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New Plant Introductions  
For Experimenters

Ninth Annual List  
1920-1921

DESCRIPTIONS OF THE MORE IMPORTANT NEWLY IMPORTED SEEDS AND PLANTS WHICH APPEARED AVAILABLE FOR DISTRIBUTION AT THE VARIOUS FIELD STATIONS WHEN THE LIST WAS PREPARED. IT IS IMPOSSIBLE TO FORESEE THEN WHAT PLANTS WILL BE ACTUALLY AVAILABLE FOR DISTRIBUTION, BECAUSE THE QUARANTINE INSPECTION TAKES PLACE AT THE TIME OF DIGGING, AND CERTAIN SPECIES MAY HAVE TO BE WITHDRAWN AT THAT TIME.

*SPECIAL NOTICE.* Plants are allotted as requests are received. Experimenters who wish to test any of these seeds or plants should apply at once, as shipping arrangements are now being made.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION  
BUREAU OF PLANT INDUSTRY  
UNITED STATES DEPARTMENT OF AGRICULTURE.

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OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION  
WASHINGTON, D. C.

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## NEW PLANT INTRODUCTIONS

1920-1921.

### Introductory Note.

This Catalogue describes many species or varieties of newly introduced foreign plants, most of which have not been grown in this country. Our knowledge of them is consequently very limited and we cannot predict their behavior with the certainty possible with standard seeds and plants.

These newly introduced plants have been imported for trial because of some direct or indirect use which it is believed can be made of them by Americans. They are introduced primarily for use by experts of the United States Department of Agriculture and the State experiment stations of the country, but many of them will be available to such private experimenters as have the necessary facilities and desire to test them. Since these plants must be grown by private individuals before their commercial value is determined, private experimenters who test them are assisting in a very practical way in the plant introduction work of the country.

A new plant industry often arises through the success of some private individual in demonstrating the adaptability of an introduced plant to the soil and climatic conditions of a region.

The plants imported by the United States Department of Agriculture through this Office are in most cases so little known to experimenters that their scientific or even their common names alone would convey little idea of their character. To distribute them under a name simply, depending upon the experimenter to look them up in a catalogue, entails a burden upon the investigator which often results, at the end of the year, in his being ignorant of the uses of the new plant. To enable the experimenter at any time to refresh his memory as to the use of any one of these introductions, special labels have been devised upon which is printed a condensed description of the plant. These descriptive labels are attached to the plants when they are sent out. The information on these labels consists of: the Seed and Plant Introduction (S.P.I.) number, under which the plants are known at all times; the scientific name; a common name (when one has been adopted for this country); a brief description of the plant with its uses; and, where possible, a suggestion of the general region to which the plant is likely to be adapted.

In some instances few or no plants of the S. P. I. number given with the description may be available for distribution, but in such instances plants of the same species and variety under another introduction number may be substituted.

Accompanying this catalogue is a complete check list of all plants ready for distribution during the season 1920-1921. This list includes not only those plants descriptions of which appear in the body of this catalogue, but also a large number of plants which are not so described,- either because only a few plants are now available for distribution, or because the data available regarding them are too meagre to warrant publication.

Requests for material in this catalogue should be made by checking the desired plants in the accompanying check list; and, returning the list *promptly* to the Office of Foreign Seed and Plant Introduction after filling out the blanks on the front page. It will aid this Office in its distribution work if each experimenter will fill out all blanks, check the list carefully, and make no other notes or requests on the check list itself. Requests for plants not on the check list, or notes on plants received heretofore should be made in a separate letter.

The number of plants available for distribution under many of the numbers listed is very small; and, therefore, it will be impossible to fill all requests.

All seeds and plants imported by this Office are examined upon arrival by the Federal Horticultural Board; and the plants grown from these original importations are further inspected before being sent out. Every effort is being made to insure the distribution of only such seeds and plants as are perfectly healthy and do not harbor any injurious plant diseases or insect pests.

DAVID FAIRCHILD,  
*Agricultural Explorer in Charge.*

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,  
*Washington, D. C., November 30, 1920.*

## DESCRIPTIVE LIST.

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39984. *ABIES SACHALINENSIS*. Fir. From Japan. Received through the Arnold Arboretum. A fine ornamental tree, conical in outline, 100-125 feet in height, with a cylindrical or slightly tapering trunk  $2\frac{1}{2}$ - $3\frac{1}{2}$  feet in diameter. The bark is grayish, the foliage bright green. The wood is of fair quality and is used locally for building and out-of-door carpentry.

49582. *ACACIA* SP. From Kafue, N. Rhodesia. Collected by Dr. H. L. Shantz, Agricultural Explorer. An acacia having very delicate papery pods.

48035. *ACACIA ARMATA*. From J. Goffart, Tangier, Morocco. A simple-leaved, prickly acacia of shrubby growth, with graceful branches leafy to the tip. Heads of yellow flowers are borne on axillary peduncles longer than the phyllodia. Much used for hedges; also valued as a sand binder on coasts where it forms an impenetrable barrier of prickly vegetation. Native to southern Australia.

48038. *ACACIA CALAMIFOLIA*. From J. Goffart, Tangier, Morocco. A tall shrub or small tree, native to Australia, with slender erect branches. Phyllodia filiform, compressed, drooping, and compact; flowers yellow, erect, on a short stalk. An attractive ornamental, especially when in full bloom; said also to be an excellent tan bark tree.

48039. *ACACIA CULTRIFORMIS*. From J. Goffart, Tangier, Morocco. A tall bushy Australian shrub with leathery, triangular leaves (phyllodia); the yellow flowers occur in globular heads in numerous racemes much longer than the leaves. If kept well pruned, forms an excellent hedge. Cultivated in the open in California, where it is considered a valuable ornamental.

48040. *ACACIA CYANOPHYLLA*. From J. Goffart, Tangier, Morocco. A handsome western Australian shrub, up to 18 feet in height, with drooping branches and glabrous lanceolate phyllodia. The numerous, large, golden yellow flower-heads are in groups of three to five in short racemes.

48401. *ACACIA CYCLOPS*. From J. Goffart, Tangier, Morocco. An Australian shrub, 6 to 10 feet in height. The flowers occur in dense globular heads. Young specimens are very compact and attractive, but with age they become unsymmetrical.

48043. *ACACIA EXTENSA*. From J. Goffart, Tangier, Morocco. A graceful western Australian shrub with smooth four-angled branches and very long, pointed phyllodia. The erect racemes, 6 to 8 inches long, have numerous scythe-shaped phyllodia between the yellow flower heads.

48044. ACACIA FALCATA. From J. Goffart, Tangier, Morocco. A small Australian tree, 20 to 30 feet in height, bearing few slender branches and small yellow flowers in dainty spherical clusters on racemes borne in the axils of the dark, glossy green, falcate leaves. Wood hard, heavy, and tough; much prized for stock-whip handles and for bending for coach-building.

48045. ACACIA HOMALOPHYLLA. From J. Goffart, Tangier, Morocco. A small tree, native to New South Wales and Victoria. Grows in bleak arid situations where frost is not too severe. The foliage is much used for fodder. The hard heavy wood is valued for turners' work, for cabinet-making, for the manufacture of tobacco pipes, rulers, napkin rings, etc.

48048. ACACIA LINIFOLIA. From J. Goffart, Tangier, Morocco. An Australian shrub or small tree 12 to 18 feet in height. Plants of this species are very ornamental, with delicate branches and foliage. Leaves the same length as the spikes of globular heads of sweet-scented yellow flowers. The wood is tough, close grained, soft, and elastic, and is suitable for axe handles, etc.

48049. ACACIA LONGIFOLIA. From J. Goffart, Tangier, Morocco. A small evergreen Australian tree, with branching, ashy brown trunk. The axillary flower stalks, shorter than the phyllodia, are entirely covered with sessile, citron-yellow flowers. Trees of this species are valued as ornamentals. The bark is used for tanning light leathers. The wood is light, tough, and durable, and is valued for tool handles. The tree is often used as a sand binder.

48050. ACACIA MACRADENIA. From J. Goffart, Tangier, Morocco. A small, glabrous, Australian tree growing, in favorable situations, to 50 feet in height. The phyllodia are lanceolate, leathery, 6 to 8 inches long. The flowers occur in globular heads arranged like bunches of grapes. The dark, close-grained wood is capable of taking a high polish.

48051. ACACIA MELANOXYLON. From J. Goffart, Tangier, Morocco. An Australian hardwood tree attaining a height of 100 feet, though of slow growth. The yellow flowers occur in dense globular heads. The phyllodia are lanceolate, evergreen, leathery, 3 to 4 inches long. The dark-colored wood is an excellent substitute for black walnut in furniture-making and grill work. It is much valued for the making of boats, bridges, carriages, tool handles, etc.

48052. ACACIA MICROBOTRYA. From J. Goffart, Tangier, Morocco. A tall Australian shrub which produces an edible gum. A single tree is said to produce as much as 50 pounds in a season. The gum has a pleasant sweetish taste. The shrub grows best along river and creek valleys.

48055. ACACIA NERIIFOLIA. From J. Goffart, Tangier, Morocco. A handsome tree native to eastern Australia, 40 to 50 feet in height. Branchlets slender, mealy tomentose when young. The small globular flower heads occur in simple slender racemes shorter than the linear phyllodia. The wood is prettily marked, close grained, and tough.

48058. ACACIA PYCNANTHA. From J. Goffart, Tangier, Morocco. Golden Wattle. A small, rapid-growing tree with leathery phyllodia and bearing masses of fragrant bright-yellow flowers. The tree yields a valuable tan bark. From the bark a gum is exuded that is useful in cotton printing; perfume is made from the flowers, and an infusion for preserving ropes, etc., is prepared from the bark. The wood is valued for barrel staves, tool handles, etc.

48060. ACACIA RICEANA. From J. Goffart, Tangier, Morocco. A Tasmanian shrub, 3 to 4 feet in height, with elongated and gracefully drooping branches. The leaves are dark green, awl-shaped, and covered with minute dots. The flowers are pale citron-colored, on yellow peduncles in fluffy globular heads.

42821. ACER BUERGERIANUM. Maple. From China. Collected by John H. Reisner. A small deciduous tree with 3-lobed leaves,  $1\frac{1}{2}$  to  $3\frac{1}{2}$  inches long, shiny dark green above, somewhat paler and dull beneath. Flowers small, in downy umbellike clusters. Native to China and Japan. Probably hardy throughout most of the United States.

42683. ACTINIDIA CALLOSA HENRYI. From central China. Received through Vilmorin-Andrieux & Co, Paris, France. An ornamental climbing plant with fragrant white flowers and persistent, leathery leaves of a bronze-red color passing into a metallic green and changing in autumn to a beautiful reddish color.

