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New Plant Introductions 1915-1916

Descriptions of Imported Seeds and Plants
which will be sent to Experimenters

Fifth Annual List

Special Notice

THOSE WHO DESIRE TO EXPERIMENT WITH ANY OF THESE
SEEDS OR PLANTS SHOULD APPLY WITHOUT DELAY, FOR
SHIPPING ARRANGEMENTS ARE NOW BEING MADE.

Bureau of Plant Industry

U. S. Office of Foreign Seed and Plant Introduction

United States Department of Agriculture

Washington, D. C.

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INTRODUCTORY NOTE.

This catalogue describes over 300 species or varieties of foreign plants most of which have not been grown to any extent in this country. Our familiarity with them is consequently very limited and they are not like standard seeds and plants, the behaviour of which can be predicted with more or less certainty.

They 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 the experts of the United States Department of Agriculture and by 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 ultimately be grown by private individuals before their commercial success is assured, it may be well to point out that those private experimenters who test these problematical new plants are assisting in a very practical way in the plant introduction work of the country even though they are not paid for their work.

It is often around the successful cultivation of a new introduction by some private individual that a new plant industry begins.

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The plants imported by this office of the Department of Agriculture are in most cases so little known to experimenters that their scientific or even common names alone would convey little idea of their character. To distribute them under a name simply and depend upon the experimenters to look them up in a catalogue entails a burden upon the investigator which often results in his being ignorant at the close of the year of what the new plant is good for. To enable him at any time to refresh his memory as to the use of any one of these introductions, special labels have been devised upon which are printed sixty words of description. These descriptive labels are attached to the plants when they are sent out. This catalogue is made up of the identical descriptions which will appear upon them.

The information on the labels consists of the Seed and Plant Introduction (S.P.I.) number, under which the plants are known at all times, of the scientific name and a common name, when one has been adopted for this country, and 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 exact number given in the description may be available for distribution, but in such cases plants of the same species and variety under another introduction number may be substituted.

At the end of this catalogue is given a list of plants with their S.P.I. numbers, but without descriptions. Of many of these plants only a few are available for distribution or the information at hand concerning the introduction is too meager for regular labels to be written.

Requests for material in this catalogue and the appended list should be made by letter to this Office, taking especial pains to write *the name and number of each plant desired very plainly*, together with your name and address in full, your shipping address if different, and the date you desire plants shipped.

If the applicant is not already on our list of experimenters, full information should be supplied as to the amount of land at his disposal, whether owned or leased, whether plants are desired for greenhouse or outdoor culture, and his experience in caring for and experimenting with plants.

Since the electrotypes slugs of all descriptions in this and previous catalogues are kept in stock in this office, experimenters having plants growing from previous distributions who desire to relabel them can secure new labels by sending in a twig of the plant, the label of which is lost, and furnishing information as to the year in which it was sent and any other available data.

33749. ABELMOSCHUS ESCULENTUS. Okra. From E. A. McIlhenny, Avery Island, La. An Egyptian variety of okra imported several years ago and since improved by selection. It is an early bearer and has thicker and more tender flesh than the varieties commonly grown.

18580. ABELMOSCHUS MANIHOT. From F. N. Meyer, Pekin, China. A large, malvaceous herb, 3 to 9 feet high, perennial in warm climates. annual in cooler situations. This variety, which is native to southern China, seems to be allied to the Sunset Hibiscus of the trade, but has larger flowers of a brighter yellow color.

39355. ACACIA HORRIDA. Doorn-boom or Karra-Doorn. From Mr. J. Burt-Davy, Johannesburg, South Africa. Usually small, umbrella-shaped tree, 10 to 15 feet high, with greater spread than height; occasionally taller with less spread, bearing spines 3 inches long. Usually evergreen but often leafless for considerable periods. Exudes gum of good quality. Used extensively in tanning. Grows under semi-arid conditions.

ACTINIDIA CHINENSIS. Yang Taw. Deciduous, trailing vine, with handsome white flowers, occurring wild in Eastern China. Dioecious; the pistillate plants produce fruits resembling in size and shape small plums, with delicate gooseberry flavor. Eaten raw or made into delicious jelly. For testing for porch decoration and fruiting in the mild-wintered regions of the United States.

39542. ADENANTHERA PAVONINA. Circassian Bean. From Chas. T. Simpson, Little River, Fla. A large handsome tree from tropical Asia, with graceful pinnate foliage and spiral pods of hard, bright red seeds the size of beans. They are used as food by the natives of India, and are often strung into necklaces. For trial in regions free from injurious frosts.

40037. AESCULUS WILSONII. Horse-Chestnut. Found near Chenghsien, Kansu, China, by F. N. Meyer. A Chinese horse-chestnut growing into a large tree with an enormous spread of head. Distinguished from *A. chinensis* by the nearly glabrous leaves. A beautiful shade tree, especially for those parts of the United States where the winters are not too severe.

38735. ALBIZZIA MARGINATA. From L. J. Mackintosh, Darjeeling, India. A tall, fast growing sub-tropical shade tree, with graceful feathery foliage. The gum is considered very valuable as a size in the manufacture of Nepal paper. The dark-colored wood of this species is much softer than that of other species of the genus. Hardy in sub-tropical countries.

25080. ALEURITES CORDATA. Japan Wood-Oil. From Tokyo, Japan. A subtropical and tropical species, growing only in the southern half of Japan. The seeds are much smaller than in other species of *Aleurites*, being similar in size and appearance to large castor beans. The oil expressed from them is similar to that from *A. fordii*.

ALEURITES FORDII. Tung Oil or Wood Oil tree of the Yangtse Valley, China. The large seeds borne in fruits the size of small apples, yield 28 per cent. of one of the best drying oils known. Large importations made into America. Deciduous tree with white flowers. Stands frost. Seven-year old tree near Tallahassee, Fla., bore one bushel of fruit. Seed not edible.

ALEURITES MOLUCCANA.

Candle Nut. From the Philippine Islands. Tall tree yielding a commercial oil of quick drying properties. Forms an attractive shade tree in warm, well protected localities. Where the seeds are not used for the extraction of oil, the half-ripe kernels are considered very palatable when roasted. Close relative of China Wood Oil, but strictly tropical

41056. ALLIUM CEPA. Onion.

From Col. J. N. Merrill, Teheran, Persia. A very large onion, found in western Persia, at an elevation of 4000 feet in gravelly soil. The onions are as much as 6 inches in diameter by 4 inches in depth. Their flavor is highly esteemed by the Persians, who eat them raw.

40530. ALOE MARLOTHII.

From Geo. Thorncroft, Barberton, Transvaal. A conspicuous species about 10 feet high found in the hills near Barberton. The flower stems are branching. Color of flower orange-red.

39434. AMPELOPSIS ACONITIFOLIA DISSECTA. From F. N. Meyer, Ping yan fu, Shansi, China. A very handsome vine related to "Virginia Creeper," with finely cut light-green leaves downy on the veins, and dull yellow berries. It is reported to be of considerable value as a porch, arbor, or pergola vine, especially in semi-arid regions. It grows rapidly and is comparatively hardy.

40738. AMPELOPSIS SP. From F. N. Meyer, near Meihsien, Shensi, China. Trailing vine, closely resembling *A. aconitifolia dissecta*, but with larger leaves and broader winged leaflets. Berries dull yellow. Grows in stony soil. For trial in dry regions as a porch and trellis vine.

33216. AMYGDALUS COMMUNIS. Esperanza Almond. From Granada, Spain, through Walter T. Swingle. A variety recommended for culture by Pedro Giraud, nurseryman of Granada, who points out that almonds give best results on warm, rocky limestone soils. Grafted on the wild Chinese stock, *Amygdalus davidiana*, S. P. I. 34515. For trial in the California and Arizona almond regions.

37559. AMYGDALUS PEDUNCULATA. From M. M. Timogowitsch, Chita, Trans-Baikal, Siberia. A bushy wild peach from 1½ to 6½ feet high, small oblong strongly dentate leaves, and solitary pale red flowers. A very desirable hardy shrub found in the extremely cold region around Lake Baikal, Siberia, and in northeastern Mongolia. Character of fruit unknown but may have value for breeding purposes.

AMYGDALUS PERSICA. Seedling of the Fei Peach. From F. N. Meyer, Feitcheng, China. Budded tree from seedling of the famous Fei variety. Fruits large, clingstone, pale yellowish. Flesh white, pink around the stone; mild subacid, rather lacking in flavor; firm, somewhat tough; juicy; good keeper and shipper. Fruits early in August. Worth testing though probably much inferior to real Fei peach.

24915. AMYGDALUS PERSICA. Chinese Peach. From Canton, China, through G. W. Groff. Coming from South China, which has hot, humid climate where ordinary peaches fail, this variety may prove valuable for subtropical regions, although the fruit produced in California was too strong in flavor and too astringent to make the variety valuable there.



Amygdalus tangutica, a bush almond, up to 10 feet high, from western China, very drought, cold, and heat resistant, and also an attractive ornamental.



Annona squamosa, the sugar-apple, a tropical fruit with sweet, melting, creamy white flesh, worthy of wide cultivation in south Florida and southern California.

AMYGDALUS PERSICA.

Bolivian Clingstone Peach. The parent tree was raised from seeds collected by Edward Ehrhorn in Bolivia from trees grown by the Franciscan padres. The fruits are of medium size and fine quality.

34684. AMYGDALUS PERSICA NECTARINA.

Quetta Nectarine. From Quetta, India, through Lieut. W. L. Maxwell. Seedling from the best nectarine tree in Quetta. Fruited out in California. Pronounced by experts to be exceptionally fine and worthy of wide dissemination because of large size and good color, notwithstanding thin skin. Budded on Mexican peach stock (P. I. G. 8562).

40010. AMYGDALUS TANGUTICA.

Tangutian Almond. From F. N. Meyer, Lan tsai, Kansu, China. A very compact, bushy shrub, with tortuous spiny branches, usually 4 to 10 feet high but often attaining a height of 20 feet in sheltered places. Fruits very variable; skin thin, downy; stones ranging in size from that of a cherry to that of a large apricot. Very hardy, strongly drought resistant. Possibly of value as stock.

ANACARDIUM EXCELSUM.

Large tree with dense broad crown, admirable for avenue planting. Leaves 1 foot long, fruits size of a lima bean, not edible. Tender tropical tree native of northern South America. Wood used for cart wheels. Called "Nariz" in Cuba.

ANNONA CHERIMOLA.

Cherimoya.

Medium-sized shrub or dwarf tree, with vergreen foliage and small yellowish flowers. Fruits roundish, conical or heart-shaped, 3 to 6 inches in diameter with pleasantly flavored, sweetish pulp of the consistency of ice-cream with black seeds irregularly imbedded in it.

ANNONA GLABRA.

Alligator-Apple. A small to medium sized evergreen tree, sometimes attaining a height of 45 feet, bearing inedible fruits, the size of a bell-flower apple, with a smooth leathery skin, green at first, turning yellow. A swamp-loving tree of the American tropics, introduced for trial as a stock for other edible fruited annonas.

35590. ANNONA LUTESCENS.

Anona. From Don Nat. O. y Osuna, Sinaloa, Mexico. A small tree with spreading branches, from northern Guatemala and southern Mexico. Local name "Annona amarilla." Closely related to *A. reticulata*, differing in its broader leaves and its yellow fruit. In appearance the fruit resembles the alligator apple, (*A. glabra*), which is distinguished by its larger flowers.

ANNONA MURICATA. Soursop.

Small evergreen tree 12 to 18 feet high, bearing ovoid or heart-shaped edible fruits 6 to 8 inches in diameter, weighing up to 5 pounds, with fresh pleasantly acid pulp, excellent for the table and for jellies and preserves. Care must be taken to remove the skin in preparing the fruit for the table. Related to the Cherimoya but not of so delicate a flavor.

ANNONA RETICULATA.

Bullock-Heart. A deciduous tree, 15 to 25 feet high, from tropical America. Fruit edible, 3 to 5 inches in diameter, smooth, with the surface divided into rhomboidal areoles by impressed lines, usually reddish or reddish-brown when ripe, or red-cheeked on the sunny side. Pulp sweetish, somewhat insipid, rather granular. Occuring in tropical regions but may prove hardy enough for some sub-tropical regions.

37933. ANNONA SALZ-
MANNI. Araticum. From Bahia,
Brazil, through Dorsett, Shamel and
Popenoe. Handsome, medium-sized
tree resembling the custard-apple, but
differing in having thick, leathery
leaves with impressed nerves. Its
vigorous, robust habit suggests its use
as stock for cherimoya and for breed-
ing purposes.

40305. ANNONA SCLERO-
DERMA. Pox-te, or hard shelled
custard apple. From W. F. Curley,
Cajabon, Guatemala. Small tree with
roundish fruits, 3 inches in diameter,
having thick woody rind and soft
custard-like pulp, said to be of good
flavor. Considered very promising as
a new tropical fruit, since it can be
shipped readily. Seeds numerous, size
of a large bean.

