitfulness.

"Grafted upon *Pyrus gharbiana*, a species native to Algeria and Morocco, it made good growth in 1915. In June, 1918, the erect branches were covered with fruits.

"This pear is of small size, with a short peduncle, beautiful yellow, fine, sugary, fragrant flesh, not softening; it ripens in June, and is much superior to other early pears of the same date." (*Trabut.*)

47228. SILYBUM EBURNEUM Coss. and Dur. Asteraceæ.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received March 14, 1919.

"Thistle eaten when young by the natives." (*Trabut.*)

A form of blessed thistle (*Silybum marianum*), with the stems, nerves of the leaves, and bracts of the involucre an ivory white. It also differs from the typical form in having the spines on the tips of the involucre bracts very short or wanting. (Adapted from *Bulletin de la Société Botanique de France*, vol. 2, p. 366.)

47229. PHOENIX DACTYLIFERA L. Phœnicaceæ.

Date palm.

From Tripoli. Presented by Dr. E. O. Fenzi, director, Stabilimento Orticolo, Tripoli. Received March 15, 1919.

"*Tabuni*. Season, end of August to middle December. The commonest kind in the oases of Tripoli; fruit small to medium sized, olive shaped, with very thin skin, pulp fiberless and more sugary than *Bayudi* [S. P. I. No. 47302]." (*Fenzi.*)

47230 and 47231.

From Buitenzorg, Java. Presented by the director, Botanic Garden. Received March 17, 1919.

47230. *LANSIUM DOMESTICUM* Jack. Meliaceae. **Langsat.**

For previous introduction and description, see S. P. I. No. 47194.

47231. *NEPHELIUM LAPPACEUM* L. Sapindaceae. **Rambutan.**

Rambutan Atjeh Kouto.

For previous introduction and description of this species, see S. P. I. No. 47196.

47232 to 47260. *SOLANUM TUBEROSUM* L. Solanaceae. **Potato.**

From London, England. Tubers presented by Mr. Lawrence Weaver, Commercial Secretary, Board of Agriculture and Fisheries. Received March 19, 1919.

"A collection of the principal varieties of potatoes which have been approved as immune from the wart disease." (*Weaver.*)

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| 47232. <i>Abundance.</i> | 47247. <i>Lochar.</i> |
| 47233. <i>America.</i> | 47248. <i>Majestic.</i> |
| 47234. <i>Arran Comrade.</i> | 47249. <i>Nithsdale.</i> |
| 47235. <i>Arran Rose.</i> | 47250. <i>Provost.</i> |
| 47236. <i>Arran Victory.</i> | 47251. <i>Rector.</i> |
| 47237. <i>Bishop.</i> | 47252. <i>St. Malo Kidney.</i> |
| 47238. <i>Burnhouse Beauty.</i> | 47253. <i>Shamrock.</i> |
| 47239. <i>Dargill Early.</i> | 47254. <i>Snowdrop.</i> |
| 47240. <i>Edzell Blue.</i> | 47255. <i>Templar.</i> |
| 47241. <i>Golden Wonder.</i> | 47256. <i>The Ally.</i> |
| 47242. <i>Great Scot.</i> | 47257. <i>The Duchess.</i> |
| 47243. <i>Irish Queen.</i> | 47258. <i>Tymwald's Perfection.</i> |
| 47244. <i>Kerr's Pink.</i> | 47259. <i>White City.</i> |
| 47245. <i>King George.</i> | 47260. <i>Witch Hill.</i> |
| 47246. <i>Langworthy.</i> | |

47261. *PYRUS CALLERYANA* Decaisne. Malaceae. **Pear.**

From Nanking, China. Purchased through Mr. John H. Reisner, University of Nanking, at the request of Mr. W. T. Swingle, Bureau of Plant Industry. Received March 11, 1919.

Introduced for experiments being carried on to develop varieties of pears free from blight and also to be used for stock purposes.

47262. *OXALIS CRENATA* Jacq. Oxalidaceae.

From Seekonk, Mass. Tubers presented by Mr. William B. Olney. Received March 20, 1919.

"Tubers of the edible *Oxalis crenata blanc*, the bulbs of which I obtained from France a few years ago." (*Olney.*)

47263. DIOSCOREA ALATA L. Dioscoreaceæ.**Yam.**

From Gotha, Fla. Tubers presented by Mr. Henry Nehrling. Received March 22, 1919.