47623. ACTINIDIA KOLOMIKTA. From China. A large-growing, deciduous, ornamental climbing woody vine with rather coarse, leathery, deep-green leaves tinted with red. The flowers are white,  $\frac{1}{2}$  to  $\frac{5}{8}$  inches in diameter, with purple stamens, followed by edible fruits the size of a gooseberry or small plum with a gooseberrylike flavor. The vine is suitable for growing on screens, trellises, etc.

40532. ACTINIDIA POLYGAMA. Silver Fir. From Chosen. Presented by D. F. Higgins, Peking, China. A climbing shrub, native to China, Chosen, and Japan, where it reaches a height of 25 feet. The young foliage is of a beautiful, silvery white color. The white flowers occur in clusters in the axils of the leaves.

48232. ALBIZZIA SP. From Victoria Falls, Rhodesia. Presented by Mr. J. Burtt-Davy. A deciduous ornamental with graceful feathery foliage and attractive axillary flower clusters.

44095. ALEURITES FORDII. Tung-oil, or Wood-oil Tree. From China. A deciduous, broad-leaved, spreading tree up to 30 feet in height. Clusters of large pinkish-white flowers precede the leaves in the spring. The fruits, about the size of those of the black walnut, contain 3 to 8 large seeds which yield 24 per cent of valuable drying oil. Adapted to sandy clay soils of the South Atlantic and Gulf States, and California. Seeds not edible; violently purgative.

46664. ALLIUM CEPA. Onion. From China. Seeds presented by Rev. G. D. Schlosser, Honan, China.

45811. AMARANTHUS PANICULATUS. From Mexico. Received through W. E. Chapman. An annual with entire leaves; bears an abundance of grainlike seeds in dense panicles which are much used by the Mexicans in the making of sweetmeats. The seeds are roasted, mixed with syrup, rolled into balls and eaten like sugared popcorn. They are also popped and used as a breakfast food.

X 30408. AMYGDALUS COMMUNIS. Jordan Almond. From Granada, Spain. An important commercial variety of almond of fine quality. Nuts annually imported from Spain in large quantities and used extensively in the manufacture of the best grades of confectionery. This variety may be grown in very dry situations and is, properly speaking, a dry-land crop of very great importance.

33217. AMYGDALUS COMMUNIS. De la P. Almond. From Spain. A large, early, hard-shelled variety of almond recommended by Pedro Geraud, nurseryman of Granada, who points out that almonds give best results on warm, rocky, limestone soils. For trial in California and Arizona.

27336. AMYGDALUS FENZLIANA. From F. N. Meyer, Agricultural Explorer, Tiflis, Caucasus. A shrubby, ornamental almond, producing attractive white flowers in early spring. Recommended for testing as stock for almonds and other stone fruits in mild-wintered regions of this country; also for breeding experiments to obtain a dwarf drought-resistant strain of almonds for similar climatic conditions.

34601. AMYGDALUS MIRA. Wild Chinese Peach. From E. H. Wilson, of Arnold Arboretum. Thirty-foot tree, discovered north of Tachienlu, China, at an altitude of 9,000 feet. Fruit 1 inch in diameter; fuzzy, with smooth stone; edible. Shows tendency to bloom late in the spring; may prove useful for breeding purposes or as stock. Apparently hardy in Massachusetts.

33219. AMYGDALUS PERSICA. Vainqueur Peach. From Granada, Spain. A medium-sized, very early-ripening peach with white

skin flushed with red. The flesh is soft, white, and juicy; pit pink. This variety is not a good shipper, but has proved an excellent peach for home use.

X 38178. AMYGDALUS PERSICA. Fei Peach. From F. N. Meyer, Agricultural Explorer, Feitcheng, China. Grafts of the famous Fei peach on *A. davidiana*. Fruits clingstone, sometimes weighing a pound each. The skin is a pale yellow with a slight blush on one side. The flesh is white, pink around the stone, very sweet, juicy, and aromatic. Possesses remarkable keeping and shipping qualities. It is considered the best of the Chinese peaches and should have a thorough trial in this country. It would appear to be an excellent canning peach. X

X 40721. AMYGDALUS PERSICA. Peach. From China. Collected by F. N. Meyer, Agricultural Explorer. A medium-sized clingstone peach with slightly pinkish-tinged yellow skin, firm white flesh tinged with red near the stone; very aromatic, sweet, and juicy. Ripens early. X

41395. AMYGDALUS PERSICA. Dwarf Peach. From China. Presented by Geo. Campbell. A Chinese ornamental grown in pots as a house plant. One tree, 15 inches high with stem no larger than a lead pencil, bore five full-sized, white-fleshed clingstone peaches crowded on the main trunk. The blossoms are showy and the prettily colored fruits hang on the trees for a long time.

X 43124. AMYGDALUS PERSICA. Peach. Var. A 1. From New Zealand. Presented by H. R. Wright. Said to be an ideal market peach. The tree bears heavily each year. The growth is short, thick, and compact, with very large handsome foliage. X

X 43129. AMYGDALUS PERSICA. Peach. Var. Late Champion. From New Zealand. Presented by H. R. Wright. This is said to be one of the largest peaches grown. It yields heavy and regular crops every year. X

X 43130. AMYGDALUS PERSICA. Peach. Var. Lippiatt's Late Red. From New Zealand. Presented by H. R. Wright. Said to be an excellent peach of creamy mottled color, striped and over-spread with dark red.

X 43132. AMYGDALUS PERSICA. Peach. Var. Motion's Cling. From New Zealand. Presented by H. R. Wright. A large clingstone peach resembling the Stark in appearance. Said to be an ideal market variety; has a rich color and is a prolific yielder. X

X 43133. AMYGDALUS PERSICA. Peach. Var. Muir's Perfection. From New Zealand. Presented by H. R. Wright. An excellent midseason peach of large size, beautiful color, and delicious flavor. X

Flesh white, freestone. For home and commercial use.

43134. AMYGDALUS PERSICA. Peach. Var. Osprey Improved. From New Zealand. Presented by H. R. Wright. Said to be an excellent peach for home use. Of good size and quality, but too soft and lacking in color for the market. A very dependable yielder.

43135. AMYGDALUS PERSICA. Peach. Var. Paragon. From New Zealand. Presented by H. R. Wright. A yellow-fleshed clingstone peach said to be a good yielder from year to year. This variety is considered of unusual merit in New Zealand.

43136. AMYGDALUS PERSICA. Peach. Var. Shipper Cling. From New Zealand. Presented by H. R. Wright. A very large clingstone peach of attractive appearance. The skin is orange-yellow with a red cheek. This variety is considered excellent for canning as it remains intact when preserved. The flavor is said to be excellent.

43137. AMYGDALUS PERSICA. Peach. Var. Up-to-date. From New Zealand. Presented by H. R. Wright. This is said to be a vigorous-growing, heavy-bearing variety producing large freestone, yellow-fleshed fruits, suitable for canning and home use. Fruits are too tender for long shipments.

34685. AMYGDALUS PERSICA NECTARINA. Quetta Nectarine. From Quetta, British India. Presented by Lieut. W. L. Maxwell. A spreading, vigorous tree bearing immense quantities of large green fruits tinged with red. This is pronounced by experts to be an exceptionally fine variety and worthy of wide dissemination because of its large size and good color, notwithstanding the thin skin. Budded on *A. davidiana*.

43139. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Ansenne. From New Zealand. Presented by H. R. Wright. The fruit of this variety is of the largest size, and very light color. The flesh is tender, melting, and of delicious flavor. The tree is extremely hardy and a regular yielder.

43140. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Diamond Jubilee. From New Zealand. Presented by H. R. Wright. A very large nectarine of excellent flavor. The skin is red; the flesh greenish white and melting. The tree begins yielding very early and fruits prolifically.

43141. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Gold Mine. From New Zealand. Presented by H. R. Wright. The fruit is of unusually large size, and is a perfect freestone; the pit is extremely small for so large a fruit. The flesh is a beautiful cream color, melting, juicy, sugary, and of delicious flavor. Color bright bronze-red. A heavy yielder.

X 43142. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Lippiatt's Red Orange. From New Zealand. Presented by H. R. Wright. X

43143. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Muir's Seedling. From New Zealand. Presented by H.R. Wright. Fruit is of large size, with cream-colored, sweet, juicy, tender flesh. The color is bronze-red. Said to be a heavy yielder.

X 43144. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. New Boy. From New Zealand. Presented by H. R. Wright. The brilliant-crimson fruit is of large size with white, sweet, juicy flesh of exquisite flavor. The tree is very hardy and prolific. X

43146. AMYGDALUS PERSICA NECTARINA. Nectarine. Var. Sure-keep. From New Zealand. Presented by H. R. Wright. This variety is said to be a very regular yielder. The fruits are of large size and are said to be of good quality.

X 47318. ANNONA CHERIMOLA. Cherimoya. From San Jose, Costa Rica. Presented by F. Ruin. A subtropical tree native to the Andes of Peru. Produces fruits of exquisite flavor. X

46781. ANNONA DIVERSIFOLIA. From Guatemala. Collected by Wilson Popenoe, Agricultural Explorer. A small tropical tree which produces pale green, heart-shaped, thick-skinned fruits with rose-tinted, juicy flesh of delicious flavor.

47871. ANNONA MURICATA. Soursop. From Bogota, Colombia. Presented by M. T. Dawe. A small tropical evergreen tree which bears ovoid or heart-shaped, edible fruits 6 to 8 inches in diameter and weighing up to 5 pounds. The fleshy, pleasantly acid pulp is excellent for table use and for jellies and preserves. Care must be taken to remove the skin in preparing the fruit for table use.

X 47875. ANNONA SQUAMOSA. Sugar-apple. From Bogota, Colombia. Presented by W. O. Wolcott. The fruits are of the size of apples and suggest pine cones in general appearance. When fully ripe the fruit is soft and the carpels separate readily exposing the snow-white, delicately flavored pulp. May be eaten out of hand and resembles the cherimoya in flavor but is less acid. One of the most important fruits of the Tropics. It is particularly adapted to dry regions but will withstand only a few degrees of frost. X

46704. ANTIDESMA BUNIUS. From the Philippine Islands. Presented by the Director of the College of Agriculture, Los Banos, Laguna. A small, handsome tropical tree with dark, evergreen leaves of bitter flavor. Fruits, about the size of a pea produced in long racemes, are dark red in color, ripening to black. They are of a sweet, subacid flavor and are used in Java for preserving; may also be eaten raw.

26565. ARALIA CORDATA. Udo. From Japan. A vegetable worthy of wide cultivation for its edible shoots which are blanched in spring by mounding with earth or by covering with a closed drain tile. The plants are set 3 or 4 feet apart and grow quite bushy. They may yield shoots for nine years or more. Shoots may be peeled, sliced into ice water, and served with French dressing, or may be stewed and served like asparagus.