ANNONA SENEGALENSIS.
Under this name are probably included
several species all confined to Africa.
Some of them are low shrubs with
fruit scarcely edible and others are
large trees with edible fruits. Com-
pared with American species they re-
semble more closely the shrubby an-
nonas of the plains of Paraguay,
Argentina and Southern Brazil In-
troduced for breeding purposes.

37911. ANNONA SPINESCENS.

Araticum. From Urubu, Bahia, Brazil, through Dorsett, Shamel and Popenoe. Wild, bushy shrub 15 feet high, common on low river banks. Its compact growth and stout spines make it a possible hedge plant. Fruit orange-red three inches long, somewhat resembling cherimoya; edible, but of little value except possibly for hog food. A possible stock for cherimoya.

ANNONA SQUAMOSA. Sugar

Apple. Indigenous to tropical America and now cultivated throughout the tropics of both hemispheres. Superior varieties are readily propagated by budding on seedlings of the same species or on *A. glabra*. The roundish fruit, about 4 inches in diameter, contains soft granular pulp of pleasant, sweet flavor, enclosing numerous seeds.

**39637. ANTHOCEPHALUS
CADAMBA**

From G. H. Cave, Darjeeling, India. Large deciduous ornamental tree, of the coffee family, native of Bengal. Bark is used as a febrifuge and tonic. Fruit edible. Foliage is sometimes used as fodder for cattle. The wood is white with a yellowish tinge, soft, evenly grained and much used for building purposes. Probably not hardy north.

ARALIA CORDATA. Udo. A Japanese vegetable suitable for wide cultivation for its blanched, edible shoots. Plant 3 to 4 feet apart. Plants grow bushy and yield edible shoots for nine years. To blanch shoots mound with earth or cover with closed drain tile in early spring. peel, slice into ice water and serve with French dressing, or stew and serve like asparagus.

ARGANIA SPINOSA. Spiny, compact, evergreen tree growing in driest soils in Morocco and forming forests. Olive-sized fruits contain single hard seeds, from which an oil with irritating and harsh taste is extracted, much used in Morocco for food and light; also makes good soap. Fruits are eagerly eaten by cattle and also used as a substitute for olives. Trees bear in four years.

34357. ASPIDOSPERMA MACROCARPON. Guatambu. A tree found on the plains in the province of Minas Geraes, Brazil, source of an important commercial timber used in building and for agricultural implements. It has a flat pod several inches in diameter containing a number of large, flat, paper-winged seeds. A related tree furnishes quebracho, the tanning material of Brazil

19897. ASSONIA CAYEUXII.

From Funchal, Madeira. A handsome ornamental tree, bearing large cordate acute leaves with long petioles, and beautiful pink flowers in pendulous many-flowered umbels. This rapidly growing tree is an ornament of value aside from its flowers. It seems to be a rather tender plant but is said to be suited to our southern climate. Propagates easily from cuttings.

37901. BARYXYLUM DUBIUM.

Collected by Messrs. Dorsett, Shamel and Popenoe, Minas, Brazil. A handsome ornamental tree with bipinnate mimosa-like foliage, and beautiful nearly regular yellow flowers arranged in huge panicles. The leaves are composed of 8 to 24 pairs of oblong leaflets. It is closely related to the Royal Poinciana with which it vies in beauty of flower and foliage. Native to Brazil.

40302. BAUHINIA KAPPLERI.

From Chas. T. Simpson, Little River, Florida. A small tropical tree bearing large handsome pinkish flowers, variegated with yellow and spotted with red. A rapid grower and profuse bloomer.

**39000. BAUHINIA PUR-
PUREA.** From L. J. Mackintosh,
Darjeeling, India. Small tree resem-
bling Redbud (*Cercis canadensis*), in habit,
with corymbs of large white to rich
purple flowers. Leaves composed of
twin leaflets united one-half to two-
thirds their length. This beautiful
tree has succeeded well in Florida
and southern California and blooms
through the winter and spring months.

40708. BAUHINIA SP. From
F. N. Meyer, near Ma dja Key, Kansu,
China. A dense shrub, 3 to 4 feet high,
found in stony soil on mountain
slopes. For trial as an ornamental in
regions with dry, mild winters.

BELOU MARMELOS. Bael
Fruit. Handsome tree of the family
rutaceae, with thin trifoliolate leaves
and greenish yellow fruit, usually 4
to 5 inches in diameter. Eaten raw or
used for making marmalade or sherbet
and other refreshing drinks. Has mild
laxative properties. Said to withstand
temperature of 20° F. in northwestern
India.

40142. BERBERIS AGGREGATA. Barberry. From the Royal Botanic Gardens, Kew, England. A small, spreading Chinese bush, with leaves in rosettes of about 9, ovate to oblanceolate, entire with a few teeth or spiny hairs in the upper half, dull green above, gray-green beneath, usually about 1-2 inch long and 1-4 inch broad. Berries small, creamy green, suffused with coral.

23918. BERBERIS AMURENSIS. Barberry. From New York Botanical Garden, through F. N. Meyer. Indigenous to the lower Amur Valley. A densely branched, deciduous shrub, 4 to 5 feet high. Leaves large, about 4 inches long and 2 wide. Early fruiting, and very ornamental when heavily loaded with its bright scarlet berries.

40144. BERBERIS ARISTATA. Barberry. From the Royal Botanic Gardens, Kew, England. Native of Himalaya, at an altitude of 6000 to 10000 feet. A handsome shrub of spreading habit, as much as 10 to 15 feet in diameter. Leaves whitish beneath. Flowers numerous, golden-yellow. Berries red, covered with blue-white bloom. One of the strongest growing and most striking of the deciduous barberries.

36737. BERBERIS CHINENSIS. Barberry. From F. N. Meyer, Hsiao Wu tai shan, China. A shrub of low growth, 1 to 3 feet high, found between boulders and rocks at elevations of 4,000 to 6,000 feet. Becomes very showy towards the end of summer when the berries, which are produced in great abundance, assume a bright coral-red color. Of value as an ornamental for rockeries, etc., in the northern states.

27118. BERBERIS DICTYOPHYLLA. Barberry. From the Royal Botanic Gardens, Kew, England. Native of Yunnan, southern China, at an altitude of 10000 feet. A graceful deciduous shrub, with long slender branches, along which the leaves are grouped in small tufts, subtended by long triple spines. The leaves turn a beautiful red in autumn. Fruit oval bright red.

13353. BERBERIS SIEBOLDI. Barberry. From Central Experimental Farm, Ottawa, Canada, through David Fairchild. A hardy, deciduous shrub of rounded form, native of Japan. Very similar to *B. vulgaris*, but more dwarf in habit, usually below 3 feet in height. Leaves thin, medium size, 1 to 2 1-2 inches long. Fruit round, bright yellowish-red.



Brassica pekinensis, the pai ts'ai of northern China, one of the best fall and winter vegetables. Keeps well and brings a good price in the late fall and winter.



Carica papaya, the common papaya or tree melon of the Tropics, as a grafted plant.

37497. BERBERIS SUB-CAULIALATA. Barberry. From Botanic Garden, Glasnevin, Dublin, Ireland. Deciduous, spiny shrub from Western China, with short leaves one-half to one inch long; whitish beneath. Flowers in very short, nodding racemes; fruit red. As dooryard shrubs barberries have proven so invaluable that this Chinese form is worthy of trial.

28380. BERBERIS THUNBERGII X VULGARIS ATROPURPUREA. Hybrid barberry produced by Dr. Walter Van Fleet. Very handsome yellow-flowered shrub of somewhat more open habit than *B. thunbergii* and possessing slightly larger leaves which, however, retain the beautiful deep purple color of *B. vulgaris atropurpurea*. A very promising ornamental deserving trial as a park, lawn or garden shrub.

25569. BERBERIS WILSONAE. Mrs. Wilson's Barberry. From Thomas Smith, Newry, Ireland. A dwarf, much-branched shrub densely clothed with gray-green leaves about a half-inch long, which turn a beautiful crimson in the fall. Spines nearly an inch long. Flowers a rich golden. Fruits nearly round, coral or salmon red, somewhat translucent, borne very abundantly. Discovered by E. H. Wilson in Western China.

38883. BETA VULGARIS.

Beet. From W. W. Mackie, Esperanza, Sonora, Mexico. This is a drought resistant variety obtained from Turkestan, where the leaves are much used for greens. The plant is vigorous and produces large roots, with tender, sweet, light red flesh.

39002. BETULA CYLINDRO-STACHYA.

Birch. From L. J. Mackintosh, Darjeeling, India. A tree found in the Himalayas between 3,000 and 10,000 feet, often attaining a height of 60 feet. Trunk clothed with curling flakes of papery bark giving it a curious ragged appearance. The dark green leaves are smooth above, slightly pubescent below, ovate, 2 to 4 inches long, 1½ to 3 inches wide. Wood said to be hard, durable and strong.

39638. BOEHMERIA RUGULOSA.

From G. H. Cave, Darjeeling, India. Small tree with grayish brown branches. Wood is of reddish color, moderately hard, evenly grained, durable and seasons well. Weighs about 41 pounds per cubic foot and is easily worked. Used in the manufacture of bowls, milk pails, churns, cups and tobacco boxes.

41031. BRASSICA CHINENSIS.

Cabbage. From C. H. Deal, Songdo, Korea. A Korean cabbage, called by the natives *pachoo*. The leaves resemble those of a turnip. The stems are stocky and bleach beautifully. It should be planted in late summer in rich soil. It is not gathered until after the first light frost and before the first heavy freeze.

BRASSICA PEKINENSIS.

Pe-tsai or Chinese Cabbage. From various sources in North China. A fall cabbage, **NOT SUITABLE FOR SPRING PLANTING** as it goes to seed. Sow in July in rows; begin manuring heavily when four inches high. Harvest after first light frost; heads long, cylindrical, not very firm. By cutting off all green leaf tips it can be cooked without penetrating cabbage odor.

36967. BROMELIA SP. Grava-

ta. From near Bahia, Brazil. A bromeliaceous plant allied to the pineapple. Fruits translucent, pale straw colored, 3 inches long and somewhat angular, with crisp, juicy flesh that is spicy and delightfully acid. Small, flattened seeds. Before eating the fruit the very acid skin must be carefully removed to avoid burning the lips and mouth.

32924. CAJUPUTI CUTICULARIS. From Alwyn Berger, La Mortola, Ventimiglia, Italy. Tall shrub or small tree with tortuous, somewhat rigid branches; the bark deciduous in paper-like layers, opposite thick leaves 1-4 to 1-2 inches long. Male flowers usually in terminal heads; the perfect flowers occasionally in dense oblong or cylindrical spikes, yellow. Native of Dutch East Indies. Formerly known as *Melaleuca cuticularis*.

32928. CAJAPUTI PULCHELLA. From Mr. Alwyn Berger, La Mortola, Ventimiglia, Italy. Low spreading shrub, with slender, somewhat pendulous branches; scattered, slightly aromatic leaves 1-6 inch long, and extremely beautiful, inodorous purplish flowers, commonly appearing in clusters of two or three a short distance from the end of the branches, though occasionally terminal. Formerly known as *Melaleuca*.

38329. CALOPOGONIUM ORTHOCARPUM. "Corda de Viola." From B.H. Hunnicutt, Lavras, Minas, Brazil. Twining sub-shrubby leguminous plant with long petioled leaves composed of three nearly ovate leaflets, and blue flowers similar to small sweet peas. The small pods are densely hairy, and the seeds are nearly rectangular in outline. A native of South and Central America and the West Indies.

CANARIUM COMMUNE.

Java Almond. A large handsome Malayan tree with buttressed trunk. Bears an abundance of purple fruits the size of small plums. The kernels are edible and resemble almonds in flavor. Oil expressed from seeds is used in cooking. Desirable for avenue planting. Thrives in hot moist districts, suitable for extreme south only.

40157. CARAGANA AURANTIACA.

From the Royal Botanic Gardens, Kew, England. Deciduous shrub 4 feet high, with graceful, ultimately pendulous, leafy branches, armed with triple spines 1-4 inch long. Leaves nearly sessile, composed of four narrow leaflets 1-3 to 1-2 inch long. Orange-yellow flowers 3-4 of an inch long, produced in great profusion from under side of branches. Easily propagated by late summer cuttings.

40158. CARAGANA FRUTEX.

From the Royal Botanical Gardens, Kew, England. A deciduous, leguminous shrub, up to 10 feet in height, having long, supple branches, not much divided except near the ends. The leaves are each composed of two pairs of leaflets. Flowers bright yellow. A graceful shrub in habit, and very handsome when in flower.

CARICA CANDAMARCENSIS.