"One of a mixed lot of good varieties of yams received from the Trinidad Department of Agriculture in April, 1918, and recorded under S. P. I. No. 45990. This variety was sent to Mr. Nehrling for propagation." (*Young.*)

47264 to 47295.

From Poitiers, France. Plants purchased from Viaud-Bruant. Received March 22, 1919.

47264 to 47272. RIBES NIGRUM L. Grossulariaceæ.**Black currant.**47264. *À fruits blancs ou gris (Cassis).*47265. *À fruits noir.*47266. *À fruits noir feuilles panachees.*47267. *Blanche de Werders.*47268. *Bang up.*47269. *Victoria.*47270. *Champion.*47271. *Merveille de la Gironde.*47272. *Royal de Naples.***47273 to 47295. RIBES VULGARE Lam. Grossulariaceæ.****Garden currant.**47273. *À fruits blancs (Grossillers).*47274. *À fruits rouges.*47275. *Cerise à longue grappes, rouge.*47276. *Cerise Boisselot.*47277. *Cerise Goliath, rouge.*47278. *Cerise incomparable, rouge.*47279. *Cerise, rouge.*47280. *Comite.*47281. *De Holland, à longues grappes blanches.*47282. *De Holland, à longues grappes rouges.*47283. *Fertile d'Angers, rouge.*47284. *Grosse rouge de Boulogne.*47285. *Hâtive de Bertin rouge.*47286. *Imperial, à fruits blanches.*47287. *Kirsch, rouge.*47288. *Knight, rouge.*47289. *La Merveilleuse.*47290. *Marvin crystal blanc.*47291. *Ruby Castle, rouge.*47292. *Ruby Coster, rouge.*47293. *Sans Pepin, rouge.*47294. *Versaillaise blanche.*47295. *Versaillaise rouge.*

47296 to 47298. RUBUS STRIGOSUS × RUBRISSETUS. Rosaceæ.**Raspberry-dewberry.**

From College Station, Tex. Plants presented by Mr. H. Ness, horticulturist, Texas Agricultural Experiment Station. Received March 25, 1919.

A hybrid between *Rubus strigosus* (the Brilliant), a red raspberry, as the staminate parent, and *Rubus rubrisetus*, a dewberry, as the pistillate parent. The fruit is dark red to nearly black, and the flavor is mildly acid with a strong reminder of the raspberry—very superior to the blackberry. The drupelets adhere more to the core than in the raspberry. (Adapted from the *Journal of Heredity*, vol. 9, p. 338.)

47296. No. 1.

47298. No. 3.

47297. No. 2.

47299 and 47300. BERBERIS spp. Berberidaceæ. Barberry.

From Wisley, Ripley, Surrey, England. Plants presented by Mr. Fred J. Chittenden, director, the Royal Horticultural Society's Gardens. Received March 26, 1919.

47299. BERBERIS POLYANTHA Hemsl.

A deciduous shrub, 6 to 10 feet high, with simple or three-pronged thorns, obovate leaves, mostly rounded at the apex, and yellow flowers which are produced during June and July in drooping panicles carrying 20 to more than 50 blossoms. The fruit is red. This is a very fine species, remarkable for the large and abundant flower panicles. (Adapted from *Bean, Trees and Shrubs Hardy in the British Isles*, vol. 1, p. 246.)

47300. BERBERIS RUBROSTILLA Hort.

"An elegant and beautiful seedling barberry of unrecorded parentage, but probably a hybrid between *Berberis wilsonae* and *B. concinna*. It has the growth of the latter, but has large pendent fruits of a rich coral-red color. A very pretty and useful addition to our fruiting shrubs." (*Gardeners' Magazine*, vol. 59, p. 449.)

47301. PYRUS USSURIENSIS Maxim. Malaceæ. Pear.

From Talent, Oreg. Cuttings presented by Prof. F. C. Reimer, director, Oregon Agricultural Experiment Substation. Received March 21, 1919.

These cuttings were taken from trees grown from S. P. I. No. 21880, collected by Mr. Meyer near Shinglungshan, Chihli, China.

"Seeds of a wild pear which grows here and there in big groves and sometimes assumes a large size, 60 to 80 feet tall, with trunks 2 to 3 feet in diameter. May be utilized as grafting stock in northern regions." (*F. N. Meyer*.)