49291. ARISTOLOCHIA SP. From Africa. Collected by H. L. Shantz, Agricultural Explorer. An ornamental vine used by the natives as a covering for fences and hedges.

42791. ARTEMISIA CINA. Wormseed. From the Jardin Botanique, Tiflis, Caucasus, Russia. A low, straggly undershrub common in the deserts of Turkestan. From the leaves and unexpanded flowerheads is prepared the drug santonin, which is used as an anthelmintic.

47833. ARTOCARPUS LAKOOCHA. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A large evergreen tree with leathery ovate leaves up to 10 inches in length, and bearing irregular, roundish, edible fruits. From the bark is prepared a cordage fiber; the root yields a yellow dye, and the hard yellow heartwood is used in making furniture.

48234. BAIKIAEA PLURIJUGA. From Victoria Falls, Rhodesia. Seeds presented by J. Burt-Davy. A central African tree 40 to 60 feet in height. Branches pubescent; leaves compound, glabrous, shining; flowers yellow, in long silky racemes; wood much valued for construction work, sleepers, etc.

44240. BAMBOS TULDA. Bamboo. From Dehra Dun, India. Presented by R. S. Hole, Forest Botanist, Research Institute and College. An evergreen or deciduous tree bamboo, common in Bengal, with green or gray-green culms 20 to 70 feet high and 2 to 4 inches in diameter and having branches from nearly all the nodes. This bamboo is said to furnish the so-called "Calcutta cane," used for the finest quality of split bamboo fishing rods.

49005. BARLERIA CRISTATA. From Egypt. Seeds presented by the Director, Horticultural Section, Gizeh Branch, Ministry of Agriculture. A small elegant bush found throughout India; has showy, blue, funnel-shaped flowers; often grown in gardens and useful as a hedge plant.

49022. BARLERIA STRIGOSA. From Egypt. Seeds presented by the Director, Horticultural Section, Gizeh Branch, Ministry of Agriculture. An unarmed shrub, 2 to 4 feet in height, with large ovate leaves and dense, almost globose spikes of blue flowers. A very showy garden plant.

48238. BERLINIA SP. From Victoria Falls, Rhodesia. Seeds presented by J. Burt-Davy. A small, unarmed, leguminous tree with abruptly pinnate leaves and white or whitish flowers in terminal clusters.

46840. BETULA SP. From Jamaica Plain, Mass. Presented by C. S. Sargent. An unidentified birch.

47837. BOEHMERIA PLATYPHYLLA. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A large shrub or small tree with opposite, broadly ovate leaves, native to the Khasia hills, eastern Bengal, and southern India. The wood is moderately hard and of a reddish-brown color. All the species of this genus are said to yield good fibers.

48025. BOMBAX MALABARICUM. Red Silk-Cotton Tree. From Siam. Presented by A. Robertson-Proschowsky, Nice, France. A beautiful semitropical, red-flowered, deciduous shade tree, which may attain a height of 160 feet or more and a girth of 8 feet. The trunk and branches are thorny. Surrounding the seed in the pods is a yellowish cotton almost as fine and glossy as silk. The bark furnishes a good fiber for cordage.

45263. BRASSICA SP. Mustard. Collected by F. N. Meyer, Agricultural Explorer. Said to have come from the north of China where mustard is a summer crop.

38783. BRASSICA NAPIFORMIS. Tuberous-rooted Chinese mustard. From China. Collected by F. N. Meyer, Agricultural Explorer. A biennial with thin bluish foliage and tuberous roots which reach a diameter of 3 or 4 inches. In China the tubers are used as a winter vegetable.

BRASSICA PEKINENSIS. Pai ts'ai, or Chinese cabbage. A cabbage with long cylindrical heads. NOT SUITABLE FOR SPRING PLANTING. When sown early this variety runs to seed without heading. Sow in seed beds late in July; transplant to rich moist soil, spacing 15 inches apart in rows 2 to 3 feet apart, or the seed may be sown in the open ground. Plant a few seeds in rows where the plants are to grow and when the seedlings are large enough thin to one plant. Harvest after the first light frost. Leave roots on; pull off outer leaves, and store in a cellar under layers of straw, or out of doors with a heavy covering of soil.

46479. BRASSICA RUGOSA. Rai, or Indian Mustard. From India. Presented by H. G. Carter, Economic Botanist. A tall erect annual, 3 to 5 feet in height, with bright green foliage. This species is widely cultivated in India both for its leaves, which are used as a vegetable, and also for its seed from which is manufactured a mustard oil used as food by the natives. Of all kinds of oil mustard oil is most largely

consumed and most relished by the people.

49460. CAESALPINIA SP. From Rhodesia, South Africa. Seeds collected by H. L. Shantz, Agricultural Explorer. A small tree, not over 10 feet in height, bearing large pods, the beans of which are eaten after four successive boilings. After each boiling the water is changed. It is said that the beans are deadly poisonous if eaten after one boiling.

43495. CAJAN INDICUM. Pigeon-pea. From India. Presented by F. J. Warth. A shrubby plant, 4-10 feet high, grown for the nutritious peas which it yields. The peas also are a valuable poultry feed. Horses and cattle are very fond of the young branches and leaves either in a fresh or dried state. Though a perennial the vine is usually cultivated as an annual.

47550. CALLITRIS CUPRESSIFORMIS. From Tasmania. Received from L. A. Evans, Hobart, Tasmania. A slow-growing tree, reaching a height of 100 feet and a diameter of about  $2\frac{1}{2}$  feet. The whitish unfigured wood is hard, close grained and very durable. It is extensively used for piles, telegraph poles, etc.

46313. CANNA EDULIS. Edible Canna. From Hawaii. Presented by the Agricultural Experiment Station, Honolulu. A vigorous-growing herbaceous perennial widely cultivated in warm regions for the starch which is obtained from the edible tubers. The quality of this starch is said to be as good as that of the West Indian arrowroot.

45665. CAPSICUM ANNUUM. Pimento. From Mexico. Presented by C. A. Purpus. Variety Grossum. The pimento of tropical America is adapted to a warm climate and should be planted only in a sunny place in light soils. The pepper is pungent and is highly valued as a condiment.

48016. CARAGANA AMBIGUA. From Baluchistan. Seeds presented by Vilmorin-Andrieux & Co., Paris, France. A subshrubby, leguminous plant, growing at altitudes of 5,000 to 9,000 feet. Bears large conspicuous flowers said to be eaten by the natives.

36069. CARICA CANDAMARCENSIS. Mountain Papaya. From Ceylon. Presented by H. F. Macmillan, Superintendent, Royal Botanic Garden. A tree smaller than *Carica papaya*, bearing smaller, more angular fruits of too acid a flavor for dessert, though very agreeable when stewed; also used for jams and preserves. The ripe fruit has a pleasant applelike odor. Introduced for tests of papain content and also for hybridization experiments.

45246. CARICA PAPAYA. Papaya. From Honolulu, Hawaii. Presented by Gerrit P. Wilder. This variety was introduced for papaya selection work, and for studies in papain content.

47565. CASIMIROA EDULIS. White Sapote. A productive, large-fruited variety which originated at the Plant Introduction

Field station, Miami, Florida. The fruits are oval to round, yellow-green, and 3 to 4 inches in length. The flesh is cream-colored, smooth, and sweet, with a trace of bitterness.

45552. CASSIA SP. From Guatemala. Collected by Wilson Popenoe, Agricultural Explorer. A leguminous shrub from the mountains of northern Baja Verapaz.

48082. CASSIA TORA. From Belgian Kongo. Presented by Father Hyacinthe Vanderyst. An erect yellow-flowered annual 2 to 3 feet in height, widely distributed throughout the Tropics. From the seed is prepared a yellow dye suitable for tasar silk. The dye is also combined with indigo to form a green shade. The seeds are roasted and used as a substitute for coffee. The stalks and tender leaves are used for food; the roots as a remedy for ulcers and ringworm.

46883. CASUARINA STRICTA. From Australia. Presented by B. Harrison, Burringbar, New South Wales. An ornamental tree much planted in southern Florida as a shade and avenue tree. It is known locally as "Australian Pine." The timber is handsome, strong, and durable and is used for veneers, cabinet work, barrel staves, and shingles. Not hardy.

24714. CATHA EDULIS. Khat. From T. Gerolimato, Harrar, Abyssinia. A small tree reaching a height of 15 feet. The culture of Khat is an important industry in Arabia. The leaves are chewed by the Arabs for the stimulating effect of the alkaloid contained in the leaves.

46062. CELTIS SINENSIS. From Honan Province, China. Collected by G. D. Schlosser. A tree growing to a height of 30 feet, with broadly ovate leaves, 2 to 4 inches long, and dull orange-red edible fruits borne on stout pedicels.

48663. CELTIS TALA. From Montevideo, Uruguay. Seeds presented by Luis Guillot. A tree with a short, branched trunk. The wood is yellowish white and smooth; used for posts and firewood.

48027. CENTAUREA RAGUSINA. From Nice, France. Seeds presented by A. Robertson-Proschowsky. A round bush with lyrate-pinnatifid leaves and yellow flowers, native to Crete and Dalmatia. Grows best in a vertical position on rocks and walls.

40017. CEPHALOTAXUS DRUPACEA SINENSIS. From China. Collected by F. N. Meyer, Agricultural Explorer. An evergreen conifer growing into a tall shrub or rarely a small gnarled tree, especially beautiful when young. This shrub withstands much shade and thrives on rocky lands. Of value as an ornamental in mild-wintered regions of the United States.

26562. CHAENOMELES LAGENARIA CATHAYENSIS. Quince. From China. Presented by J. M. W. Farnham. A shrub or small tree, the very

large fruits of which are prized for their strong, pleasant aroma. They are used in China in perfuming rooms and also for preserves. The leaves turn a rich scarlet in autumn.

46632. CHENOPODIUM NUTTALLIAE. From Mexico. Presented by Mrs. Zelia Nuttall. An herbaceous Mexican plant the immature seeds of which are considered a nutritious food. Bunches of the inflorescence are tied together and boiled in salted water, after which the seeds are scraped off and made into croquettes, which are fried in batter; also made into a kind of omelet.

21617. CHIONANTHUS RETUSA. Chinese Fringe Tree. Collected by F. N. Meyer, Agricultural Explorer. One of the most attractive of hardy, deciduous shrubs; somewhat resembles the American fringe tree (*C. virginica*), but has shorter and broader erect panicles, and flowers on the young shoots of the preceding year. Flowers are snow-white; the corolla having four strap-shaped petals 3 to 4 inches long. Bears in fall masses of blue berries which look like wild grapes.