Mountain Papaya. Colombian tree, smaller than *Carica papaya*; presumably hardier, with much smaller, more angular fruits of too acid a flavor for dessert, though very agreeable when stewed: also used for jams and preserves. Ripe fruit has a pleasant, apple-like odor. Introduced for test of papain quality and for hybridization with *Carica papaya*.

CARICA PAPAYA. P a p a y a .

Rapid growing fruit tree, reaching twenty-five feet; in ten months bears numerous melon-shaped fruits on its trunk. Good varieties deliciously sweet with characteristic flavor; relished as breakfast fruit. Easily digested, containing powerful papain ferment. Try as annual in northern Florida and Texas. Easily grown in hot-house. Both sexes required.

CARISSA GRANDIFLORA.

South African Amatungulu. A handsome apocynaceous spiny shrub with glossy green leaves, white fragrant flowers and ovoid scarlet fruits an inch long. Useful home garden fruit with a flavor when stewed peculiarly like that of cranberries. Fruit may be dried like prunes. A most attractive evergreen hedge plant. Stands clipping well and spines make it quite impenetrable.

CASIMIROA EDULIS. White Sapote. This tree is native to Mexico, grows to a height of 40 or 50 feet and has a large, round head of evergreen leaves. The pale-yellow fruits, sometimes 3 inches in diameter, are edible and have a rich, sub-acid flavor.

CASTANEA MOLLISSIMA. Chinese Chestnut. From north China. Collected by Frank N. Meyer from old trees in a region where the chestnut bark disease has probably existed for centuries. High degree of resistance but not entire immunity probable. Hardy tree, not valuable for timber, being only 40 feet tall and low-branching. Nuts larger than American, but not so sweet.

CASTANEA PUMILA X C. CRENATA. Hybrid Chestnut. A hybrid between the American chinquapin and the Japanese chestnut. Produced by Dr. Walter Van Fleet, Chico, California. Good producer and strongly resistant to the chestnut bark disease. Nuts of fair quality intermediate in size between the chinquapin and Japanese chestnut.

37900. CELTIS SP. A tree about 30 feet high and sometimes spreading in habit, related to our native hackberry, found growing on the river banks in Pirapora, Minas, Brazil. The small, orange-colored fruits, about one-fourth inch in diameter, are edible and eagerly sought after by the boys.

40755. CERATOSTIGMA PLUMBAGINOIDES. Collected by F. N. Meyer, near Siku, Kansu, China. A pretty semi-woody perennial with deep blue flowers, found in dry, rocky places and along slate ledges, at an altitude of 4500 feet above the sea. Of value as a striking rockery plant. Adapted to the cooler regions of the United States.

38601. CEREUS TRIANGULARIS. Pitaya. From Guatemala City, Guatemala, through O. F. Cook. A climbing cactus with triangular stem; cultivated in tropical America for its refreshing fruit which is egg-shaped and filled with sweet, deep crimson pulp of the consistency of watermelon and containing many small black seeds. Adapted to the South or southern California.

**CHAENOMELES CATHAY-
ENSIS.** From F. N. Meyer, China.

A shrub or small tree, the fruits of which are prized for their strong pleasant aroma. Used in China for perfuming rooms; also for preserves. Leaves turn rich scarlet in the fall. Probably not hardy north of Philadelphia, except in sheltered locations. Known also as *Cydonia cathayensis*.

**40550. CHAETOSPERMUM
GLUTINOSA.** From Wm. S. Lyon,

Manila, P. I. A Philippine tree allied to Citrus, and recommended for trial in semi-arid regions as a stock for the cultivated citrus fruits. Occurs on gravelly hillsides almost devoid of rainfall during seven months of the year. It is probably susceptible to frost.

40392. CHALCAS EXOTICA.

Orange Jessamine. From W. J. Tutch-
er, Hong Kong, China. A small
rutaceous tree with pale bark and pin-
nate leaves. Leaflets 5 to 9 inches,
dark green above, paler below. The
panicles of white bell-shaped flowers
are very fragrant. Fruit, small red
berry, 2-5 to 1-2 inch long. Grown in
greenhouses on account of the abund-
ant fragrant flowers. Being tested as
stock for citrus fruits.



Colocasia esculenta, the dasheen, as grown in a five-acre field at the Brooksville Field Station. The dasheen does excellently in some parts of the South on soils where the potato would fail.

CITRULLUS VULGARIS.

Watermelon. Melon seeds, even from excellent fruits, are so apt to give disappointing results, either through having been cross-pollinated, or because of the new environment, that descriptions of them are likely to be misleading. Seeds from Chinese, Roumanian, Siberian and Caucasian sources are on hand and will be supplied to experimenters under name and number on request.

CITRUS AURANTIFOLIA.

From Dorsett, Shamel and Popenoe, Bahia, Brazil. Sweet lime, Col. F. da Costa's grove. A fruit about the size of a lemon and similar in appearance, but of very sweet flavor. Highly esteemed by the Brazilians. Tree very productive.

CITRUS AURANTIUM.

From Dorsett, Shamel and Popenoe, Bahia, Brazil. *Laranja da terra* or bitter orange, the chief species used in Brazil as a stock for the navel orange and other cultivated citrus fruits. Probably the same as the sour orange of Florida, but worthy of trial for possible differences.

36698. CITRUS GRANDIS.

From Dorsett, Shamel and Popenoe, Bridgetown, Barbados, B. W. I. A large fruited pomelo with rather coarse flesh and numerous seeds, introduced for trial as a stock for cultivated citrus fruits.

CITRUS HYSTRIX. From P. J.

Wester, Lamao, Bataan, Philippine Islands. A thorny tree, 20 to 40 feet high, with broad bladed leaves 6 to 10 inches long. The smooth, greenish lemon-colored fruits are aromatic, juicy and sharply acid, making a fair "ade" and are often used for cleaning clothes. For trial as a citrus stock.

23028. CITRUS LIMONIA.

Lemon. From F. N. Meyer, Fengtai, China. Dwarf, ornamental lemon, cultivated by the Chinese as a decorative plant in the winter. Small pot plants are frequently observed with a dozen large lemons on their branches. Readily propagated from cuttings. For testing as an ornamental and for breeding experiments in this country.

39580. CITRUS MEDICA ODORATA. From P. J. Wester, Lamao, Bataan, P. I. *Tihi-tihi*, a shrub whose leaves analyze 0.06 per cent. of essential oil. Fruits in three years from seed, but the fruits are not edible. For trial in regions practically free from frost.

CITRUS SINENSIS. From Dorsett, Shamel and Popenoe, Bahia, Brazil. Navel orange, from the native home of this fruit. Selected types from trees of superior productiveness and fruits of excellent quality. Introduced for trial in orange growing districts in comparison with types of navel oranges now under cultivation.

37084. CITRUS SP. From A. C. Hartless, Saharanpur, India. Sylhet or Rungpur lime, a vigorous, productive tree. The fruit is oblate in form, loose-skinned, the size of a small mandarin orange, and has juicy orange-colored flesh and skin. It is extremely sour and used in the same ways as the ordinary lime.

39581. CITRUS SP. From P. J. Wester, Lacao, Bataan, P. I. Reported as a shrub that fruits the second year from seed and is exceedingly prolific. The fruit is dry and seedy but the plant may prove useful in hybridization work for the production of dwarf and precocious varieties.

38708. CLAUCEA LANSIUM. Wampee. From Honolulu, Hawaii, through E. V. Wilcox. Seedlings from the place of A. J. Campbell. Low, spineless, very odorous tree related to citrus, upon which it can be grafted. Fruit the size of gooseberries, pubescent, with balsamic fragrance; rather a condiment than a dessert fruit. Grows well in Florida. Should be tested as stock for citrus.

22620. CLEMATIS RECTA MANDSHURICA. From Frank N. Meyer, Shinglungshan, China. Herbaceous perennial, 2 to 3 feet high, with erect stems terminating in panicles of large white flowers. For testing as an ornamental or as a cut flower plant.

40704. CLEMATIS SP. From F. N. Meyer, near Tan Chang, Kansu, China. A bushy species with yellow flowers, found amidst dry rocky debris at 5000 to 7000 feet elevation. For trial as a border shrub in dry regions.

**40066. CLETHRA BARBIS-
NERVIS.** From Japan, through E. H. Wilson. A deciduous shrub of the heath family, up to 6 feet high. Leaves often clustered at the end of the twigs, oval or obovate, 2 to 5 inches long. Flowers white, produced from July to September, in a rather compact terminal panicle 4 to 6 inches long, covered with white, starry down. Not so hardy as our native *C. alnifolia*.

**35141. COCCOTHRINAX GAR-
BERI.** Teyer Tree. From Charlotte Amalia, St. Thomas, W. I. Presented by Dr. J. N. Rose. Fan-leaved palm, common in the Virgin Islands and much prized as an ornamental. A slender tree with terminal leaves, pale below, thin and brittle, divided into narrow sword-shaped segments.

COCOS CORONATA. Nicuri Palm. Collected by Messrs. Dorsett, Shamel and Popenoe, Bahia, Brazil. A palm 20 to 30 feet high, usually presenting a somewhat straggly appearance due to the leaves being whipped and torn by the wind. The old leaf bases adhere to the trunk, and being arranged spirally, give it a curiously twisted appearance. The leaves are glaucous and graceful when not torn.

37745. COCOS ROMANZOFFIANA. From Dr. J. C. Willis, Rio de Janeiro, Brazil. A tall, striking palm, 30 to 40 feet high, leaves 15 to 20 feet long with rigid sword-shaped leaflets. The withered leaves are deflexed and pendent; the upper leaves, spreading, often arched. Spadix about 6 feet long, at first enclosed in a stout pendulous spathe, which appears among the lower leaves.

COLOCASIA ESCULENTA. Dasheen. From various West Indian and East Indian sources. Large-leaved aroid, related to the taro and the elephant ear, producing numerous small tubers around a large central one. These, when cooked, are as palatable as potatoes, richer in protein, and with a nutty flavor. Twenty-five hundred people are growing them in the South.

22471. CORYLUS AVELLANA.

Filbert, *Bysance*. From Mrs. Felix Gillet, Nevada City, California. The strongest and most vigorous grower of all the filberts. Differs considerably from the others in leaf characters and in possessing a rather corky bark. Valuable as grafting stock. Originally imported by Felix Gillet from the Mediterranean region.

22486. CORYLUS AVELLANA.

Barcelona Filbert. Introduced by Felix Gillet, Nevada City, California. Tree of upright medium growth. Good producer. Blooms about first week in January in Oregon. The husk is short hispid; the nut large, ovate, slightly compressed; shell moderately thick, and rather hard; but well filled by the kernel, which is of very good quality.

35689. CORYPHA ELATA.

Palm. From Manila, Philippine Islands, through O. W. Barrett. Large, tropical, fan palm, related to the famous Talipot palm of Ceylon. Grows 70 feet tall and then produces immense bloom and dies. Leaves of very large size used for fans, etc. A very decorative palm for regions like Panama, Porto Rico, and, possibly the Isle of Pines. Coryphas do poorly in Florida.

35930. COTONEASTER SP.

From Llifén, Chile. Presented by W.F. Wight. A plant with small glossy leaves and sharp thorns. It produces an abundance of small blue berries and should make a very attractive hedge.

**36661. COUTAREA HEX-
ANDRA.**

Quina de Pernambuco. Small, deciduous, ornamental tree from woods of Paraguay and Brazil, growing to 20 feet in good soil and said to possess medicinal properties similar to cinchona. Covered in spring with sweet yellow flowers. Withstands temperature of 25° F.

**28606. CROTALARIA CAN-
DICANS.**

From Dr. J. C. Willis, Peradeniya, Ceylon. A leguminous plant of erect habit of growth, 3 to 4 feet tall, bearing masses of ornamental, bright yellow flowers. The plants thrive best in a light, rich soil and are recommended as cover crops and soil renovators and for trial as ornamentals.

CRYPTOSTEGIA GRANDIFLORA. Charming woody climber of the milkweed family, growing about 10 feet high, and bearing cymose inflorescences of deep rose-colored flowers, 2 inches across. Yields a fine elastic rubber, 64 per cent. caoutchouc. Cultivated in India. Should be tested on rich soils of Florida where it grows luxuriantly, to ascertain if rubber can be obtained from it commercially.

CUCUMIS MELO. Muskmelon or Canteloupe. Varieties of muskmelon more or less accurately described have been received from many countries, and selections of these will be sent out for trial to applicants having facilities for experimenting with them. Seeds are from Spain, Persia, China, Bolivia, Peru, Greece, Russia, Turkestan, Turkey, Brazil, Malta and Egypt. Descriptions will accompany seeds.

37132 AND 37133. CUCURBITA PEPO. Squash. From Dr. Gustav Eisen, Rome, Italy. A peculiar kind of squash which is eaten green and while the flower is yet adherent to the fruit, and never when the fruit is ripe. It is most delicious when boiled and seasoned with fresh butter, and is fully equal to tender green peas, though of a different flavor.