47302 and 47303. PHOENIX DACTYLIFERA L. Phœnicaceæ.**Date palm.**

From Tripoli. Presented by Dr. E. O. Fenzi, director, Stabilimento Orticolo Libico, Tripoli. Received March 22, 1919. Quoted notes by Dr. Fenzi.

47302. "*Bayudi*. Ripening as early as August. Fruit large, cylindrical; pulp rather sweet but somewhat fibrous."

47303. "*Bronsi*. One of the latest varieties, hardly ripening before October. Fruits large to very large, of bright crimson color, turning to shining black at maturity; pulp of extra good quality."

47304 to 47308. *ELAEIS GUINEENSIS* Jacq. Phœnicaceæ. **Oil palm.**

From Buitenzorg, Java. Presented by Dr. P. J. S. Cramer, chief, Plant-Breeding Station. Received March 24, 1919. Quoted notes by Dr. Cramer.

"The oil palms I introduced here commenced to fruit when I had not yet my own garden in Sumatra at my disposition. I have planted in several Government rubber estates, where no other oil palms are in the neighborhood, plats of 5 to 10 palms, each plat descending from one seed bearer."

47304. "Variety *Bonga*. 423 K. W."

47305. "No. 1. Variety *Nsombo* C. 424 A. IV."

47306. "No. 1. Variety *Buinde* C. 426. M. III."

47307. "No. 1. Variety *Nsombo* B. (Gellet.) 102 K. W."

47308. "No. 3. Variety *Nsombo* B. (Gellet.) 102 K. W."

47309. *ILEX PARAGUARIENSIS* St. Hil. Aquifoliaceæ. **Yerba maté.**

From Asuncion, Paraguay. Presented by Mr. C. F. Mead, Porto Murtinho, Matto Grosso, Brazil. Received March 28, 1919.

"This seed has been in Asuncion for two years and it may be past its germinating stage. In this case, if it will not serve, I can probably get you a supply of the yerba of Brazil, which, as far as plant and seed are concerned, is of the same class, though the same can not be said of the prepared yerba." (*Mead.*)

For previous introduction, see S. P. I. No. 46891.

47310. *SOLANUM SCALARE* C. Wright. Solanaceæ.

From Cairo, Egypt. Presented by Mr. F. S. Walsingham, Gizeh Branch, Ministry of Agriculture. Received March 29, 1919.

A shrubby solanum found along streams on the west coast of Africa from Sierra Leone to Pungo Andongo. The stem, the leaves, and the outside of the flowers are covered with stellate pubescence. The ovate-oblong leaves have undulate margins and the white or violet flowers, half an inch across, are borne in racemose clusters of about ten. The fruits are smooth, shining red, globose berries, about half an inch in diameter. (Adapted from *Thiselton-Dyer, Flora of Tropical Africa, vol. 4, sec. 2, p. 224.*)

47311 to 47314. *DATURA* spp. Solanaceæ.

From Ecuador. Collected by Dr. J. N. Rose, associate curator, U. S. National Herbarium, Washington, D. C. Numbered in March, 1919. Quoted notes by Dr. Rose.

47311. *DATURA* sp.

"(No. 23553. Seeds obtained in the American Legation at Quito.) A shrub, 10 feet high, with large orange-colored flowers. This plant is cultivated in parks at Quito and is very attractive."

47312. *DATURA* sp.

"(No. 22828. Collected at Cuenca. September, 1918.) A bush, 8 to 10 feet high, with rather small red flowers which are 5 or 6 inches long; the calyx and corolla lobes have long, acuminate tips."

47311 to 47314—Continued.**47313.** DATURA sp.

“(No. 22792. Collected at Azogues, Ecuador, altitude about 8,000 feet.) Bush, 6 to 8 feet high, covered with large, white, pendent flowers 12 inches long. It is called *Floripondio*.”

47314. DATURA sp.

“(No. 22965. Collected south of Cuenca.) Flowers of a saffron-yellow; corolla lobes five, acuminate reflexed; calyx 3-lobed, green, acuminate; flowers smaller and the throat broader and the calyx lobes more attenuate than in the red-flowered species.”

47315. DIALIUM DIVARICATUM Vahl. Cæsalpiniaceæ.

From Bolivar, Colombia. Fruits collected by Mr. H. M. Curran at Tierras de Loba. Numbered March, 1919.