23028. CITRUS LIMONIA. Lemon. From China. Collected by F. N. Meyer, Agricultural Explorer. An ornamental lemon cultivated by the Chinese as a decorative plant. Small pot plants are frequently observed with a dozen or more large lemons on their branches. The fruits can be used in the same way as those of the ordinary variety. The plant can be successfully propagated from cuttings.

49400. COCCOSIPSILUM REPENS. From Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. An interesting herbaceous plant found on moist slopes. It creeps along the ground making stems about 3 feet in length, and producing pale blue flowers about  $\frac{1}{2}$  inch broad, followed by bright blue fruits  $\frac{1}{2}$  inch in diameter and very ornamental.

15395. COLOCASIA ESCULENTA. Trinidad Dasheen. From Trinidad, West Indies. A valuable root crop for the South. Related to the elephant-ear. Produces large corms and tubers. Used like potatoes, but is richer in protein and starch, and possesses a nutty flavor. Leaves ACRID; can be cooked as greens after parboiling with a little baking soda.

47206. CORDIA BLANCOI. From the Philippine Islands. Presented by E. B. Copeland. A small tree with soft, light wood which is used for posts and light construction. The bast fiber is used by the natives for making rope.

44589. CORNUS CAPITATA. From Italy. Presented by A. Preda, Director, Botanic Garden, University of Siena. An almost evergreen dogwood, native to the Himalayas and China. Grows to a height of 30 to 40 feet and bears leathery ovate-lanceolate leaves 2 to 5 inches long, and minute flowers crowded in

hemispherical masses about  $\frac{1}{2}$  inch in width, with showy, cream-white or sulphur-yellow bracts up to 2 inches long. It bears a fleshy, strawberrylike fruit more than 1 inch wide. The fruits and bracts are very ornamental.

22472. *CORYLUS AVELLANA*. Filbert, D'Alger. From Mrs. Felix Gillet, Nevada City, Calif. Tree of the Barcelona type, bearing somewhat smaller nuts of similar flavor, but said to outbear the better known variety. Has been grown successfully in Washington state. First introduced by Felix Gillet from the Mediterranean region.

22473. *CORYLUS AVELLANA*. Filbert. A French variety, Geante des Halles, from Felix Gillet of Nevada City, Calif.

46407. *COTONEASTER* SP. From China. Collected by F. N. Meyer, Agricultural Explorer.

43990. *COTONEASTER DIELSIANA*. From China. Presented by the Arnold Arboretum. An ornamental shrub, up to 6 feet in height, having slender spreading and arching branches, and deciduous oval leaves  $\frac{3}{4}$  inch long with yellowish-gray lower surface. Bears few, short-stemmed, pinkish flowers followed by red fruits  $\frac{3}{4}$  inch in diameter.

43991. *COTONEASTER DIVARICATA*. From China. Presented by the Arnold Arboretum. A deciduous upright shrub with shining oval leaves  $\frac{1}{3}$  to  $\frac{3}{4}$  inch long, and pink flowers, usually in threes. A very handsome shrub when studded with its bright red fruits  $\frac{1}{3}$  inch long.

45705. *COTONEASTER FRANCHETI*. From China. Received through the Arnold Arboretum. An ornamental upright shrub with dense spreading branches. Leaves elliptic to ovate; yellowish white tomentose beneath. Flowers small, pinkish, in short dense corymbs. The fruits are ovoid, orange-red, over  $\frac{1}{3}$  inch long, and usually contain three seeds.

43992. *COTONEASTER HORIZONTALIS PERPUSILLA*. From China. Received through the Arnold Arboretum. A low Chinese shrub of prostrate habit with almost horizontal branches in two dense series. Leaves roundish-oval less than  $\frac{1}{3}$  inch long. Flowers erect, pink, and either solitary or in pairs. Oval fruits bright red,  $\frac{1}{4}$  inch in diameter. A very effective fruiting shrub for rockeries.

43993. *COTONEASTER NITENS*. From China. Received through the Arnold Arboretum. A shrub up to  $4\frac{1}{2}$  feet high, with deciduous, shining green leaves. Flowers solitary or in pairs, followed by black fruits  $\frac{1}{6}$  inch long, containing two stones.

48507. *CRATAEGUS MEXICANA*. White thorn. From Mexico. Seeds presented by S. Furnival. A small bushy tree, 8 to 10 feet in

height, indigenous to the mountainous regions of Mexico and Guatemala. The fruit, about the size of the American crab apple, is insipid in the raw state, but is valuable for making jelly. The tree said is to be used as a stock for apples and pears.

43051. CRINUM SP. From El Banco, Bolivar, Colombia. Collected by H. M. Curran. An ornamental low plant bearing fragrant white flowers.

44786. CRYPTOSTEGIA GRANDIFLORA. Palay Rubber. From the Bahama Islands. Presented by W. F. Doty, American Consul. A twining shrub, native to India, but cultivated in the Tropics for the rubber obtained from the sap. It has opposite elliptical leaves and bears terminal cymes of large purple flowers which bloom all the year. The leaves and stem contain an abundance of latex from which rubber is made. From the bast fiber of the inner bark a good quality of wrapping paper has been made.

41690. CUPRESSUS GLABRA. Cypress. From Sedona, Ariz. Received through J. F. Derrick. A tree 25 to 30 feet in height, with a compact, narrowly oval, somewhat pyramidal crown. The branches, particularly of the younger trees, are strongly upright. The bark is thin, smooth, dark purple-red; the trunk tapering, sometimes divided into several branches. Foliage bright blue-green.

32882. CYDONIA OBLONGA. Quince. From Pedro Giraud, Granada, Spain. Var. Antequera. Oblong variety, smooth and well formed, with fine, mellow flesh; considered the best of all cultivated quinces. Spanish quinces are famous for their high quality and the best are said to come from Antequera.

47969. CYPHOMANDRA SP. Tree-tomato. From Paraguay. Seeds presented by Dr. Moises S. Bertoni. The fruit of this plant is said to be edible.

45578. DAHLIA COCCINEA. From Guatemala. Collected by Wilson Popenoe, Agricultural Explorer. A species native to Guatemala, which will probably be of interest to dahlia breeders. Grows to a height of 4 feet and bears a profusion of flowers 2 to 3 inches broad with 8 ray florets orange-brown to crimson.

49757. DAHLIA MAXONII. From Guatemala. Collected by Wilson Popenoe, Agricultural Explorer. This species occurs abundantly both wild and cultivated in many parts of the Guatemalan highlands. The stems sometimes reach a height of 15 to 18 feet and are quite woody at the base. The flowers face outward and upward. In the wild state the flowers are single and lilac-pink. In cultivation the flowers are variable in color and double flowers occur.

45559. DELPHINIUM CARDINALE X (?). Hybrid Larkspur. From Berkeley, Calif. Presented by E. B. Babcock, University of California. A cross between a red-flowered species and a garden hybrid with deep blue flowers.

45726. DODONAEA VISCOSA. From Cairo, Egypt. Presented by F. G. Walsingham. A very interesting hedge plant which is beautifully dense and green, responds to the shears perfectly, and, when taken in hand early, forms a compact wall clear to the ground. Suitable for hedges in California and Florida.

49859. DORYANTHES PALMERI. From Melbourne, Victoria. Presented by F. H. Baker. A gigantic showy amyrrillidaceous plant with very numerous ribbed leaves 6 to 8 feet long and 4 to 6 inches wide. The stem, 8 to 10 feet high, bears a compact inflorescence, 3 feet long, of short few-flowered spikes.

36757. DUCHESNEA FILIPENDULA. Collected by F. N. Meyer, Agricultural Explorer. A wild plant closely related to the strawberry. The fruit is fairly large, carmine-red, slightly elongated, and is said to be of delicious flavor. Of possible value in hybridization experiments.

47999. ERYNGIUM FOETIDUM. From Cuba. Presented by Mario Calvino. An umbelliferous plant widely distributed in tropical America. Because of its peculiar odor the plant is used as a condiment in the West Indies; also used medicinally.

48083. EUGENIA SP. Presented by P. D. Barnhart, Sawtelle, Calif. A South American species especially valuable for ornamental planting in Florida and California. The evergreen leaves are small and glossy; the young leaves and twigs are a beautiful red. Adapted for hedge plantings and as trained specimens for tubs. Responds well to shearing.

48223. EUGENIA AQUEA. From Egypt. Presented by Alfred Bircher, of the Middle Egypt Botanic Station. A medium-sized tree, native to the Moluccas and Ceylon. Has smooth evergreen foliage and large white flowers, followed by rose-colored or white, aromatic, edible fruits about the size of a loquat.

47988. EUGENIA SUPRA-AXILLARIS. From Egypt. Presented by Alfred Bircher, Middle-Egypt Botanic Station. An ornamental, glossy-leaved, evergreen shrub native to Brazil; bears clusters of 3 to 10 white flowers. The black globose fruits are about the size of small cherries and somewhat resemble juniper berries in flavor.

40581. EUONYMUS RADICANS ACUTUS. From China. Presented by Vicary Gibbs, Elstree, Herfs, England. A procumbent shrub with climbing branches; grown chiefly for its attractive foliage; has ornamental scarlet fruits in the fall.

48639. FICUS CARICA. Kurdistan Fig. From Persia. Seeds presented by E. C. M. Richards, Forester, New York City. From seeds collected by native Persians.

44133. FRAXINUS SP. Imodon Ash. From Chinese Turkestan. Received through Geo. MacCartney. A tall-growing timber tree which is able to withstand considerable drought and alkali. Of probable value as a shade and timber tree in mild-wintered parts of the United States where the summers are hot and dry.

47687. FRAXINUS FLORIBUNDA. Nepal Ash. From Darjiling, India. Presented by G. H. Cave, Director, Lloyd Botanic Garden. A handsome Himalayan tree up to 120 feet in height. Valued as an avenue tree and for its timber which is said to be much sought after for oars, plows, etc. The flowers are white, in large terminal panicles. This species much resembles large-leaved forms of the Manna Ash, *F. ornus*.

50152. GAZANIA SP. From Burttholm, Vereeniging, Transvaal. Seeds presented by J. Burttholm-Davy. A beautiful yellow-flowered ornamental.

44433. GOURLIEA DECORTICANS SUBTROPICALIS. From Argentina. Presented by S. W. Damon. A tall tree with crooked tapering trunk about  $4\frac{1}{2}$  feet in diameter, and soft wood which is not used commercially. This variety differs from the typical species in the tapering trunk and in the manner in which the bark peels off.

44858. GUAIACUM GUATEMALENSIS. From Zacapa, Guatemala. Collected by F. S. Johnson. A small spreading tree up to 30 feet in height, which thrives in a warm climate with little rainfall. Covered in spring with a mass of lavender-purple flowers. The very hard wood is valued in cabinet-making.