**36986. CUDRANIA JAVAN-
ENSIS.** From S. J. Tutcher, Hong-
kong, China. A thorny shrub or tree,
which can be utilized for hedges. Re-
lated to Osage Orange. Fruits bright
orange; one inch in diameter; sweet,
rather insipid flavor, but quite as
good as many others which are eaten.
Possibly new hybrids may be pro-
duced with Osage Orange, or the
Chinese *Cudrania tricuspidata*.

**34493. CUDRANIA TRICUS-
PIDATA.** Che or Tcho Sang. From
central China, collected by E. H. Wil-
son. Close relative of Osage orange,
with which very vigorous hybrid has
been made in France. Leaves con-
sidered superior to mulberry for silk-
worms, making finer silk. Fruits
pink, size of large plum; edible, sweet,
but without much character. Hardy
in Georgia.

37383. CUPRESSUS SP.
Cypress. Collected by Messrs. Dorsett,
Shamel and Popenoe, Lavras, Minas,
Brazil. A handsome evergreen of
somewhat compact, symmetrical habit
with graceful slender branchlets and
aromatic glaucous foliage. The tree
from which cuttings were made was
about 20 feet high. A valuable or-
namental.



Colocasia esculenta, tubers of the dasheen of a size suitable for marketing. These tubers may be cooked in the same way as potatoes.



Diospyros kaki, the "lotus-flower" persimmon of northern China, a seedless persimmon, marked by peculiar furrows around the base and across the top of the fruit. Not hardy in the northern United States.

33213 & 33214. CYDONIA OBLONGA. Quince. From Pedro Giraud, Granada, Spain, 1912. Antequera. Oblong variety, smooth and well formed, with fine, mellow flesh, considered the best of all varieties of quinces. Spanish quinces are famous for their high quality and the best are said to come from Antequera.

40177. DEUTZIA OBLONGIFOLIA. From the Royal Botanical Gardens, Kew, England. A deciduous shrub, 4 to 6 feet high, distinguished from related species by the narrower leaves and the purplish-rose flowers. It is one of the finest of the Chinese Deutzias, with its large and richly tinted flowers. Collected by E. H. Wilson.

38696. DICTYOSPERMA ALBA RUBRA. From G. Regnard, Port Louis, Mauritius. Palm attaining a height of 50 feet. Leaves of young plants have dark red margins that lose color as they grow older. The young plants with their equally pinnatisect, red margined leaves, are very attractive and lend themselves readily to house and table decoration. The terminal bud or "cabbage" has a very delicate flavor.

16921. DIOSPYROS KAKI.

Tamopan Persimmon. From F. N. Meyer, Ming Tombs Valley, near Pekin, China. Fruit thick-skinned, seedless as grown in China, sometimes 4 inches in diameter with characteristic furrow around it. In China uniformly nonastringent as soon as mellow but while still firm. In America often astringent for reasons not yet understood. May prove hardy as far north as Washington, D. C.

21910. DIOSPYROS KAKI.

From F. N. Meyer, Pangshan, Chili, China. Reported to be rare; fruit flat, of medium size, 2 to 3 inches in diameter; color, orange-red; skin, thin; quality, good; a good keeper, but not a good shipper.

22368. DIOSPYROS KAKI.

Persimmon. From F. N. Meyer, Taidjatsoa, west of Pautingfu, Chili, China. A rare small-fruited yellow persimmon of slow growth. The trunk has a whitish bark.

DIOSPYROS LOTUS. Compact-growing tree, 20 to 50 feet high, with oblong pubescent, sometimes glabrous, leaves and reddish, white or yellow flowers. The edible, globular fruits are brown or black when ripe and less than one inch in diameter. Extremely drought and heat resistant and useful as stocks for improved, large-fruited varieties of persimmons, especially in dry, hot regions of this country.

35084. DIOSPYROS MONTANA. Persimmon. From Colombo, Ceylon, through C. Driberg. A tree often with spines on trunk and large branches. Young branches softly pubescent; male flowers in three-flowered cymes or panicles; female flowers solitary. Fruit globose, one-half to one and one-half inches in diameter, glabrous and shining. Bees very fond of flowers. Probably tender,

40097. DIPHYSA SUBEROSA. Chipillicoite. From Gabriel Itie, San Juan Bautista, Tabasco. A leguminous tree with odd-pinnate leaves, short racemes of yellow pea-like flowers, and more or less inflated pods. Wood used for telegraph poles, sleepers, etc.; very durable and exceedingly resistant to damp, decay, and insects.

DOMBEYA PUNCTATA.

A small sterculiaceous tree, native to Mauritius, with smooth firm leaves orbicular, and deeply cordate, 3 to 4 inches long, slightly wavy margined. The rose-colored flowers are arranged in umbels of 10 to 20 blossoms each. Reported hardy in southern California. Seems to promise well for lawn and park planting in the south. A rapid grower.

DURANTA REPENS.

Golden-dewdrop. Variable shrub or small tree with nearly oblong leaves; attractive white or lavender flowers in drooping racemes, followed by an abundance of small, orange-colored fruits. Frequently blossoms and fruits are present at the same time. Plant native of tropical America. Family Verbenaceae.

DURIO ZIBETHINUS.

Tall tree of the Malayan region, producing the fruit known as Durian. Renowned throughout the Asiatic tropics. The fruit is oval, 3 or 4 pounds in weight, with a hard prickly rind and pale brown pulp of custard-like consistency. Exceedingly rich in flavor but with a foetid odor disagreeable to some. Suited only to strictly tropical regions.

ELAEAGNUS ANGUSTIFOLIA.

Oleaster. Very ornamental, deciduous shrub or small tree, from western Asia, with narrow, willow-like leaves and small, fragrant yellow flowers. The sweet, edible fruits are reddish-brown and resemble slightly a small date.

ELAEIS GUINEENSIS.

African Oil Palm. Vast numbers of this palm occur wild on the west coast of Africa and supply a great industry in palm oil. Seeds from the so-called "Sombo" variety have a small nut with thick meat and yield a large amount of oil.

ELEPHANTORRHIZA ELEPHANTINA.

From Transvaal, South Africa. Presented by J. Burt-Davy. Small, shrubby plant with large club-shaped roots which are exceedingly rich in tannin. The foliage is eagerly eaten by cattle. The seeds ripen in the pods after the stems have been killed by frosts. Should succeed in south Florida.

37604. ELEUSINE CORA-
CANA. African Millet. From the
Agricultural Experiment Station, Vic-
toria, Kamerun. An erect grass, 2 to 4
feet high, distinguished from the com-
mon wire-grass, *E. indica*, by its stouter
habit and shorter, broader and larger
spikes. Cultivated in southeastern
Asia for the grain.

40074. ENKIANTHUS CAM-
PANULATUS. From the Arnold
Arboretum, collected by E. H. Wilson
in Japan. An ericaceous hardy de-
ciduous shrub, 15 to 30 feet high, doing
well at Boston. Requires the same
general treatment as the hardy azaleas.

35591. ENTEROLOBIUM
CYCLOCARPUM. "Quinacastle."
From Don Nat. O. y Osuna, Noria,
Sinaloa, Mexico. An evergreen shade
and timber tree which grows to great
size, the trunk often being four feet or
more in diameter. The wood is said
to be bug and worm proof and is in
demand for making boxes, chests and
trunks.

EREMOCITRUS GLAUCA.

Australian Desert Lime. Drought resistant, evergreen shrub or small tree, with small, leathery leaves and irregularly formed fruits about one-half inch in diameter, with sweetish, edible peel. The fruits are preserved or the acid juice used for making an agreeable, refreshing drink. Probably the hardiest of all evergreen citrus fruits.

31819. ERUCA SATIVA.

Received through Mr. Frank N. Meyer, Oasis of Sandju, Chinese Turkestan. "Sa-un." A variety of seed, the oil of which is used both for culinary and illuminating purposes. To be tested as a possible crop for the inter-mountain regions.

39740. ERYTHEA EDULIS.

Palm. From W. H. Morse, Santa Barbara, Cal., through O. F. Cook. This is one of the finest of the American palms. Only found in a wild state on the Island of Guadaloupe.

**ERYTHRINA ARBOR-
ESCENS.** Coral tree. From Dar-
jeeling, India. Most conspicuous flow-
ering tree in Darjeeling. Leaves per-
sist while tree is still in flower; do not
fall and leave branches bare. Brilliant
scarlet spikes a foot long, resembling
Royal Poinciana. Wood durable though
light and somewhat open-grained;
does not warp or split; takes a good
varnish. Used for trays, etc.

**38713. EUCALYPTUS CLA-
DOCALYX.** From Angeles National
Forest, Cal., presented by the Forest
Service. A symmetrical, erect Austra-
lian eucalyptus, ranging in height
from 50 to 100 feet. The trunk is con-
tinually left smooth by the flaking off
of the outer bark. Timber very durable
under ground, and suitable for posts,
railway ties, etc

**36621. EUCALYPTUS
STUARTIANA.** Apple-scented
Gum. From Australia, through Forest
Service. Small-sized eucalyptus,
standing low temperature of 10° F.
thriving best along sea coast as wind-
breaks and shade in ravines and on
fairly moist mountain slopes. Timber
hard, durable underground; good for
fuel. Deserves trial farther north than
other species will grow.

37017. EUGENIA LUSCH-NATHIANA. Pitomba. From Bahia, Brazil, through Dorsett, Shamel and Popenoe. Compact, handsome, 20-foot evergreen tree, bearing deep orange fruits one inch in diameter, crowned with persistent calyx; skin thin, enclosing soft, melting, bright orange, juicy flesh, with acid, very aromatic flavor. Cooking rather than dessert fruit, making excellent jellies.

EUONYMUS JAPONICUS. From F. N. Meyer. A densely leafy evergreen shrub or small tree of bushy habit, 10 to 25 feet high, entirely smooth. Leaves obovate to narrowly oval, 1 to 3 inches long, 1-4 to 1-2 inch wide, leathery, dark, polished green. Fruit smooth, globose, 1-3 of an inch across, pinkish. Seed coats pale orange. Is sometimes used for hedges. Hardy only in the south.

EUONYMUS PATENS. Spreading shrub to 10 feet in height, with handsome foliage often remaining on the branches throughout mild winters. Abundant late-ripening fruits pink with orange seeds. This shrub is closely allied to *E. japonicus* but differs notably in the thinner semi-evergreen leaves. Hardy as far north as New York and, in sheltered places in Massachusetts.

40740. EUPATORIUM SP.

From F. N. Meyer, near Siku, Kansu, China. A small shrub, having masses of white-rayed flowers with yellow disks. Found on dry, stony places and in dry pebbly river-beds at an elevation of 4500 feet, and therefore probably of some value as an ornamental flowering shrub for dry regions.

FEIJOA SELLOWIANA.

Ornamental shrub, native of South America, 4 to 8 feet high, with evergreen, pale, glaucous leaves and very handsome flowers. The roundish, or elliptical, greenish fruits are highly aromatic and contain a soft, slightly granular meat and a few small seeds. Eaten raw or made into jelly.

39904. FICUS SP.

From F. N. Meyer, Kagoba, Kansu, China. A fig apparently of shrubby nature, found growing among rocks. Leaves elongated with rather rough surface. Collected at an altitude of 6000 feet. Possibly of value in regions where the winters are not very severe.



Litchi chinensis, a favorite southern Chinese fruit, eaten as a fresh or dried fruit and greatly esteemed for its delicate flavor.



Lonicera maackii, a very ornamental spreading, shrubby, honeysuckle, with white flowers tinted pink, turning yellow with age.

37004. FORSYTHIA SUSPensa. Golden Bell. From Pekin, China, collected by F. N. Meyer. This variety is said to have flowers larger than the kind commonly grown. It is very resistant to drought and able to stand a fair amount of alkali in the soil. Should prove of especial value as an ornamental in the drier sections of the United States.

37477. FORSYTHIA SUSPensa. Golden Bell. Collected in the province of Shansi, China, by F. N. Meyer. This variety was found growing in dry rocky places, at an altitude over 5000 feet. Should prove well adapted to the drier regions of the United States.

39115. FRAXINUS FLORIBUNDA. Ash. From G. H. Cave, Darjeeling, India. Small tree up to 25 feet, with dense terminal panicles (3 to 5 inches long) of fragrant, whitish flowers. Exudes a saccharine product very similar to the manna obtained from *F. ornus*, and used as a substitute for the latter. Wood white, with reddish tinge, is used for oars, poles, plows, wheels, etc. Considered very valuable.

38050. FUCHSIA PROCUMBENS.

From D. Petrie, Epsom, Auckland, New Zealand. Trailing Fuchsia. Slender much-branched, prostrate plant 6 to 18 inches long, with alternate, cordate-ovate leaves 1-2 to 3-4 inch long and 1-3 to 1-2 inch wide. Flowers solitary, axillary, apetalous, 1-2 to 3-4 inch long; the short tube orange and the reflexing obtuse lobes purple; anthers blue. Berries red. Suitable for basket culture.