Otu. Wood used for general construction requiring strength; bark is used for medicinal purposes. Native to northern States of Brazil. (Adapted from *Correa, Flora do Brazil, p. 41.*)

A tree with alternate, pinnately 3-foliolate leaves, the leaflets being ovate and about 2 inches long. The flowers are borne in erect terminal panicles and are followed by smooth, brown, pear-shaped fruits the size of a hazelnut. The seeds are surrounded by an edible pulp much resembling that of the tamarind, to which this tree is closely related. (Adapted from *Vahl, Enumeratio Plantarum, vol. 1, p. 303.*)

47316 and 47317. ZEA MAYS L. Poaceæ. **Corn.**

From Zamboanga, Philippine Islands. Presented by Mr. P. J. Wester, agricultural adviser. Received March 29, 1919.

“Two varieties. Corn maturing in 75 days from planting, obtained from Cotabato, which may be of value for breeders because of their earliness.” (*Wester.*)

47316. “*Gading*.” **47317.** “*Lamuck*.”

47318 and 47319.

From San Jose, Costa Rica. Seed presented by Mr. F. Ruin. Received March 31, 1919.

47318. ANNONA CHERIMOLA Mill. Annonaceæ. **Cherimoya.**

A variety sent in without description. A subtropical tree, native to the Andes of Peru, which produces fruits of exquisite flavor.

For previous introduction and description of other forms, see S. P. I. Nos. 43485 and 45020.

47319. CYPHOMANDRA sp. Solanaceæ. **Tree-tomato.**

An undescribed species which has a “delicious fragrance, and is used for preserves.”

47320. CHENOPodium AMBROSIoidES L. Chenopodiaceæ.**Wormseed.**

From Santiago, Chile. Presented by Sr. S. Izquierdo, Santa Ines Nursery. Received March 31, 1919.

A perennial herb, native to tropical South America, from which is obtained a very active anthelmintic frequently employed as a remedy for lumbricoid worms.

For previous introduction and further description, see S. P. I. Nos. 46296 and 46309.

47321. TRIFOLIUM AFRICANUM GLABELLUM HARV. Fabaceæ.

Clover.

From Cedara, Natal, Union of South Africa. Presented by Mr. John Fisher, acting principal, School of Agriculture. Received March 28, 1919.

An indigenous Natal clover found growing in vleis on the Cedara farm. Roots of this plant were dug up from the vlei and transplanted into the manured soils of the variety plats. They grew very vigorously, producing a thick sward and having to be cut back to prevent their smothering other clover in adjacent plats. This type dies down in the winter; it remains green, however, up to the end of June. It springs up again with the early rains and soon produces flower heads which are not unlike red-clover blossoms but larger. The plat lasted three years and then began to deteriorate. This type should receive special study and attention, as it is certainly better suited to the local conditions than any of the others which have been tried. (Adapted from *Sawyer, Cedara Memoirs on South African Agriculture, vol. 2, p. 163.*)

47322. CEROXYLON ANDICOLA Humb. and Bonpl. Phœnicicææ.

Wax palm.

From Bogota, Colombia. Presented by Sr. Jorge Ancizar. Received March 28, 1919:

"*Palma de cera* or *wax palm* of Colombia. Not to be confused with the carnauba wax palm of Brazil (*Copernicia cerifera*). The wax palm of Colombia is found in the high valleys of the Andes of that country at altitudes between 5,000 and 8,000 feet. The tree reaches a height of 125 feet and over, with a diameter up to 2 feet. The surface of the trunk is covered with a coating of a whitish wax, which gives it a curious marblelike appearance. As much as 25 pounds has been obtained from a single tree, and it is used by the natives for candle making. It has also been exported to Europe and, after being purified, is said to be suitable as a substitute for carnauba wax for many purposes. The leaves are feather shaped, dark green above, whitish below, and of a peculiar clothlike texture. The fruits are reddish, about the size of cherries, and appear in large bunches." (*C. B. Doyle.*)

47323. DIOSPYROS KAKI L. f. Diospyraceæ.

Kaki.

A tree growing at the Plant Introduction Field Station, Chico, Calif.; purchased in 1911 from the P. J. Berckmans Co., Augusta, Ga. Numbered for convenience in distribution.

"*Miyo tan.* This variety bears staminate blooms in the greatest profusion, but produces very few pistillate flowers, and for all practical purposes may be called a male variety. I believe it will prove an excellent tree to interplant in persimmon orchards, especially in the Southeastern States, where the investigations of Prof. H. H. Hume have shown a pollinator to be required for the setting of a good crop of fruit." (*Peter Bisset.*)

47324 to 47328.