47512. GYNURA SARMENTOSA. From Zamboanga, P. I. Presented by P. J. Wester. A very attractive composite climber, with narrow, green, purple-ribbed leaves. Should prove a valuable ornamental in the West Indies and Florida.

44103. HELIANTHUS ANGUSTIFOLIUS. Sunflower. A selected variety of the native wild form of sunflower collected by David Griffiths in Arkansas. A perennial plant of pleasing habit, with flowers somewhat resembling yellow cosmos, and narrow, drooping, glossy foliage. The main stem and branches are long and graceful, each bearing 6 or more flowers on long arching flower stalks.

34615. HIBISCUS MUTABILIS. Japanese Rose Hibiscus. Presented by Gustav Eisen, Rome, Italy. A large shrub or small tree growing to a height of about 10 feet; bears great numbers of beautiful, rose-colored, single flowers 6 inches in diameter.

49134. HIBISCUS SYRIACUS. Rose of Sharon. Var. Caeruleus. From Rochester, N. Y. Presented by John Dunbar, Assistant Superintendent of Parks. A hardy ornamental shrub producing freely in late summer purplish-blue flowers.

47559. HYMENAEA COURBARIL. From Venezuela. Presented by J. G. Meyer, American Vice consul. A handsome tree with curious compound leaves consisting of two leaflets. Surrounding the seeds in the pods is an edible substance resembling licorice in taste. The tree furnishes South American copal - a gum which exudes from wounds in the bark. This gum is used in the manufacture of varnish.

43849. HYPERICUM PATULUM HENRYI. From China. Presented by the Arnold Arboretum. An evergreen, spreading, Chinese shrub  $1\frac{1}{2}$  to 3 feet high, with smooth, purplish, two-edged branches, oval, obtuse leaves, and yellow flowers 2 to  $2\frac{1}{2}$  inches wide.

24638. ILEX CORNUTA. Holly. From China. Presented by J. M. W. Farnham, of Shanghai. A very ornamental, half-hardy shrub or small evergreen tree, with spiny, dark-green, glossy leaves, and in winter loaded with scarlet berries.

43760. ILEX PARAGUARIENSIS. Yerba maté. From Matania El Saff, Egypt. Presented by Alfred Bircher, Middle-Egypt Botanic Station. A small evergreen tree which withstands a temperature as low as  $14^{\circ}$  F. The leaves and young twigs are used in preference to tea by millions of South Americans. They contain a stimulating alkaloid and a much less harmful oil than tea. Brazil, alone, in one year exported more than ten million dollars worth of maté made by scorching, drying, and powdering the leaves and young twigs.

42522. INODES NEGLECTA. From Azua, Santo Domingo. Received through J. N. Rose, U. S. National Museum. A tree about 20 feet high, with large, fanlike leaves and large, more or less drooping flower clusters. This palm would doubtless prove valuable for introduction into the warmer parts of this country.

47578. JUBAEA CHILENSIS. Palm. Grown at the Plant Introduction Field Station, Miami, Florida. A very ornamental tree, but a slow grower; the source of the palm-honey of Chile. Thrives on dry, poor soils and requires very little water. The sap, from which a very excellent syrup is made, is obtained in Chile by felling the trees.

48014. JUGLANS CATHAYENSIS. From China. Seeds presented by John Dunbar, Assistant Superintendent of Parks, Rochester, N. Y. The so-called Chinese butternut which is abundant throughout Hupeh and Szechwan, China. Usually a bush, but in moist woods it forms a tree up to 50 feet in height. The bark is smooth and pale gray; the leaves are sometimes more than two feet long. Hardy at the Arnold Arboretum.

18256. JUGLANS REGIA. Walnut. From China. Collected by F. N. Meyer, Agricultural Explorer. A strain of the English or Persian walnut which has been erroneously called Manchurian Walnut because it is found near the Great Wall of China. Preliminary tests indicate that it is hardier than strains from southern Europe and northwestern Asia, and can possibly be utilized farther north. X

23023. JUNIPERUS SP. From China. Collected by F. N. Meyer, Agricultural Explorer. A dwarf juniper with foliage of a deep bluish color. Chinese name Tsui bai.

18577. JUNIPERUS CHINENSIS. Chinese Juniper. Var. Columnaris. Collected by F. N. Meyer, Agricultural Explorer. A handsome ornamental juniper narrowly cylindrical in shape; of erect habit of growth, somewhat like that of the Chinese Juniper but taller; and with dense glaucous or silvery green foliage. The needles are stiffer and longer than those of the Irish Juniper.

27505. JUNIPERUS PROCERA. Cedar. From East Africa. A tall conifer often 100 feet high with a straight trunk which yields a durable and valuable timber similar to a that used in lead pencils. Found in the highlands of British East Africa.

42860. LAWSONIA INERMIS. Henna Plant. From Colombia. Presented by H. M. Curran. A rapid-growing, ornamental, evergreen shrub, 6 feet high, with glaucous leaves and small yellowish flowers produced in large, showy panicles. The flowers exhale a strong fragrance, especially at night, and contain a volatile oil used in perfumery. A dye is made from the leaves and young branches. Recommended for hedges.

42822. LIQUIDAMBAR FORMOSANA. From China. Received through J. H. Reisner. Ornamental tree up to 120 feet in height, resembling the sweet gum, *L. styraciflua*, to which it is closely allied. It has, however, smaller leaves which are usually only three-lobed. The Chinese are said to use the timber for making tea-chests. Native to southeastern and central China.

46808. LOBELIA ERINUS MICRODON. From Johannesburg, Transvaal. Seeds presented by J. Burt-Davy. An ornamental plant, entirely different in habit from the ordinary garden form, being erect instead of diffuse. The fragrant flowers are beautiful shades of blue and white.

47918. MACADAMIA TERNIFOLIA. Macadamia. From Sydney, Australia. A small, evergreen, nut and timber tree 40 to 60 feet in height. The very hard-shelled, edible nuts are produced in about 7 years from the seed. These nuts are nutritious, with a rich agreeable flavor resembling that of the hazelnut, though stronger. The timber is reddish, fine-grained, and takes a good polish; used in cabinet work, for veneers, shingles, etc.

40207. MALUS KAIDO. From Stockholm, Sweden. Presented by Veit Wittrock, Director, Botanic Garden. Perhaps a hybrid between *M. spectabilis* and *M. ringo*, but with larger, more deeply colored flowers than the former. A useful and showy plant bearing a profusion of bright red flowers with red calyces and pedicels and holding its many small fruits sometimes all winter.

27153. MALUS SYLVESTRIS. Apple. From the Caucasus, Russia. Collected by F. N. Meyer, Agricultural Explorer. A large, green apple with white, fine-grained flesh; rather tough; not juicy. The flavor is good; slightly subacid. Form oblate, with deep depressions both at the blossom and stem end.

30326. MALUS SYLVESTRIS. Apple. From Chinese Turkestan. Collected by F. N. Meyer, Agricultural Explorer. A large variety of the so-called Muz-alma apple. A medium-sized, yellowish-green apple of glassy texture and sweet taste. Has good keeping qualities. The tree is said to withstand considerable drought and alkali; introduced for trial in the Southwest.

31653. MALUS SYLVESTRIS. Apple. Var. Wainwright. From W. J. Newberry, Curator, Botanic Gardens, Maritzburg, Natal. A good subtropical apple.

39829. MALUS SYLVESTRIS. Apple. Var. Limoncello. From Rome, Italy. Presented by Gustav Eisen. A lemon-yellow apple with crisp, white, juicy flesh having a flavor suggestive of Cabernet grapes. Said to be the best variety grown in Italy for the general market. It is not to be preferred to the best apples of the northern states, but is reported to be superior to any grown in the central and southern plains of California. Especially adapted to warm dry climates.

43153. MALUS SYLVESTRIS. Apple. Var. Cliff's Seedling. From New Zealand. Received from H. R. Wright. A medium to large, highly colored fruit with yellow, crisp, juicy flesh of good flavor.

43154. MALUS SYLVESTRIS. Apple. Var. Climax. From New Zealand. Received from H. R. Wright. An excellent dessert apple.

43155. MALUS SYLVESTRIS. Apple. Var. Coldstream Guards. From New Zealand. Received from H. R. Wright. A medium to large dessert apple; smooth, round, bright colored, and very attractive in appearance. The tree is said to be a heavy yielder.

43156. MALUS SYLVESTRIS. Apple. Var. Cole's Blushing Bride. From New Zealand. Presented by H. R. Wright. An excellent dessert apple of handsome appearance; somewhat conical in shape. Said to be blight-resistant and a heavy yielder.

43157. MALUS SYLVESTRIS. Apple. Var. Diadem. From New Zealand. Presented by H. R. Wright. A dessert and cooking apple.

43158. MALUS SYLVESTRIS. Apple. Var. Edward Lippiatt. From New Zealand. Presented by H. R. Wright. The fruit is large, roundish, with yellow skin streaked with crimson. The flesh is white, crisp, juicy, sweet, and of a very rich flavor.
39338. MANIHOT DICHOTOMA. Manicoba. From Bahia, Brazil. Presented by V. A. Argollo Ferrao. A tree, native to the mountainous regions in the eastern part of the province of Bahia. The tree is under cultivation as a source for Ceara rubber.
47906. MANIHOT ESCULENTA. Cassava. From Port-of-Spain. Trinidad, B. W. I. Presented by W. G. Freeman, Acting Director of Agriculture. An herbaceous shrub widely cultivated in warm regions for its starchy, fleshy roots, which are used in preparing a commercial starch, and for stock feed.
47819. MAOUTIA PUYA. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A shrub, native to the tropical Himalayas and distributed throughout the Straits Settlements and Japan. The bark yields a fiber which is much used for fishing nets, game bags, etc. Leaves serrated, dark green, with silvery lower surface.
42463. MARANTA ARUNDINACEA. From Jamaica. Presented by W. Harris, Superintendent, Hope Gardens. Herbaceous plants with fleshy tubers from which the true West Indian arrowroot starch of commerce is obtained.
49164. MARKHAMIA SP. From Victoria Falls, Rhodesia. Seeds collected by H. L. Shantz, Agricultural Explorer. A small tree with long pods which bear winged seeds.
49408. MIMOSA CERATONIA. From Porto Rico. Presented by T. B. McClelland. A vigorous-growing, climbing, ornamental shrub covering trees with its branches; produces loose racemes of beautiful white flowers in globose clusters.
47734. MIMOSA RUBICAULIS. From Darjiling, India. Presented by G. H. Cave, Director, Lloyd Botanic Garden. A large, straggling, prickly shrub found throughout the greater part of India and ascending to 5,000 feet in the western Himalayas. Said to be a valuable hedge plant. The leaves, pods, seeds, and roots are used medicinally by the natives.
48680. MIMOSA URUGUENSIS. From Uruguay. Seeds presented by Luis Guillot. A very pretty semi-hardy shrub suitable as a greenhouse ornamental. The plant has delicate, light green, feathery leaves and heads of dark pink flowers.
48468. MIMUSOPS SP. From Johannesburg, Transvaal. Presented by J. Burtt-Davy. A tropical tree with milky juice. The thick, shiny leaves are simple and entire.