36497. GARCINIA OBLONGIFOLIA.

From Wm. J. Tutcher, Hong Kong, China. A tree related to the famous mangosteen, which because of its habitat in a subtropical, much cooler climate than that to which the mangosteen is supposed to be confined, may prove suitable as a stock for the latter in Hawaii, Porto Rico or even Florida. Apparently indigenous to Island of Hong Kong.

GARCINIA TINCTORIA.

Medium sized evergreen tree from East Indies. Foliage glossy, handsome. Fruit edible, eaten fresh or dried and used in medicine. Bark used to prepare bright yellow dye. The tree yields an inferior grade of gamboge. Of interest in connection with mangosteen breeding in tropical America.

GLEDITSIA SINENSIS. Soap Bean. From China. Leguminous tree to 40 feet in height. Leaves 5 to 7 inches long, 8 to 18 foliolate, yellowish green, dull above. Pods contain saponin, used by Chinese for soap to wash hair and certain fabrics. Tree forms beautiful well-rounded heads. Strongly drought and somewhat alkali-resistant. An ornamental shade or park tree for mild-wintered semi-arid regions.

39331. GLIRICIDIA SEPIUM. Madre de Cacao. From D. Leroy Toping, Manila, Philippine Islands. Small leguminous tree or shrub with about seventeen entire oblong leaflets to each leaf covered with short appressed hairs above and blackish-spotted below. The rose-colored racemose inflorescences that make the stems a mass of blooms in summer render the young plants favorite house decorations in the tropics.

35249. GONOLOBUS EDULIS. From Ad. Tonduz, San Ramon, Costa Rica. An asclepiadaceous twiner, having yellow flowers in small racemes, and long, longitudinally winged, edible fruits, pointed at both ends, eaten while still soft.

34289. GOSSYPIMUM HIR-SUTUM. Cotton. From the Agricultural College, Coimbatore, India, through Prof. C. V. Piper. This cotton is said to have been introduced from Cambodia into South India, where it has yielded far more heavily than any other cotton. It is of the American Upland type.

26319. GREIGIA SPHACELATA. "Chupon." From Mr. Jose D. Husbands, Limavida, Chile. A bromelia-like stemless plant with densely clustered sword-shaped leaves resembling those of the pineapple. The flowers are purplish and the fruit is fragrant and wedge-shaped, with pleasantly flavored sweet juice. It grows in a comparatively moist climate.

36705. GREVILLEA BANKSII
From Messrs. Dorsett, Shamel and Popenoe, Rio de Janeiro, Brazil. Small broad-topped evergreen tree, somewhat similar to the Silk-oak, *G. robusta*, 12 to 20 feet high, with rough ashy brown bark, deeply pinnatifid leaves 6 to 8 inches long and 5 to 6 inches wide, dull green above, silvery beneath and numerous racemes, 3 to 5 inches long, of beautiful rose-red flowers. Native of Australia.

40047. HAKEA ACICULARIS.

From J. H. Maiden, Sydney, Australia. Tall evergreen shrub or small bushy tree with sharp-pointed awl-shaped leaves and white flowers. Easily grown, strongly drought-resistant, self-protective. Of value as an ornamental for parks, depot-grounds, and as an impenetrable hedge. Suitable also as a covering for dry hillsides, although not deep-rooted. Endures only moderate frosts.

40050. HAKEA LEUCOPTERA.

From J. Maiden, Sydney, Australia. An evergreen proteaceous shrub or occasionally small tree, usually 5 to 8 feet high, but sometimes attaining 25 feet. Flowers white. The wood is coarse grained and soft, takes a good polish, and is considered valuable in the manufacture of pipes and cigarette holders. Is also used as a veneer. Grows in arid districts of Australia.

40746. HEDYSARUM SP.

From F. N. Meyer, near Liang sui, Kansu, China. A low growing perennial herb, found in dry, stony places. Produces large spikes of beautiful rose-colored flowers, followed by spiny seed pods. For trial as an ornamental plant and also as a possible forage crop in dry regions.

HIBISCUS MUTABILIS.

Japanese Rose Hibiscus. A strikingly handsome malvaceous shrub or small tree, 15 feet or more high, with large cordate light green leaves, and great numbers of axillary rose-colored flowers often over 4 inches in diameter. Has been introduced into Florida as the "Cotton rose" or "Confederate rose."

HIBISCUS SABDARIFFA, Roselle or Jamaica Sorrel.

Biennial, 3 to 5 feet high, commonly cultivated in warm countries. Produces an abundance of large, bright red calyces in autumn. These, as well as the young leaves, are considered by many as superior to cranberries for sauce and jelly making. Very ornamental when in bloom and in fruit. Sensitive to frost.

3310. HOVENIA DULCIS.

Raisin Tree. From Blidah, Algeria. Through Walter T. Swingle. Small, ornamental, deciduous tree; native of China. Fruits about the size of peas are seated on the ends of fleshy fruit stalks, which latter are extremely sweet and resemble raisins in flavor. Used in wine making. From cuttings of seedlings from large tree bearing enormous quantities of fruit.

38565. HYMENAEA COURBARIL. From O. F. Cook, Guatemala City, Guatemala. Handsome tree with curious compound leaves consisting of two leaflets. Similar to Bauhinia but leaflets not united. The thick woody shells of the large pods contain a resin said to be used in the manufacture of varnish. Seeds packed in a thick layer of grayish powdery substance tasting like licorice root, commonly eaten and often sold in the markets.

HYPERICUM PATULUM.
St. John's-Wort. Anevergreenspreading shrub, 1 1-2 to 3 feet high, with many smooth purplish two-edged branches, nearly ovate leaves, 1 1-2 to 2 inches long, and large numbers of bright golden yellow flowers about 2 inches across, with many long stamens borne singly or in terminal clusters. A native of Japan, China and the northern part of India. A semi-hardy ornamental.

34219. HYPHAENE THEBAICA. Doum Palm. From R. P. Skinner, American Consul-General, Hamburg, Germany. A showy fan-leaved unarmed palm, with striking yellow fruits. The only true palm with a regularly branched trunk. The trunk is robust, cylindrical, and bears large terminal orbicular leaves with sword shaped leaflets. The seeds are used by German button manufacturers as a cheap substitute for vegetable ivory.

37921. HYPTIS LONGIPES.

From Messrs. Dorsett, Shamel and Popenoe, Joazeiro, Bahia, Brazil. Trailing plant forming close mat of stems on the sand. May be used in southwest as sand binder. Flowers borne in heads 1 inch in diameter and 6 inches above the ground are bright purple in color and present a very ornamental appearance.

39688. ILEX INTRICATA.

From Royal Botanical Gardens, Calcutta, India. A low, straggling shrub from Sikkim and Nepal, at altitudes up to 11,000 feet. Woody and rigid, forming matted masses. Flowers very small, followed by sessile globose fruits, red in color.

36760. INCARVILLEA SINENSIS.

From Fangshan, Chili, China, through Frank N. Meyer. A low, tender, ornamental perennial, belonging to the bignonia family, with long spikes of pretty, carmine-rose colored flowers. These probably will require more winter protection than that generally given herbaceous perennials. Test as dooryard and garden shrub through the south.

INDIGOFERA AMBLYANTHA.

From the Botanic Gardens, La Mortola, Ventimiglia, Italy. Collected by E. H. Wilson in Central China. A pleasing leguminous shrub, bearing erect racemes of rose-pink flowers. Flowering from mid-July until late autumn. Should prove a handsome ornamental; not sufficiently hardy to endure the northern winters.

40183. INDIGOFERA GERARDIANA.

From the Royal Botanical Gardens, Kew, England. Deciduous leguminous shrub, native of the Himalayas. Leaves odd-pinnate, with 13 to 21 leaflets 3-8 to 5-8 inch long, with gray appressed hairs on both sides. Bears racemes, 3 to 5 inches long, of two dozen or more, short stalked, pea-shaped rosy-purple flowers. Its luxuriant foliage and great beauty make it a favorite late flowering shrub.

18609. INDIGOFERA KIROLWII.

From Shan hai kwan, China. Collected by Frank N. Meyer. A hardy, shrubby perennial with delicate, feathery foliage and bearing in early summer masses of beautiful pink flowers in long racemes, suitable for doorway planting in cities and for park and garden effects. Belongs to the pea family.

39610-39617. IPOMOEA BATATAS. Sweet Potato. From the Agricultural Experiment Station, Santiago de las Vegas, Cuba. These varieties have proved among the best of a large collection tested by Sr. Juan T. Roig at Santiago de las Vegas. Worthy of trial in the sweet potato growing regions of the United States.

37917. IPOMOEA FISTULOSA. Bush Morning Glory. From Oliveira, Bahia, Brazil, through Dorsett, Shamel and Popenoe. Shrub common along the banks of the Rio Sao Francisco and in low, wet places, growing to 15 feet in height. Slender branches; flowers funnel-shaped; 4 inches across; lilac-red, abundant bloomer. In California and Florida a desirable garden ornamental.

IPOMOEA HORSFALLIAE BRIGGSII. Beautiful evergreen morning-glory with masses of showy carmine colored fleshy flowers, native of tropical America. A most attractive climber for porches and pergolas in Florida and California. In temperate climates successful in greenhouses or out of doors, if potted plants are plunged in ground in sunny location after spring frosts are over.



Maytenus boaria, a Chilean shrub, well adapted for ornamental purposes, as well as for hedges in mild climates. Does well under dry adverse conditions.



Macadamia ternifolia, the Queensland nut, a very ornamental but tender nut tree, with very hard-shelled nuts about the size of large filberts. The kernels are of excellent quality.

39019. IRIS CLARKEI. From L. J. Mackintosh, Darjeeling, India, through J. F. Rock. Grows at an altitude of 6,000 to 11,000 feet, in a limited area in northwestern India. Flowers purple or blue. The plant is found in swampy land and should do best in damp, rich soil.

38154. JASMINUM FLORIDUM. Jasmine. From La Mortola, Ventimiglia, Italy. Nearly evergreen shrub of rambling habit, with smooth angled branches and alternatè leaves of 3 to 5 nearly oval leaflets, 1-2 to 1 1-2 inch long. Flowers golden yellow, borne in terminal cymose clusters, usually produced from July until late in the fall. Black fruits are about the size of small peas. Native of China. Hardy as far north as Washington.

39120. JASMINUM HUMILE. Jasmine. From G. H. Cave, Darjeeling, India. Diffuse shrub, attaining a height of 20 feet in the south, but in glass houses usually grown as a pot-bush. Branches glabrous, angled. Leaflets 3 to 7, nearly oval. Bright yellow flowers borne in open clusters. This plant is somewhat hardier than *J. floridum* but is very similar in appearance. Blooms in summer and fall. Needs cool house if grown under glass.

JUGLANS REGIA SINENSIS.

Walnut. From F. N. Meyer, China. This tree has been erroneously called the "Manchurian Walnut," because it is found near the Great Wall of China. It is really merely a strain of the English or Persian Walnut. Preliminary tests indicate that it is hardier than the strains from southern Europe and northwestern Asia, and can possibly be utilized farther north.

18577. JUNIPERUS CHINENSIS.

Chinese Juniper. From Shan Hai Kwan, China, through Frank N. Meyer. Seedling from trees of this hardy species found growing on a very exposed dry place. As there are many forms of this species, these may prove to be especially picturesque shaped trees. The species is one of the most beautiful for dooryard and garden planting.

JUNIPERUS PACHYPHLOEA.

Checkered Bark Juniper. From New Mexico and Arizona. An ornamental conifer often 60 feet high, with small bluish leaves and spreading branches. The light wood is soft and close-grained. The thick, brown bark is divided into scale-like plates. Fruit edible, mealy, 1-2 inch long. For ornamental planting in dry, mild-wintered regions.

KOKIA ROCKII. From J. F. Rock, Honolulu, Hawaii. Almost extinct relative of the cotton, and for breeding purposes should by all means be saved from extinction. A tree 15 to 25 feet high, found growing on exceedingly arid land and bearing large scarlet flowers of striking beauty. The seeds are covered with short dark brown cotton, resembling the so-called Peruvian cotton.

LAGENARIA VULGARIS, South African pipe gourd.

Annual vine suitable for growing south of New York. To make pipes let gourds mature, cut off crooked necks, clean inside and scrape outside, fit with plaster or meerschau bowl and rubber mouthpiece, as described in Circular No. 41, Bureau of Plant Industry. Culture like that of cucumber. Straw under growing gourds prevents decay.

LAGERSTROEMIA SPECIOSA. Crape Myrtle. From the Philippine Islands. A shrub or tree 10 to 25 feet high, of the loosestrife family. It produces an abundance of pink fringed flowers in spring and summer. Valued as an ornamental throughout the tropics and warmer temperate regions. Also considered valuable for its wood. Strong grower, hardy as far north as Baltimore. Known also as *L. indica*.