From Los Banos, Laguna, Philippine Islands. Collected by D. W. H. Weston, College of Agriculture. Received March 31, 1919. Quoted notes by Dr. Weston.

47324. *COIX LACRYMA-JOBI* L. Poaceæ. **Job's-tears.**

"Seed of the wild *Coix lacryma-jobi* which grows along the creek here. There is nothing unusual about it."

47325 and 47326. *COIX LACRYMA-JOBI* MA-YUEN (Rom.) Stapf. Poaceæ. **Ma-yuen.**

"Seed of the *ma-yuen* which has been grown at the college here. The bulk seed was grown at the college for the first time from seed from Tangkulan, Bukidnon, Mindanao, where it was collected by Mr. P. J. Wester. Since the college-grown seed was over half a mile from any wild *Coix*, it is probably pure. It is a very interesting variety, tall, up to 7 feet, a heavy bearer, with green fruit turning a ruddy color, and finally to a grayish buff, or pale gray. Although the people here do not recognize it as different from the common hard-shelled Job's-tears and call it by the same names—tigbee and adlay—it has a soft exocarp, and is used for food in the islands of Mindanao and Palawan, and in the mountains back of Manila in Rizal Province."

47325. "Collected originally by Mr. P. J. Wester, November, 1918, Kalasungay, Bukidnon, Mindanao."

47326. "Grown at the College of Agriculture, Tangkulan, Bukidnon, Mindanao."

47327 and 47328. *ZEA MAYS* L. Poaceæ. **Corn.**

47327. "'*Manobo sweet*.' These ears are from the original source of those we grew here, namely, the Cotabato region of Mindanao; and are consequently more pure than those grown here. It is a dwarf variety, maturing at about 3 to 4 feet, and is extremely early, requiring only about 72 days for complete maturity. The name 'Manobo sweet' is misleading, since the Manobos are a wild tribe of that island and probably do not cultivate this maize particularly; and, furthermore, it is by no means a sweet type."

47328. "*Cotabato*." A corn of similar appearance to the "Manobo," but with white kernels rather than yellow. No notes other than the name under which it came are available concerning this variety.

47329. *POLAKOWSKIA TACACO* Pittier. Cucurbitaceæ. **Tacaco.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé. Received December 10, 1918. Numbered March, 1919.

"The tacaco has a hard skin when ripe, and keeps in perfect condition for weeks before it shrivels. The fruits preferred for planting are those which fall off the vine when dead ripe, but fruits shriveled from long keeping will also grow. If planted in the soil, they do not sprout; it is best to bury them in rotting leaves, but they will grow if placed on the ground with a layer of leaves over them." (*Wercklé*.)

For previous introduction, see S. P. I. No. 41141.

For an illustration of this fruit, with the flowers, see Plate IV.

**47330 to 47348. CASTANEA DENTATA (Marsh.) Borkh. Fagaceæ.
Chestnut.**

From New York. Scions collected by Dr. Walter Van Fleet. Received March 29, 1919.

"The material consists of grafting wood collected from trees that show evidence of resistance to infections of *Endothia parasitica* which has existed for nearly 20 years and has nearly destroyed all of the very abundant stands of chestnuts about the city of New York except three scattered groups. These were discovered during the past summer by Dr. A. H. Graves, New Haven, Conn., and the trees were numbered by him from 1 to 142. These groups are so disposed that it is conceivable that they may each be descended from a naturally resistant ancestor in each locality. Numbers 1 to 48 are situated in Innwood and Van Cortlandt Parks, at the north end of Manhattan Island, Nos. 49 to 76 near Hollis, Long Island, and Nos. 77 to 153 near Valley Stream, Long Island, all within a few miles of New York City. Material was collected only from the most promising trees in each locality." (*Van Fleet.*)

47330. No. 46. From Van Cortlandt Park, Manhattan Island.

From Hollis, Long Island:

47331. No. 57.	47335. No. 73.
47332. No. 58.	47336. No. 75.
47333. No. 60.	47337. No. 78.
47334. No. 68.	47338. No. 86.

47339. Precocious tree. From Hollis, Long Island.

From Valley Stream, Long Island:

47340. No. 90.	47345. No. 107.
47341. No. 93.	47346. No. 111.
47342. No. 96.	47347. No. 112.
47343. No. 103.	47348. No. 137.
47344. No. 106.	

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