46386. MORINGA OLEIFERA. Horse-radish tree. From Nicaragua. Presented by the American Legation. A very attractive, ornamental tree, 15 to 20 feet high, with pinnately compound leaves of pleasing light-green color, and masses of slightly fragrant white flowers in axillary panicles 6 to 8 inches long. The slender triangular seed pods are often a foot long. Considered an antidote for manchineel poisoning. Native to India; established in the West Indies and Mexico.

30330. MORUS NIGRA. Black Mulberry. From Chinese Turkestan. Collected by F. N. Meyer, Agricultural Explorer. The berries are large, of dark violet color, and of fresh subacid flavor, ripening from early August to September. Recommended as a home fruit in desert regions under irrigation.

12569. OLEA EUROPAEA. Olive. Var. Barouni de Sousse. From Susa, Tunis, Africa. Received through T. H. Kearney. The largest fruited olive of the Tunisian region. Its culture is confined exclusively to Sahel and Kalaa Srira. One of the best of the green table olives. Fruits nearly oval, 1 1/8 by 7/8 inches.

47262. OXALIS CRENATA. From France. Presented by Wm. B. Olney, Seekonk, Mass. A perennial Oxalis, but cultivated as an annual for its fleshy tubers which are used for food. The stems are fleshy, reddish, and bear numerous leaves. The tubers are swollen, elongated, obovoid. The skin is very smooth and is yellowish white.

46609. OXALIS TUBEROSA. Oca. From Ecuador. Collected by J. N. Rose, Associate Curator, U. S. National Herbarium. The plant is related to the common wood sorrel. The tuberous roots form an important article of food in Peru and Bolivia; attains a height of 1 to 2 feet.

48253. PAHUDIA QUANZENSIS. From Victoria Falls, Rhodesia. Seeds presented by J. Burtt-Davy. An unarmed tree, 15 to 30 feet in height, with leathery leaflets and large pealike flowers in terminal racemes.

46785. PASSIFLORA SP. Granadilla. From Puerto Mexico, Vera Cruz. Collected by Wilson Popenoe, Agricultural Explorer. A granadilla which grows on the beach in the vicinity of Puerto Mexico. The fruits are unusually handsome and are sold in the markets. They are round, an inch or more in diameter, and of a brilliant crimson color. The seeds are surrounded by a white pulp.

49452. PASSIFLORA SP. Granadilla. From Guatemala. Seeds collected by Wilson Popenoe, Agricultural Explorer. A vigorous climber from the hot, low sections; produces round fruits up to 2 inches thick, lemon-yellow in color, with translucent whitish flesh of subacid, pleasant flavor.

46595. PENTSTEMON PALMERI. From Arizona. A very promising drought-resistant perennial ornamental which grows to a height of 4 to 6 feet and produces large pink flowers in spikes 2 to 3 feet in length.

26710. PERSEA AMERICANA. Avocado. Var. Taylor. A promising winter-fruiting variety of Guatemalan type, grown at Miami, Florida. Fruit pear-shaped, about one pound in weight, with thick, woody skin, rough, and deep green on the surface. Flesh creamy yellow, of very rich flavor; seed medium-sized and tight in the cavity. Ripens January to March at Miami.

50968. PERSEA AMERICANA. Avocado. Var. Dade. Originated at the Miami Plant Introduction Field Station; a seedling from the Trapp avocado, ripens its fruit in November. The fruit is globose, green-skinned, and of excellent quality. The tree grows vigorously and yields prolifically and regularly.

12180. PHYLLOSTACHYS BAMBUSOIDES. Bamboo. Var. Madaka. From Yokohama, Japan. Received through the Yokohama Nursery Co. The best timber bamboo in Japan, where it is planted in large groves, on well-drained soil. Spreads underground, but is easily controlled by ditches. The timber lends itself to the greatest variety of uses as a building material for making ladders, baskets, fences, crates, etc. Chinese name Tae tsoh.

23234. PHYLLOSTACHYS NEVINII HUPEHENSIS. Bamboo. From China. Collected by F. N. Meyer, Agricultural Explorer. One of the largest of Chinese timber bamboos. Grows in valleys and on the foothills of mountains and is widely utilized in the manufacture of furniture, agricultural implements, for boat-hook handles, poles, etc.

48975. PHYTOLACCA DIOICA. Ombu. From Brazil. Presented by P. D. Barnhart. An ornamental evergreen tree. The wood is used in making boxes, chests, etc; the ashes are a valuable source of potash; the roots are utilized as hog feed; the bark of the roots is said to have medicinal value.

49402. PICEA SP. Spruce. From China. Seeds presented by Joseph Bailie. An unidentified Chinese spruce of possible value as a park or ornamental tree.

39996. PICEA KOYAMAI. Spruce. From Japan. Received from the Arnold Arboretum. A tree, up to 30 feet in height, with bright reddish-brown branchlets; bluish-white, four-sided sharp-pointed leaves 1/3 to 1/2 inch long; cones brownish-green, 1/2 to 2 1/2 inches long with broadly oval scales.

45914. PINUS ARMANDI. Pine. From Formosa. Presented by G. Takata, Department of Productive Industries, Formosa. A pine growing to a height of 70 to 200 feet and producing

cones 9 to 12 inches long and containing large edible seeds. These cones supply an excellent fuel.

42730. *PINUS BUNGEANA*. Pine. From China. Collected by F. N. Meyer, Agricultural Explorer. A tall-growing, handsome conifer occurring wild in different sections of North China. Has a strikingly ornamental white bark which becomes noticeable after the tree has reached the age of about 50 years. The seeds are roasted and eaten by the Chinese as we eat chestnuts.

46136. *PISTACIA CHINENSIS*. Chinese pistache. Received through T. Johnson, American Consul, Changsha. A very promising shade tree for those sections of the United States where the summers are warm and the winters but moderately cold. The young leaves are carmine-red, and the fall foliage gorgeously scarlet and yellow. The wood, which is very heavy and not often attacked by insects, is used in the manufacture of furniture. From the seeds an oil is obtained which is used for illuminating purposes. The young, partly open foliage buds, boiled like spinach, are sometimes eaten by the Chinese.

12815. *PISTACIA VERA*. Pistache. From near Caltanissetta, Sicily. Collected by T. H. Kearney, Agricultural Explorer. A small deciduous tree cultivated in the Mediterranean regions for its nuts, which are used extensively in confectionery and as a table nut.

47757. *PITTOSPORUM FLORIBUNDUM*. From Darjiling, India. Presented by G. H. Cave, Director Lloyd Botanic Garden. Handsome small evergreen tree with a short, straight trunk and spreading branches, and producing numerous yellowish flowers in terminal panicles. The bark is bitter aromatic, and said to possess narcotic qualities. The tree yields an aromatic, yellow resin having very tenacious properties. The timber is light colored, strong and tough, but of small size.

47759. *POGOSTEMON PARVIFLORUS*. From Darjiling, India. Presented by G. H. Cave, Director Lloyd Botanic Garden. A small bush belonging to the mint family. Found in subtropical portions of the Himalayas; has a strong, black-currant odor. The bruised leaves are used as a cleansing poultice for wounds. Roots said by the natives to be a remedy for insect bite.

45892. *POMADERRIS ELLIPTICA*. From Auckland, New Zealand. Presented by H. R. Wright. A rare dwarf New Zealand ornamental shrub, 4 to 8 feet high. When about two years old it produces an abundance of yellow flowers which are clustered into large, many-branched panicles. Native name Kumarahou, from "kumara" (a tuberlike root) and "hou" (growing deeply or strongly).

22363. *POPULUS SIMONII*. Poplar. From Novaspaska, Russia. Collected by A. Woeikoff. A rapid-growing poplar hardy as far

north as Manitoba. An excellent windbreak tree adapted to the Great Plains. This material coming from Russia may prove different from that already grown under this name in America.

17154. PRUNUS ARMENIACA. Apricot. From China. Collected by F. N. Meyer, Agricultural Explorer. A medium-sized, golden yellow, freestone apricot with deep dull-red blush. The flesh is golden yellow, stringy, somewhat meaty until fully ripe; flavor mild, sweetish; of fair quality.

X 20072. PRUNUS ARMENIACA. Apricot. From China. From F. N. Meyer, Agricultural Explorer. A red apricot grown in the gardens of Liaoyang; of medium size and of very sweet flavor. Should stand the winters in the Great Plains region.

X 38281. PRUNUS ARMENIACA. Apricot. A Chinese variety, collected by F. N. Meyer, Agricultural Explorer. Said to be a variety with very large, yellow, sweet, juicy fruits, with strong red blush on one side. Chinese name, Ta shui hsing (large water apricot).

33223. PRUNUS AVIUM. Cherry. Var. Garrafal le Grand. From Pedro Giraud, Granada, Spain. Purchased at the request of W. T. Swingle, of the Bureau of Plant Industry. A large variety of cherry, possibly of French origin. Should be tested in the Pacific Coast cherry region.

32751. PRUNUS DOMESTICA. Prune. From Felix Wenger, Langenbuhl, Thun, Berne, Switzerland. This prune resembles the Italian, but is much larger and contains more sugar. It is locally known as the "grafted prune." To be tested in the northwestern section of the United States.

40498. PRUNUS DOMESTICA. Plum. Var. Papagone. From Boscotrecase, near Naples, Italy. Presented by Gustav Eisen. Said to be an excellent plum which should do well in a climate similar to that of Naples.

46003. PRUNUS GLANDULOSA. Cherry. From China. Collected by F. N. Meyer, Agricultural Explorer. A spreading shrub, with many slender twigs, growing to a height of from 3 to 5 feet; produces, early in the spring, a multitude of small, rosy white flowers, followed by an abundance of small, purple-black fruits of sour taste; may be made into excellent preserves. Seems to thrive in regions with high summer temperatures. Chinese name Cai yuen tao (dwarf diminutive peach).

41465. PRUNUS JAPONICA. Flowering cherry. From Kwangchengtze, Manchuria. Presented by R. J. Gordon. A bushy ornamental plant rarely over 5 feet high. Flowers rose-colored or blush, in twos and threes; fruits globular, or short oblong,  $\frac{1}{2}$  inch in diameter; smooth and shining, wine-red.