31102. LALLEMANTIA IBERICA. From Haage & Schmidt, Erfurt, Germany. A drought-resistant labiate, growing wild on rugged mountain slopes in Asia Minor, Persia and Palestine. It is cultivated in southern Russia for the high grade drying oil yielded by its seeds.

33319. LARIX DAHURICA. Larch. From D. D. Romanoff, Torchok, Russia, through F. N. Meyer. Forms large forests in Manchuria and Eastern Siberia. A valuable timber and ornamental tree, reaching 80 feet in height. It can be clipped and pruned for use in formal gardens.

LAWSONIA INERMIS. "Henna Plant." Rapid-growing, ornamental, evergreen, tropical shrub, 6 feet high, with glaucous leaves and small yellowish flowers, produced in large, showy panicles, exhaling a strong fragrance, especially at night. They contain a volatile oil used in perfumery. Recommended for hedges and ornamental purposes.

LEUCAENA GLAUCA. From C. D. Stearns, Pago Pago, American Samoa. An unarmed acacia-like shrub or small tree, with globular heads of whitish flowers. Propagates readily from cuttings. For this reason and because cattle do not relish the leaves, it is a favorite hedge plant in many countries. However, it is reported that boiled crushed seeds are used for fodder in Mauritius.

38807. LIGUSTRUM QUIHOU. Privet. From F. N. Meyer, Shensi, China. Well rounded, deciduous, bushy shrub of somewhat diffuse habit, up to 6 feet high, with narrow leaves 1 to 2 inches long, slender downy panicles of fragrant white flowers and masses of purplish or black fruits that contrast with the fine evergreen foliage. Used as stock for *Olea fragrans* by the Chinese.

LITCHI CHINENSIS. Handsome evergreen tree about 25 feet high, indigenous to South China. Produces in midsummer nearly round reddish fruits, about $1\frac{1}{2}$ inches in diameter, with a rough brittle rind and juicy white flesh of delicious flavor. Important commercial fruit in South China. Fruits are eaten fresh, canned or dried, in which last form they are called "litchi nuts."

39648. LOBELIA ROSEA.

From G. H. Cave, Darjeeling, India. An alternate leaved herb 4 to 12 feet high with suberect, short branches drooping at the tips; very narrow leaves about 6 inches long, and spikes of rose colored or white flowers 3-4 inch across. Native of sub-tropical Himalaya from Kumaon to Bhotan and the Khasia Hills at altitudes of 4,000 feet. Found also in North Bengal and Assam.

40186. LONICERA DEFLEXICALLYX. Honeysuckle.

From the Director of the Royal Botanical Gardens, Kew, England. Strikingly beautiful deciduous shrub, 8 to 10 feet high, of spreading habit. Branchlets drooping. Produces a great abundance of yellow twin flowers, 5-8 inch long, in May and June, displayed to good advantage on the upper side of the long feathery branches. Fruits orange-red. Native of China.

LONICERA MAACKII. Honeysuckle. A beautiful, rapid-growing, flowering shrub, attaining a height of ten feet, with spreading branches, ovate-elliptic leaves, in the axils of which are borne clusters of trumpet-shaped flowers, white on first opening, rapidly turning yellow.

35188. LONICERA THIBETICA. Honeysuckle. From M. Maurice L. de Vilmorin, Paris. A handsome deciduous shrub of low spreading habit when young, forming in the adult stage a dense rounded mass of intertwined branches, 6 feet high and 10 feet through. Leaves dark glossy green above, covered with a dense white felt beneath. In May and June a mass of lilac colored fragrant flowers. Berries red. Native of Thibet.

40185. LONICERA TRICHOSANTHA. Honeysuckle. From the Director, Royal Botanical Gardens, Kew, England. A deciduous bush of vigorous growth and well-rounded, densely leafy habit, 8 feet or more high, the whole plant with a pale grayish aspect. Leaves nearly oval, 1 to 2 inches long, dull gray green above, paler below. Flowers pale yellow, becoming darker, 1-2 to 3-4 inches long. Berries red. Native of China.

36748. LONICERA SP. Honeysuckle. From Frank N. Meyer, Hsiao Wu tai shan, China. A bush-honeysuckle, of large growth and decidedly ornamental habits. Leaves are large, dark green, and set off beautifully the bright red berries borne in pairs on long, erect peduncles. This species is valuable as an ornamental shrub in the cooler sections of the United States.

22982. LOROPETALUM CHINENSE. Chuck mei. From Frank N. Meyer, Soochow, Kiangsu, China. A shrub or small tree related to the witch-hazel and recommended for door-yards, parks and gardens. Its branches are covered in spring with masses of delightfully fragrant, white flowers. These have narrow, ribbon-like petals. In China the foliage is evergreen.

36764. LYCHNIS CORONATA. From Frank N. Meyer, Hsiao Wu tai shan, Chili Province, China. Half-hardy, rather delicate perennial, native of China and Japan (often biennial under cultivation). Summer or spring bloomer. Flowers scattered or in open panicles; very large, sometimes two inches across; brick-red or cinnabar color. Of value in door-yard and garden borders.

MACADAMIA TERNIFOLIA. Queensland Nut. Small, evergreen, nut and timber tree, 40 to 60 feet high, native of eastern Australia, endures light frost. Nuts produced in about seven years from seed, edible, nutritious, with a rich agreeable flavor, much like, but richer than the hazelnut, and with very hard shells. Timber reddish, fine-grained, takes good polish, used in cabinet work, veneers, shingles, etc.

28489. MALUS BACCATA X SYLVESTRIS. A very promising hybrid with the "Baldwin" and "Yellow transparent," by Dr. Walter Van Fleet. Trees very prolific. Fruits 1½ to 2 inches in diameter, slightly flattened at both flower and stem ends, yellow, streaked with red; flesh firm and crisp with strong crabapple flavor. Promises well as shipper and keeper.

27060. MALUS SYLVESTRIS. Afghasian Apple. From F. N. Meyer, Caucasus, Russia. Large, grayish-green apple with one cheek narrowly streaked with red, fresh sub-acid flavor. Picked in late October or early November, they ripen slowly and keep well until late spring. May prove of value for warmer sections of the United States, especially for the Gulf regions.

7104. MANGIFERA INDICA. Amini Mango. A small but unusually attractive variety from Bangalore, India. Oval, compressed, about 8 ounces, bright yellow in color, overspread with crimson. Aroma pronounced, flavor very spicy. The flesh bright yellow and free from fiber. Seems more productive than many Indian mangos and of probable commercial value. Ripens rather early.

8730. MANGIFERA INDICA.

Paheri Mango. From Bombay, India. Oval, plump, about 10 ounces in weight, of dull yellow color, blushed red around base. Flesh orange, free from fiber, of very rich spicy flavor. Some authorities have called it the best flavored mango of Bombay. Fairly productive, and ripens in mid-season.

11645. MANGIFERA INDICA.

Cambodiana Mango. From Saigon, Cochin China, through Haffner. A long, compressed, beaked fruit about 8 ounces in weight, and deep yellow in color. Seems to be more productive than most Indian mangos and is of a distinctive flavor. Quality good.

39338. MANIHOT DICHOTO-

MA. Manicoba. From Dr. V. A. Argollo Ferrao, Bahia, Brazil. One of the Brazilian rubber trees, the source of Jeque rubber. The tree is exceedingly variable in leaf and growth. It will not stand frost, and requires a rainy season in summer. It ordinarily requires a year's growth before being tapped.



Passiflora edulis, a delicious fruit with many seeds embedded in a watery pulp, suitable for eating, flavoring ices, or as an 'ade.



Persea americana, Taylor avocado, a variety of the Guatemalan type, which ripens its fruits through the early spring.

39340. MANIHOT HEPTAPHYLLA. Rubber Tree. From Dr. V. A. Argollo Ferrao, Bahia, Brazil. Tree 20 to 25 feet high, with dark brown bark and purplish twigs. Seeds larger and paler than those of the Ceara rubber (*M. glaziovii*). Reported as producing a very good quality of rubber. One of the so-called Manicoba rubber trees native of South America.

39339. MANIHOT PIAUHY-ENSIS. Remano Manicoba Rubber Tree. From Dr. V. A. Argollo Ferrao, Bahia, Brazil. Small tree from South America, described as reaching a height of 8 to 16 feet. Branches forked 2 to 3 times. Reported superior to Ceara rubber (*M. glaziovii*) in yield and quality of produce. Seeds are larger than those of the former species, less hard and horny, and germinate more readily.

26323. MAYTENUS BOARIA. From Mr. Jose D. Husbands, Limavida, Chile. Beautiful shade tree and hedge plant, which succeeds well on otherwise bare and dry lowlands. The hard wood is fine-grained and elastic, mostly plain white or pale yellow, sometimes beautifully veined with red and olive.

39123. MEIBOMIA FLORIBUNDA. From G. H. Cave, Darjeeling, India. A shrubby legume up to 5 feet high, with trifoliate leaves and copious racemes of large pink or rose-purple flowers, from the tropical and temperate slopes of the Himalayas up to 7,000 feet, and in western China.

39124. MEIBOMIA TILIAEFOLIA. From G. H. Cave, Darjeeling, India. Semi-woody, leguminous plant which sends up annually from a woody root-stock a number of erect stems 2 to 4 feet high, bearing trifoliolate, more or less downy leaves, and terminal panicles (8 to 12 inches long) of pale lilac to dark pink flowers 1-2 inch long. Flowers from August to October. Native of the Himalayas at 9000 feet.

36879. MEIBOMIA UMBELLATA. Lala. From C. D. Stearns, Pago Pago, American Samoa. Leguminous shrub, 3 to 7 feet high with densely downy terete branches becoming glabrous with age; 3-foliolate, glabrous green leaves; and axillary umbels of whitish pea-shaped flowers. Found on the sand beaches. A strand shrub of wide tropical distribution.

36880. MORINDA CITRIFOLIA. From C. D. Stearns, Pago Pago, American Samoa. Small rubiaceous tree widely distributed over the Pacific Islands, southern India and West Africa. Has large glossy leaves, white flowers in globose heads, and fruits composed of many drupes coalesced in a large round head. Cultivated in India for the al dye of commerce. Fruit edible but insipid and full of seeds.

40913. MORINGA OLEIFERA. From Wilson Popenoe, Cienfuegos, Cuba. A small ornamental tree about 20 feet in height, with handsome, delicate foliage and large clusters of fragrant white flowers. For trial in regions practically free from frost.

40215. MORUS ALBA. From seeds taken from dried fruits received from H. M. The Amir of Afghanistan, Kabul, through A. C. Jewett. The dried fruits of this mulberry are said to form the principal food of the poor people of the mountainous regions where it grows.

27048. MORUS ALBA. White Mulberry. From Leon Chenault, Orleans, France. Variety Fastigiata. A rare variety of white mulberry valuable as an ornamental pyramidal tree.

30330. MORUS NIGRA. Black Mulberry, "Shatoot." From F. N. Meyer, Khotan, Chinese Turkestan. Berries large, of dark violet color; very persistent, fresh sub-acid flavor; ripen from early August to late September. Trees grafted usually one meter above ground, so fruit may be picked easily. Recommended as home fruit in desert regions under irrigation. Probably hardy in protected places in New York and New England.

38104. MUSSAENDA PHILIPICA. From P. J. Wester, Linao, Bataan, P. I. Shrub or small tree of the coffee family, 10 to 16 feet high, with nearly ovate leaves, and terminal, rather open cymes of yellow flowers 3-4 inch long. One of the sepals of one of the flowers is enlarged like a large white leaf 2 to 3 inches long. A rather variable ornamental, widely distributed throughout the Philippines.

MYRCIARIA CAULIFLORA.

Jaboticaba. From Rio de Janeiro, Brazil. Collected by Dorsett, Shamel and Popenoe. Remarkable fruit tree 40 feet high. Popular among Brazilians. Maroon-purple, thick-skinned fruits resembling grapes with delicious, vinous, white pulp, borne on trunk, branches and twigs in such numbers as at times almost to conceal them. May stand light frosts.

36014. MYRICA RUBRA.

From N. Gist Gee, Soochow University, Soochow, China. Japanese fruit tree which bears dark red and light rose colored drupes, somewhat similar to blackberries. Tree attains 40 to 50 feet. Evergreen, leathery, magnolia-like leaves, 3 to 5 inches long. Fruit ripens in July, 1 inch by 1 1/4 inches. Light red fruits by far the better of the two; vinous, sweet, used like blackberries. Tree will stand 15° above zero.

38854. OCHROMA LAGOPUS.

From J. T. Crawley, Santiago de las Vegas, Cuba. A valuable tropical American tree of large growth. The wood is light and sometimes used in place of cork; the woolly fibers of the fruit can be used in textile manufactures. For trial in regions practically free from frost.

12569. OLEA EUROPEA.

Barouni de Sousse Olive. From Susa, Tunis, Africa, through T. H. Kearney. The largest fruited olive of the Tunisian region. Culture confined exclusively to Sahel and Kalaa-Srira. One of the best of the green table olives.

13567. OLEA EUROPAEA.

Chemlali Olive. From Tunis, North Africa, through Thomas H. Kearney. Small oil-producing olive, grown in immense plantations around Sfax where only from 5 to 10 inches of rain falls, irrigated for first two or three summers only. Orchards created by planting pieces of wood from bases of old trees. Promising variety for California, because of robust growth.

33783. OLEA FOVEOLATA.

Olive. From Chas. P. Lounsbury, East London, Cape Colony. Shrub, native of south Africa, twelve feet in height, ashy-gray branches; smooth, leathery, oblong-elliptic leaves; small flowers in short axillary cymes, and smooth oblong fruits half an inch long. Introduced for experiments as a possible stock for the cultivated olive.

PASSIFLORA EDULIS. Passion Fruit. Perennial vine suitable for greenhouses and nearly frost free countries. Fruits ovoid, 2 to 3 inches long, purple, seeds numerous; pulp acidulous, pleasantly flavored; much used in tropical countries in fruit salads, confectionery, and for flavoring ices and cool drinks. Requires rich soil. Best grown on trellises. Closely related to southern May Pop.

PASSIFLORA SP. Passion Fruit. From various sources. In Australia one species has become an extremely profitable fruit crop. In Chile and Peru another species is a popular table fruit. These introduced to cross with the southern may pop, a closely related perennial vine growing on poor soil. Hybridization has been accomplished between other species.

38806. PAULOWNIA FORTUNEI. From F. N. Meyer, Nan to tchu, Shensi, China. Medium sized tree, able to withstand drought and a certain amount of alkali. Planted on sandy land as a soil binder and wind break. Wood very light, used in furniture, bowls, jars, children's toys. Valuable as an ornamental in mild-wintered sections.

**37735. PELARGONIUM
ODORATISSIMUM.** Rose Geranium. From A. Mermier-Boyer, Chabet-el-Ameur, Algeria. The fragrant leaves of this plant supply an essential oil indispensable to the perfumery industry. It is grown for this purpose in France, Spain and Algiers. It is a native of tropical Africa.

36139. PERNETTYA MUCRONATA. From Chile. Through Mr. W. F. Wight. A small ericaceous evergreen shrub with dark green foliage, bearing white or pinkish flowers and pink fruits, which make it a striking plant for sheltered dooryards and rockeries as far north as New York. Many varieties, little known here, are grown in Europe.

PERSEA AMERICANA. Avocado. A small semi-tropical American tree growing to about 25 feet, bearing maroon or green pear-shaped fruits from the size of a large orange to that of a muskmelon. The skin is thin and tender, and the seed large. The greenish-yellow pulp, which is chiefly used for salads, is of the consistency of firm butter, and has a decidedly nutty flavor which is most delicious.

36623. PERSEA BORBONIA.

A large tree from the south Atlantic states with bark broken into flat ridges. Leaves are bright-green and lustrous above, glaucous beneath. Fruits small, of a lustrous dark blue or nearly black. For hybridization work or possible stock for the avocado.

PERSEA INDICA. A medium sized, erect, handsome evergreen tree from the Canary Islands. Of value as an ornamental for parks and avenues, and of interest in connection with avocado breeding. Hardier than most avocados. Fruits small, not edible. Rather slow growing.

36486. PHOENICOPHORUM BORSIGIANUM. From Mr. P. Rivaly Dupont, Seychelles Islands. An ornamental palm common in the Seychelles Islands, with a spiny stem and orange-red fruits, requiring a very moist atmosphere.

**24760. PHYLLOSTACHYS
BAMBUSOIDES.** Madake Bamboo.
From Nagasaki, Japan, through Wm.
D. Hills. Best timber bamboo in Japan,
growing to 60 feet eventually; planted
there in large groves on well drained,
rich soil. Spreads underground, but
easily controlled by ditches. Timber
used for every conceivable purpose—
ladders, basketry, fencing, stakes,
crates, irrigating pipes, etc.

**29133. PHYTOLACCA ACIN-
OSA.** var. *esculenta*. A perennial found
wild only in moist mountain forest
undergrowth in Japan. The leaves
are eaten boiled in miso soup by the
native rural people; the root is some-
what poisonous and is used as a drug
by the herb medical school; the ber-
ries are not edible.

33716. PIMENTA ACRIS.
From Mr. G. Regnard, Port Louis,
Mauritius. A myrtaceous tree, 45 to
50 feet high, with a straight trunk 15
to 24 inches in diameter. Furnishes a
moderately hard and heavy wood,
fine and compact in texture. From the
dried leaves is obtained the principal
ingredient of bay rum. Fresh leaves
have the taste and odor of lemon.



Phyllostachys mitis, a Japanese bamboo, grown by Dr. C. J. Edwards at Abbeville, La., one of the few American plantations that have reached maturity.



Prunus mira, a western Chinese peach, with smooth stone, which flowers much later than ordinary peaches, and may prove valuable in breeding to secure late-flowering strains.

PINUS THUNBERGII. Japanese Black Pine. From Dr. Nishimura, Mukden, Manchuria, through F. N. Meyer. Tree 100 to 120 feet with spreading, often somewhat pendulous branches, forming broad pyramidal head. Branches orange-yellow. Leaves bright green, 3 to 4½ inches long. Wood resinous, tough, durable, suitable only for indoor work. Hardy. Prefers sandy soil. Splendid for avenues.

39042. PIPTADENIA SP. From L. J. Mackintosh, Darjeeling, India. Piptadenias are trees or shrubs related to the Mimosa, with bipinnate leaves, and small white sessile flowers in axillary, cylindrical spikes or globose heads. *P. cebil* from South America is valued for the bark. *P. rigida* from the same country furnishes angico-gum, similar to gum arabic. The wood is used in naval construction.

PIPTANTHUS NEPALENSIS. Ornamental, leguminous shrub from Darjeeling, India, with very pithy young shoots, naturally 8 to 12 feet high but growing taller against walls. Deciduous in north, nearly evergreen in warmer climates. Leaves alternate, of 3 sessile leaflets, 3 to 6 inches long, dark green above, glaucous beneath. Inflorescences very hairy. Racemes 2 to 3 inches long and as broad, of bright yellow, pea-shaped flowers.

PISTACIA VERA. Pistache or Pistachio. Small deciduous tree cultivated in Mediterranean region for its nuts, with characteristic green meat and delicate flavor, used extensively in confectionery; becoming a very popular table nut. The best varieties bearing large nuts grafted on special stock are to be tested under supervision. Promising new dry-land tree crop.

32915. PITH E COLOBIUM UNGUIS-CATI. From Mr. Walter Fischer, Barbados. Very attractive, ornamental, small tree, much used as a border shrub and as a hedge plant. It is made conspicuous by its heavy burden of dense panicles of pods, open and twisted when ripe and showing the shiny, black, small seeds, to each of which is attached a white arillus. For trial in southern Florida.

PITTOSPORUM FLORIBUNDUM. Handsome small evergreen tree with alternate leaves found in sub-tropical Himalaya, ascending to 5,000 feet on hills. Bark bitter and aromatic and reported to possess narcotic qualities. Plant contains an aromatic resin, yellow in color, having very tenacious properties. Timber light colored, strong and tough, but of small size.

PITTOSPORUM MACROPHYLLUM. Evergreen, aromatic shrub, from New Guinea, with alternate leaves. Reported one of the most beautiful of the Pittosporum species. Leaves occasionally attain nearly the size of *Magnolia grandiflora*, and the flowers are said to possess a most exquisite fragrance, perhaps not surpassed by any other flower. Possibly valuable for perfumery purposes. A promising park shrub.

38969. PLAGIANTHUS BETULINUS. Ribbon Wood. From D. Petrie. Epsom, Auckland, N.Z. Semi-deciduous tree of the Mallow family, 30 to 60 feet high. Terminal panicles of yellowish-white flowers. Leaves soft, evergreen, somewhat like birch leaves, but much larger. Inner bark used by Maoris for making rope and twine for fishing nets. Good substitute for raffia. Grows on alluvial flats and beside streams in warm countries.

36606. PLEIOGYNIUM SOLANDRI. From J. F. Bailey, Brisbane, Queensland, Australia. A moderate sized tree 40 to 60 feet high and trunk 2 to 3 feet in diameter. Timber, when first cut is soft, but afterwards becomes hard and tough. Possibly of use as a stock for less hardy anacardiaceous fruit bearing trees.

40023. **PRINSEPIA SIN-
ENSIS.** From F. N. Meyer, near San
szemiau, Kansu, China. A spiny shrub
producing edible fruits, found at an
elevation of 6500 feet. For trial in semi-
arid sections of the United States.

32348. **PRUNUS ARMENI-
ACA.** Apricot. From F. N. Meyer,
Imperial Estate "Murgab," Bairam-
Ali, Oasis of Merv, Russian Turkestan.
A Central Asian variety of apricot
called "Murgab." Reported to be of
fine quality.

33222. **PRUNUS AVIUM.**
Cherry, var. *Garrafal*. From Pedro
Giraud, Granada, Spain. Purchased
at the request of W. T. Swingle of the
Bureau of Plant Industry. A giant
cherry having firm sweet flesh. Should
be tried in cherry regions of the Pacific
coast.

**PRUNUS CERASIFERA DI-
VARICATA.** Cherry-Plum. Very
beautiful, deciduous, round-headed
tree from the Caucasus, up to 30 feet
high, with nearly oval leaves, $1\frac{1}{2}$ to $2\frac{1}{2}$
inches long and half as wide. Flowers
1 inch across, solitary or crowded in
dense clusters. The most beautiful of
all true plums, being almost covered
with pure white blossoms in March
or April.

PRUNUS CONRADINAE.
Cherry. Handsome tree from western
China, up to 40 feet in height, with the
trunk 8 to 20 inches in diameter, thin,
pale green leaves, and white to deep
blush colored flowers, an inch or less
across, which appear early in the
spring. It is very similar to Sargent's
Cherry (*P. sargentii*.)

30315. PRUNUS DOMESTICA.
"Alibuchara" Prune. From F. N. Mey-
er, Khotan, Chinese Turkestan. Fruits
large, almost round, of deep blue color
when ripe. Flesh rather coarse, sub-
acid in flavor. This prune is reported
to be very similar to the "Tragedy"
prune. Said to withstand drought and
considerable alkali.

34601. **PRUNUS MIRA.** Wild Chinese Peach. From E. H. Wilson, of Arnold Arboretum. Thirty-foot tree, discovered north of Tachienlu, China, at altitude of 9,000 feet. Fruit one 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 and in northern Florida.

28685. **PRUNUS MUME** Japanese Apricot. From Yokohama, Japan. These belong to the Ume class of Japanese plums, and are quite different from European and American varieties. The fruit is exceedingly sour, and is largely used in Japan in the form of pickles. The leaves of *Perilla arguta* are pickled with the fruit and give it a reddish color.

PRUNUS PSEUDOCERASUS. Japanese Flowering Cherry. Strong-growing trees. There are a number of forms cultivated under this name, many of which are amongst the most beautiful of the April and May flowering trees. The flowers are either single or double, pink, blush, or white, strongly rose tinged.

32670. PRUNUS SPINOSA X DOMESTICA. From Koslov, Russia, through Frank N. Meyer. Hybrid plum produced by the plant breeder Mijurin between the Green Reine Claude and *P. spinosa*, a hardy spiny bush of Europe, Persia, North Africa and Siberia. Fruits dark purple, small, sweet and characteristically spicy. Good keeping qualities. On *Amygdalus davidiana* stock.

PRUNUS TOMENTOSA. Chinese Bush-Cherry. Early flowering deciduous shrub, with flowers 3-4 inch across, white tinged with rose, and small sour cherries on short stems. Fruits valuable for preserves. Its extreme hardiness, ornamental character and probable usefulness for hybridization experiments, make it promising for door yards in the north. It should be given a sheltered place.

PSIDIUM GUAJAVA. Guava. Well-known tropical fruit, generally utilized for jellies and preserves. Large shrubs with white flowers and round or pear-shaped fruits, 2 to 3 inches in diameter, containing many small hard seeds. The flesh is sweet and of a musky flavor. Stands very little frost.

PUNICA GRANATUM.

Pomegranate. Evergreen shrub with attractive, usually scarlet 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, eaten out of hand or used to prepare a refreshing drink. Flavor vinous, very pleasant. Rind contains tannin and is used in the manufacture of "Morocco" leather.

PYRUS BETULAEFOLIA. Pear.