40997. PRUNUS MAXIMOWICZII. Korean Flowering Cherry. Received through the Arnold Arboretum. A distinct and attractive species up to 25 feet in height, with obovate leaves about 1 1/2 inches across, appearing with the full foliage. Fruit about the size of a small pea, red, turning to black. Native to Chosen, Manchuria, Sakhalin, and Japan.

18587. PRUNUS PSEUDOCERASUS. Tangsi Cherry. From China. Collected by F. N. Meyer, Agricultural Explorer. A distinct species of fruiting cherry tree, *P. pseudocerasus*, a name erroneously applied to the Japanese flowering cherry. The tree does not stand low temperatures. The fruit appears 10 days earlier than the earliest fruiting cherries of California. The trees are unusually vigorous.

30691. PRUNUS SALICINA. Japanese Plum. From China. A small, yellow, clingstone plum of pleasant flavor and good quality. The fruit is too small for commercial use, but the variety may prove of value for breeding experiments and as a stock.

43175. PRUNUS SALICINA. Japanese plum. Var. Arkana. From New Zealand. Presented by H. R. Wright. A chance seedling which resembles Botan. The tree is a vigorous grower and a heavy yielder. The fruits are of good color and firm flesh. May prove of value in breeding experiments and as a stock for larger varieties.

43176. PRUNUS SALICINA. Japanese plum. Var. Alpha. From New Zealand. Presented by H. R. Wright. Said to be a reliable yielder with fruits of large size and distinctive flavor, and of firm flesh.

43178. PRUNUS SALICINA. Japanese plum. Var. Sharp's Early. From New Zealand. Presented by H. R. Wright. Thought to be a seedling from Botan. The fruit is of medium size; purple when ripe. Said to yield heavily.

43179. PRUNUS SALICINA. Japanese plum. Var. Wright's Early. From New Zealand. Presented by H. R. Wright. Of lower quality than plums of the domestica group, but prized for its productivity and the longer keeping quality of the fruits.

43180. PRUNUS SALICANA. Japanese plum. Var. Wright's Early. From New Zealand. Presented by H. R. Wright. Budded on *Amygdalus davidiana*.

43181. PRUNUS SALICINA. Japanese Plum. Var. Wright's Purple. From New Zealand. Presented by H. R. Wright. Budded on S. P. I. No. 44686, *Amygdalus davidiana*.

43182. PRUNUS SALICINA x (?). Plum. Var. Best's Hybrid. From New Zealand. Presented by H. R. Wright. Said to be a splendid

dessert and culinary plum. A cross between the Cherry plum and Ogon. Fruits are large, yellow, and of pleasing flavor.

31652. PRUNUS SALICINA x CERASIFERA MYROBALANA. Plum. Var. Methley. From W. J. Newberry, Curator, Botanic Gardens, Pietermaritzburg, Natal. A dark-red fruit; flesh dark red, firm; stone medium in size; cling; flavor and quality good; season very early.

32670. PRUNUS SPINOSA x DOMESTICA. Hybrid Plum. From Kozlov, Russia. Collected by F. N. Meyer, Agricultural Explorer. A hybrid produced by the plant breeder I. V. Mijurin, between the Green Reine Claude and *P. spinosa*, a hardy spiny bush of Europe, Persia, North Africa, and Siberia. This hybrid produces small, purple, sweet, characteristically spicy fruits which are of good keeping quality.

32671. PRUNUS SPINOSA x DOMESTICA. Hybrid Plum. From Kozlov, Russia. Collected by F. N. Meyer, Agricultural Explorer. A hybrid between the Green Reine Claude and *P. spinosa*, originated by I. J. Mijurin at Kozlov. The fruits are of medium size, dark purple, and have a sweet delicate flavor. The trees are very productive and vigorous.

32673. PRUNUS SPINOSA x DOMESTICA. Hybrid Plum. From Kozlov, Russia. Collected by F. N. Meyer, Agricultural Explorer. A hybrid, produced by I. V. Mijurin, from Green Reine Claude and *P. spinosa*. Fruits medium-sized, of a beautiful yellow color; sweet, spicy, and juicy; of good keeping quality. Tree medium-sized, very healthy; cold-resistant.

36086. PRUNUS TOMENTOSA. Chinese Bush Cherry. From China. Collected by F. N. Meyer, Agricultural Explorer. An early-flowering deciduous shrub bearing small white flowers tinged with rose, followed by small fruits which are valuable for preserves and jellies. Its extreme hardiness and its ornamental character suggest the value of this plant for hybridization experiments.

48255. PSEUDOLACHNOSTYLIS SP. From Victoria Falls, Rhodesia. Seed presented by J. Burt-Davy. A shrub or small tree with alternate, upright, simple leaves and dioecious flowers, the male flowers being in axillary few-flowered cymes, and the female flowers being axillary and solitary. Said to be POISONOUS.

47508. PSIDIUM GUAJAVA. Guava. From San Marcos, Cuba. Presented by Robert Reid. Well-known tropical fruit, generally utilized for jellies and preserves; large shrubs with white flowers; the fruits 2 to 3 inches in diameter, containing many small hard seeds. The flesh is white and of a musky flavor. This is one of the best Peruvian varieties.

47165. PSYCHOTRIA UNDATA. From Littleriver, Florida. Collected by Charles T. Simpson, for experimentation with nitrogen-gathering rubiaceous plants at the Plant Introduction Field Station, Miami, Fla.

45587. PTEROCARYA STENOPTERA. From China. Collected by F. N. Meyer, Agricultural Explorer. A tall ornamental tree belonging to the walnut family. The pinnately compound leaves are of a fresh green color. In early spring, before the leaves are out, the trees are loaded with long, greenish-brown, staminate catkins which give them a festive appearance. A very promising shade and avenue tree for the mild-wintered sections of the United States.

8432. PUNICA GRANATUM. Pomegranate. Var. Frances. From Valetta, Malta. Received through Testaferrata Abela. An evergreen shrub with attractive flowers and large round fruits. The skin is leathery and encloses a large number of small seeds each surrounded by a layer of pink acidulous pulp of vinous, very pleasant flavor; eaten out of hand or used in the preparation of a refreshing drink. The rind contains tannin and is employed in the manufacture of morocco leather.

24825. PUNICA GRANATUM. Pomegranate. From La Tour-de-Peilz, Vaud, Switzerland. A type of pomegranate remarkable for its vigor and hardiness. It is supposed to be the only variety with double flowers which will fructify and sometimes ripen fruit in a climate like that of central France, and even near Paris provided that it is planted in a favorable exposure.

27049. PUNICA GRANATUM. Pomegranate. Var. Krylezy-Kabuk. From near Sukhum-Kale, Caucasus. A Russian variety of pomegranate received from the experimental station near Sukhum, through F. N. Meyer, Agricultural Explorer.

27966. PUNICA GRANATUM. Pomegranate. Var. Kyrmisi Kabugh. From Russia, Collected by F. N. Meyer, Agricultural Explorer. The fruits of this variety are large, bright red and of a sour-sweet taste.

33227. PUNICA GRANATUM. Pomegranate. Var. Negro Monstruosa. From Granada, Spain. One of the principal varieties of pomegranate grown in the vicinity of Granada, Spain.

40736. PYRACANTHA CRENULATA. From China. Collected by F. N. Meyer, Agricultural Explorer. Small shrub with glistening green foliage, and bearing in the fall a multitude of bright red berries. Of value as an ornamental rockery shrub for mild-wintered sections of the United States.

37071. PYRUS SP. Pear. From China. Presented by Kamei Kin. Pan chin li (half-catty pear), so called on account of the

large size of the fruits. Two full-sized pears weigh a catty (1 1/3 lbs.). Flesh fine, white, and of good flavor. X

X 38240. PYRUS CHINENSIS. Pear. From China. Collected by F. N. Meyer, Agricultural Explorer. Chinese name Chin li (golden pear). A very large Chinese pear, the barrel-shaped dark-yellow fruits often weighing a pound each. Flesh non-melting, somewhat coarse in texture, but juicy and sweet. Possesses good keeping and shipping qualities. May prove of value for hybridization experiments. X

X 38241. PYRUS CHINENSIS. Pear. From China. Collected by F. N. Meyer, Agricultural Explorer. Chinese name Pai li (white pear). Roundish, pale-yellow fruits of medium large size; flesh non-melting, of somewhat granular texture, juicy, and of moderately sweet taste. May prove of value for hybridization experiments. X

X 38262. PYRUS CHINENSIS. Pear. From China. Collected by F. N. Meyer, Agricultural Explorer. Chinese name Ner li (swan pear). This variety grows to a very large size. The round-oblong, dark-yellow fruits are of somewhat coarse texture, but juicy and sweet. Possesses good keeping and shipping qualities. X

X 38263. PYRUS CHINENSIS. Pear. From Honan, China. Collected by F. N. Meyer, Agricultural Explorer. Chinese name Pin li (luscious pear). Reported as a very large variety of round-oblong shape and dark yellow color. Not a good keeper, but of probable value for canning and hybridization work. Seems quite blight-resistant. X

38267. PYRUS CHINENSIS. Pear. From China. Collected by F. N. Meyer, Agricultural Explorer. Chinese name Huang li (yellow pear). A summer variety said to be of medium size, yellow color, and very sweet taste. Does not keep well. May prove of value in breeding experiments.

X 43444. PYRUS CHINENSIS x COMMUNIS. Hybrid Pear. Produced by Dr. Van Fleet, at Little Silver, N. J. Varietal parentage doubtful. Fruit large, roundish, upright, with short neck and rough skin; flesh coarse, but sweet, and juicy. If resistant to pear blight, this hybrid may prove valuable commercially. Ripens in early October. X

X 33207. PYRUS COMMUNIS. Pear. Var. Favorita. From Granada, Spain. Presented by Pedro Giraud. A very large pear with lemon-yellow, sweet, savory, buttery flesh. Fruit similar to the Bartlett in appearance and quality. Ripens about the middle of August.

43185. PYRUS COMMUNIS. Pear. Var. Packham's Triumph. From New Zealand. Presented by H. R. Wright. This tree comes

into bearing at an early age and yields prolifically. The fruit is similar to that of William's Bon Chretien. Said to be promising as a commercial variety.

43186. PYRUS COMMUNIS. Pear. Var. Winter Cole. From New Zealand. Presented by H. R. Wright. Seedling of Winter Nelis which it resembles. Fruit almost round, of medium size; skin pale yellow, spotted with russet. Said to be of excellent flavor.

47778. RHUS SUCCEDANEA. Sumach. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A small tree native to many parts of Hawaii, ranging from 2,000 to 8,000 feet. The light brown drupes enclose large oily seeds from which the Japanese prepare a beautiful white wax suitable for making candles. The tree also yields a small amount of varnish.

49366. RICINUS COMMUNIS. Castor-bean. From Mexico. Seeds presented by J. R. Uribe. This castor-bean is said to grow wild in certain parts of Mexico. The seeds are 7/10 inch long by 3/5 inch wide, light gray with a few brown markings.

44426. ROSA ODORATA. Rose. From China. Collected by F. N. Meyer, Agricultural Explorer. A climbing rose producing double white flowers, with light pink centers. An attractive rose, of unusual value as a stock on which to graft or bud other roses. Cuttings root very readily. Will not stand severe frost.

49684. ROSA SOULIEANA. Rose. From China. Received through Vilmorin-Andrieux & Co., Paris, France. A large straggling bush rose with short sharp prickles, and pale green leaves 2 to 3 inches long. The creamy white flowers are about 2 inches wide, borne singly on the ends of the branches or in cymose clusters.

47923. RUBUS SP. Bramble. From Zamboanga, Philippine Islands. Seeds presented by P. J. Wester, Agricultural Advisor. Grows on high elevations in North Luzon, and may do well in Florida.

46957. RUBUS BOGOTENSIS. Blackberry. From Colombia. Seeds presented by Carlos Eder. A large-fruited blackberry which grows wild in the subtropical zone of Colombia at an altitude of 6,000 to 8,000 feet.

44401. RUBUS IRENAEUS. Bramble. From China. Presented by Vicary Gibbs, Elstree, Herts, England. A shrubby Chinese Rubus with evergreen foliage suggesting coltsfoot in size and shape, but having a curious metallic luster on the upper surface. The flowers are white and are followed by large red fruits. Recommended as a ground cover for semishaded slopes.

48023. RUMEX ABYSSINICUS. From Portuguese West Africa. Seeds presented by John Grossweiler. This plant, which grows to a

height of from 7 to 8 feet, yields all through the summer an abundance of green leaves that may prove a substitute for spinach in our southern states where summer green-leaved vegetables are scarce.

17737. SALIX MATSUDANA. Willow. From China. Collected by F. N. Meyer, Agricultural Explorer. A strong-growing tree of upright habit, with smooth greenish pendent branches tinged with yellowish red. Occurs on dry lands in north China, where it requires no water beyond the scanty summer rainfall. The tree is well adapted to the drier sections of this country. As it becomes older the head assumes a fine globular shape and forms one of the finest of ornamental trees.

44995. SALVIA HEMPSTEADIANA. Collected by Wilson Popenoe, at Purula, Guatemala. A perennial herbaceous plant, growing to a height of 2 feet. The brilliant dark-blue flowers, tubular in form and about an inch long, are borne in spikes.

46146. SALVIA HISPANICA. From Mexico. Presented by Mrs. Zelia Nuttall. An herbaceous perennial with ovate serrate leaves and quadrangular spikes of blue flowers. The mucilaginous seeds are used in making the Mexican drink, "chia."

47786. SAUSSUREA DELTOIDEA. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A tall composite, 4 to 6 feet in height, native to the central and eastern Himalayas and at altitudes ranging from 6,000 to 11,500 feet. Leaves large, with cottony lower surface; heads extremely variable. Of possible value as a garden ornamental.

45810. SCHOENOCALON OFFICINALE. From Venezuela. Presented by H. Pittier. A bulbous plant growing on the eastern declivities of the volcanic range in Mexico and parts of Central America. The fruit is a source for veratrine, a powerful irritant and counter-irritant. In Mexico the bulb is used as an expellent of intestinal worms, but is dangerous in its action.

47792. SENEIO UNCINELLUS. From Darjiling, India. Seeds presented by G. H. Cave, Director, Lloyd Botanic Garden. A tall shrubby plant native to the central and eastern Himalayas at altitudes of 4,000 to 6,000 feet. The leaves are used by the natives as a remedy for boils.

48289. SOLANUM SP. From Cape Town, Cape Province. Seeds collected by H. L. Shantz, Agricultural Explorer. A Solanum bearing large smooth fruits.

48550. SOLANUM SP. From Kenkelbosch, Cape Province. Seeds collected by H. L. Shantz, Agricultural Explorer. A Solanum with a small fruit and a very large mulleinlike leaf.

45751. SOLANUM BULLATUM. Capoeira branca. From B. H. Hunnicutt, Lavras, Minas, Brazil. A South American plant which promises to become a valuable forage plant because of the high percentage of protein contained in the leaves.

48287. SOLANUM GIGANTEUM. From Cape Town, Cape Province. Seeds collected by H. L. Shantz, Agricultural Explorer. A large prickly shrub, 8 feet in height, with fruit an inch in diameter. The natives place portions of the fruit in hollow teeth as a remedy for toothache.

45813. SOLANUM MURICATUM. Pepino. From Ecuador. Presented by F. W. Goding, American Consul General. The pepino is an upright, spineless, bushy shrub 2 to 3 feet high. The ovoid fruit, 4 to 6 inches long, is yellow, overlaid with splotches of violet-purple. The yellow flesh is aromatic, tender, juicy, and in taste suggests an acid eggplant. Cultivated varieties are seedless. Forms part of the diet of the natives, being eaten raw or cooked in various ways.

48288. SOLANUM SODOMEUM HERMANNI. From Cape Town, Cape Province. Collected by H. L. Shantz, Agricultural Explorer. A shrubby, spiny Solanum with purple flowers followed by globose fruits 1-1/4 inches in diameter, which are at first green, variegated with white, and finally yellow.

45023. SOLANUM TUBEROSUM. Potato. From Hawaii. Presented by J. N. Westgate. A purplish-colored variety of potato which seems to be quite resistant to blight, wilt, etc.

21967. SOPHORA DAVIDII. From China. Collected by F. N. Meyer, Agricultural Explorer. An ornamental leguminous shrub, up to 5 feet in height, sometimes used as a hedge plant. Bears small, pinnate leaves and whitish lilac flowers produced in immense quantities.

43727. SORBARIA ARBOREA. From the Arnold Arboretum. A beautiful summer-flowering shrub, 10 to 20 feet in height, with rather large bright-green pinnate leaves and small white flowers in large showy panicles. Closely allied to the Spiraeas, and one of the most treelike of this group of plants. Native to central China. Hardy as far north as Cambridge, Mass.

47216. SPATHODEA CAMPANULATA. From Nigeria. Seeds presented by A. H. Kirby. A handsome, erect, ornamental flowering tree, related to the catalpa. The leaves resemble those of the black walnut. The large orange-red flowers are produced in clusters at the ends of the branches. Cultivated throughout the Tropics.

47802. SPIRAEA MICRANTHA. Spiraea. From Darjiling, India. Presented by G. H. Cave, Director, Lloyd Botanic Station. An ornamental shrub found on the temperate slopes of the Himalayas

at altitudes of 6,000 to 10,000 feet. Leaves ovate-lanceolate, sometimes 7 inches long; flowers pale pink often 1/4 inch across, borne in long spreading panicles.

49002. STERCULIA DIVERSIFOLIA. From Castlemaine, Victoria. Seed presented by J. W. B. Field. A fine ornamental evergreen tree which occurs over a great part of New South Wales near the coast and far inland. The shining green leaves are either deeply lobed or entire. The nearly ovoid fruits, about 3 inches long, contain about 20 seeds, which, when ground, form an excellent substitute for coffee. The leaves are used as fodder in times of drought.

47363. STILLINGIA SEBIFERA. Chinese Tallow Tree. From China. Seeds presented by Mr. Han, Assistant Director of the Chinese Forestry Bureau. A medium-sized, compact tree, with sharply pointed leaves and small 3 to 4-seeded fruits. The seeds are enveloped by a white odorless wax, employed extensively in China for candle-making. The kernels yield a yellow fixed oil of bland odor and agreeable nutty flavor. The tree succeeds well in the South and Southwest.

45920. SYRINGA REFLEXA. Chinese Lilac. From Fang Hsien, Western Hupeh, China. Presented by John Dunbar, Rochester, N. Y. A bush 6 to 9 feet in height, growing at elevations of 4,500 to 7,500 feet. The deep green leaves are elliptic-oblong, ovate or lanceolate. The inflorescence of violet-colored flowers is about 6 inches in length.

49137. TAMARIX HISPIDA. From Rochester, N. Y. Cuttings presented by John Dunbar, Assistant Superintendent of Parks. An ornamental shrub of graceful habit, up to 4 feet in height, with very finely divided leaves and beautiful racemes of minute pink flowers which appear in September.

48259. TERMINALIA SP. From Victoria Falls, Rhodesia. A small tree or large shrub with alternate entire leaves.

46898. THEOBROMA CACAO. Cacao. From British West Indies. Presented by the Department of Agriculture, Trinidad and Tobago. A small tree 16 to 18 feet in height, with oblong taper-pointed leaves, and the clusters of flowers, with rose-colored calyx and yellowish petals, are followed by fruits 6 to 10 inches in length, containing 50 to 100 seeds from which the cocoa of commerce is prepared.

48186. THESPESIA POPULNEA. From St. Vincent, Cape Verde Islands. Seed collected by H. L. Shantz, Agricultural Explorer. A tree common on tropical seacoasts, which reaches a height of 30 to 50 feet; has a dense crown and produces yellow flowers throughout the year. The inner bark yields a fiber and the wood is durable and useful.

49166. THUNBERGIA SP. From Victoria Falls, Rhodesia. Collected by H. L. Shantz, Agricultural Explorer. A shrub or woody vine with fragrant white flowers and black fruits.

22975. ULMUS PUMILA. From China. Collected by F. N. Meyer, Agricultural Explorer. A shade and timber tree remarkably resistant to drought, alkali, and severe extremes of temperature. The timber is used in China mainly for the manufacture of carts. This tree is of exceptional promise as a shade tree for the semi-arid regions of the United States, where it has made phenomenally rapid growth. Has also done well in other sections.

43731. VIBURNUM DILATATUM. From the Arnold Arboretum, Jamaica Plain, Mass. A deciduous shrub, native to Japan and China, 6 to 10 feet high, with pure white flowers followed by bright red, roundish fruits.

43053. ZEPHYRANTHES SP. From Colombia. Presented by H. M. Curran. A small white-flowered, bulbous plant allied to the amaryllis. Cultivated as a garden ornamental by the natives along the banks of the Magdalena River.

48261. ZIZIPHUS MUCRONATA. From Victoria Falls, Rhodesia. Presented by J. Burt-Davy. A small tree 20 to 30 feet in height; the edible fruit is believed to be used by the natives in making a bread which tastes like gingerbread; it is also said to be used in the preparation of a pleasant beverage. The leaves are used medicinally by the natives; a decoction of the root is used for lumbago. The hard wood is used in making wagons, etc.