Tall, rather narrow Chinese tree, with pale foliage, comparatively small flowers and russet fruits rarely more than $\frac{1}{2}$ an inch in diameter. Fast growing, shapely tree, hardy in the dry cold regions of this country and Canada. Unfortunately often suffers from pear blight. Used extensively by the Chinese as a stock. Grows easily from cuttings. For breeders of cultivated pears.

39723. QUERCUS INSIGNIS.

Mexican White Oak. From C. A. Purpus, Zacuapam, Vera Cruz, Mexico. A rapidly growing tree, very different in habit from most oaks. Is quite erect, reaching a height of 75 feet, and sending out large branches 30 or 40 feet above the ground. It is best suited to a moist, warm climate.

QUERCUS SUBER. Cork Oak.

An evergreen oak native of Mediterranean region. Grows to a height of 40 feet. It is usually first stripped of its cork when it reaches 16 inches in diameter. The average yield per tree is from 50 to 500 pounds every 10 years. Flourishes in sandy soil where the rainfall is ample. Often lives 200 years. Hardy in Southern States.

36735. RHAMNUS SP. Buckthorn. From Ying tau ko, China, through Frank N. Meyer. A small-foliaged species, having large, jet black berries. This shrub does not grow tall, but is densely branched and assumes a well rounded form when not mutilated. Of value as a garden and park shrub, and for medium-sized hedges, especially for dryer sections of the United States.

37384. RHEEDIA EDULIS. Limao do Matto. From Lavras, Minas, Brazil, through Dorsett, Shamel and Popenoe. Tree twenty feet high, with deep green, glossy foliage, and thick-skinned fruit, two inches long, having snowy-white pulp with acid flavor, resembling the mangosteen in appearance and the lansium in taste. Makes superior sweetmeats. Related to mangosteen. Try as stock.

38674. ROLLINIA MUCOSA.

From G. Regnard, Port Louis, Mauritius. A large fruited variety. Low tree related to the annonas, with oblong, taper-pointed, smooth leaves and fruit usually about 4 inches in diameter, greenish, somewhat globose, the surface bearing tubercles, edible. Native of Guiana and some of the West Indian Islands.

39186. ROSA ABYSSINICA.

Musk Rose. From the Director of the Bureau of Colonization, Asmara, Eritrea, Africa. Handsome, deciduous shrub with climbing branches; 5 to 7 oblong-oval leaflets pubescent beneath, and rather compact inflorescences of white flowers, 1 1-2 to 2 inches across, fragrant with the odor of musk. A native of southern Asia and Abyssinia, not hardy in the north.

28234. ROSA ALPINA. Rose.

From the Director of the Botanic Garden, Cambridge, England. Handsome free flowering shrub, native of Central Europe, with no or very few spines, slender stems, 3 to 6 feet high, and glabrous leaves, 2 to 6 inches long, composed of 5 to 9 leaflets, 1-2 inch long; flowers solitary, deep pink, 1 1-2 inches across; fruit bright red, narrowly bottle-shaped, 3-4 to 1 inch long. Foliage fine and fruit handsome.



Pyrus betulaefolia, a northern Chinese wild pear with small fruits, of possible value as a stock for other species.



Salix sp., a northern Chinese willow, which promises to be of great value as an ornamental in dry regions.

39593. ROSA GIGANTEA.

From E. D. Sturtevant, Hollywood, Cal. A rampant climber with usually unarmed flowering branches and solitary white to lemon yellow, single flowers, 5 to 6 inches across. Leaflets usually five, nearly oval, smooth, and firm. Fortune's "Double Yellow" said possibly to have arisen from crosses with this rose or to be a variety of it. Quite tender except in the South. Too large for greenhouses.

40194. RUBUS GIRALDIANUS.

From the Royal Botanical Gardens, Kew, England. A vigorous deciduous shrub, 8 feet high, native of China. The flowers are inconspicuous, but the striking white stems and the pendulous branches, giving a fountain-like aspect to the shrub, make it a handsome ornamental.

22987. SAGERETIA THEE-

ZANS. From F. N. Meyer, Soochow, Kiangsu, China. Shrub, almost evergreen, with small nearly oblong leaves less than an inch long, bearing numerous short panicles (1-2 to 1 inch long) of very small white flowers and small sweet edible fruits. Leaves are reported as used like tea. Grown rarely as dwarfed tree in pots. Chinese name *Chuck mei tsang*. Belongs to Rhamnaceae or Buckthorn family.

**34355. SAGEURUS MINDOR-
ENSIS.** From E. D. Merrill, Mindoro,
Philippine Islands. A palm from 5 to
10 feet in height; grows in thickets
and on open grassy slopes. It should
prove of decided value as an orna-
mental in greenhouses. It is probable
that it will grow out of doors in south-
ern California and southern Florida,
certainly in the West Indies and
Central America.

26762. SALIX BABYLONICA.
Willow. From Mr. Frank N. Meyer,
estate of Maximoff, Crimea, Russia.
A willow with golden yellow twigs
which are very pliable. The tree is
used for hedges and windbreaks. Fit
for the drier parts of the United States
where the winters are mild.

17737. SALIX SP. Willow. From
F. N. Meyer, Scha-ho-schonn, China.
Remarkable ornamental willow form-
ing naturally dense, flat-globular
heads, but of upright growth when
planted in hedges. The branches are
long, slender and tinged with red
towards the tips.

30144. SALIX SP. Willow.
Through Mr. Frank N. Meyer, from
Langar, Chinese Turkestan. A weep-
ing willow called "Khutta suchet."
Grows in rather sandy, alkaline soils.
The drooping habit does not develop
until it has formed a good trunk.

38819. SALVIA SP. Sage. From
F. N. Meyer, Ta hua shan, Shensi,
China. Woody plant of mint family,
growing from 1½ to 2 feet in height,
found in the stony debris at 2,000 to
3,000 feet altitude. Valuable possibly
as a shrub for rock gardens and for use
along open flower borders.

**SCHINUS TEREBINTHI-
FOLIUS.** Pepper-Tree. Medium
sized, ornamental, evergreen tree, na-
tive of Brazil, with very striking
foliage, highly prized for avenue and
lawn planting in mild-wintered re-
gions. Similar to *S. molle*, but with
stiffer branches and leaves larger and
darker green.

24613. SOLANDRA GRANDIFLORA. From Sr. Severo Hernandez, Guadalajara, Jalisco, Mexico. Woody vine belonging to the potato family, with smooth, bright green leaves. Flowers large and beautiful, a delicate greenish white when first open, turning slowly to a rich brownish yellow. They last about five days. Grows well in greenhouses where temperature is 50° F. or over. May do well outdoors in far South.

22023. SOLANUM MELONGENA. Golden Eggplant. From Frank N. Meyer, Peking, China. Dwarf annual, producing fruits the size of a small egg, at first white, later turning to a golden yellow color. Much grown as an ornamental pot plant by Chinese and recommended for the same purpose in this country.

SOPHORA DAVIDII. A thorny Chinese leguminous shrub, up to 5 feet high. Sometimes used as a hedge plant. Foliage grayish green, flowers whitish-lilac, pods produced in immense quantities. Of possible use as a bee lant.

SPONDIAS CYTHEREA. The We fruit of the Pacific islands. Small deciduous tree of rapid growth, producing richly colored yellow fruits, 2 inches in diameter, with brownish-yellow flesh somewhat resembling pineapple in flavor. Easily propagated from cuttings. Suitable for planting in southern Florida and California. Of the same family as the mango and related to the Hog Plum, *Spondias lutea*.

SPONDIAS TUBEROSA. Imbu. Medium sized tree, from the dry lands of eastern interior Brazil, branching four to six feet above ground, forming a broad, flat-topped, dense head and producing golden yellow plum-like, edible fruits, flavored somewhat like a sweet orange. Large limbs, when freshly cut and used for fence posts, frequently take root and grow.

40032. STYLIDIUM SP. From F. N. Meyer, Yu yin chen, Kansu, China. Shrub or small tree of the dogwood family, with variable leaves, some being large and uncut, others small and five-pointed, similar to those of *Liquidambar styraciflua*. Found along streams and in damp places at the foot of embankments. A very striking ornamental for lawns and parks in mild-wintered regions.

38541. STYLOMA PACIFICA.

Fan Palm. From the Belize Botanical Station, Belize, British Honduras, through O. F. Cook. A spineless fan palm up to 30 feet high, with exceptionally soft and pliant leaves having the blades wedge-shaped in outline. This species is remarkable for its fibrous, fluffy leaf-stalks. Known heretofore as *Pritchardia pacifica*.

38542. STYLOMA THURSTONI.

Fan Palm. From the Belize Botanical Station, Belize, British Honduras. A handsome fan palm without spines. The very pliant soft leaves are reported very beautiful. This species is distinguished from others of the same genus by its very long slender flower stalks like fishing rods, bearing a thyrselike inflorescence. Known heretofore as *Pritchardia thurstoni*.

SWIETENIA MAHAGONI.

True Mahogany. Tree of family Meliaceae, attaining great height and a diameter up to six feet. Furnishes the hard dark red wood of well known commercial value. This species occurs wild on the keys or islands south of the Everglades, and grows on hot coral rock on the seacoast of Florida, often within reach of the salt spray.

38731. SYNCARPIA GLOMULIFERA. From Angeles National Forest, California, through the Forest Service. A tall tree from Queensland and New South Wales, where it attains a height of 200 feet and a girth of 30 feet. It is quick growing, making it desirable as a street and avenue tree. Wood is very durable and is useful for flooring and cabinet making, taking a high polish.

38498. SYNECANTHUS SP. Uchul Palm. From O. F. Cook, Senahu, Guatemala. Slender, graceful pinnate-leaved palm, reaching 15 feet in height, with large, open inflorescences bearing beautiful, bright red fruits, the size of a cherry. Grows in cool, damp mountain side forests in the Senahu districts at elevations of 2,000 to 4,000 feet.

38828. SYRINGA AMURENSIS. From F. N. Meyer, Ta hua shan, Shensi, China. A tree lilac found in great masses on rocky mountain slopes at elevations of 3,000 to 5,000 feet. Of value as stock for "standard" lilacs and for hybridization purposes. Attractive when in flower and useful as hardy shrub.

**34804. TAMARIX PEN-
TANDRA.** Tamarisk. From Novospasska, Syzran-Riazan R.R., Russia, through F. N. Meyer. A deciduous shrub, up to 15 feet high, with long, slender plumose branches. The leaves are very small and closely crowded. The tiny pink flowers are arranged at the end of the shoots in dense masses. One of the most beautiful of late flowering shrubs.

36016. TERMINALIA EDULIS. Columpit. From Mr. P. J. Wester, Lamao, Bataan, P. I. Large, attractive fruit tree, with well rounded, open crown, affording half shade. Fruits are edible, ripening in June and July, larger than a cherry, of dark red color and fleshy, with a sub-acid flavor.

39333. TIBOUCHINA STENOCARPA. Quaresma. From Benjamin H. Hunnicutt, Lavras, Minas, Brazil. Plant with large, nearly ovate, 3 to 7 nerved leaves. Related to *T. semidecandra*, which is highly esteemed in Florida. Beautiful purple flowers, in bloom many months; grows well on poorest and driest ground and blooms during dry season. Easily propagated from cuttings. Order Melastomaceae.

**38977. TOLUIFERA PE-
REIRAE.** Peru Balsam. From J.
Pascual Baldwin, Habana, Cuba. Tall
leguminous tree with thick bark,
glossy, ornamental foliage and bright
yellow flowers. The commercial bal-
sam of Peru is obtained from incisions
in the bark. It is very fragrant and
has a sweetish taste.

**38739. TRACHYCARPUS
MARTIANA.** Palm. From L. J. Mack-
intosh, Darjeeling, India. Trunk 20
to 50 feet, slender, clothed beneath
the crown with the persistent leaf
sheaths; younger parts softly hairy;
leaves, 4 to 5 feet across, cut halfway
down into linear 2-lobed segments;
flowers yellow; fruit a drupe, 1 to 3½
inches long, dirty blue.

32829. ULMUS DENSA.
Stamboul Elm. From F. N. Meyer,
Oasis of Merv, Russian Turkestan.
Large tree with exceedingly dense,
umbrella-shaped head, formed by the
many-forked, often corky, winged
branches. Reported as valuable shade
tree for regions with hot summers and
mild winters. Thrives fairly well on
alkaline soil.

37810. ULMUS PARVIFOLIA.

Elm. From Frank N. Meyer, Nan to tchu, Shensi, China. Small-leaved species, ranging from shrub to tall tree according to location. Very drought resistant and stands fair amount of alkali. Much planted by Chinese for cart building lumber. Adapted to mild-wintered, semi-arid regions, for lumber and park purposes.

22975. ULMUS PUMILA.

Chinese Elm. From Frank N. Meyer, Fengtai, China. Tall shade and timber tree, remarkably resistant to droughts and severe extremes of temperature. Timber mainly used for the manufacture of Chinese carts. Of exceptional promise as a shade tree for the northern semi-arid regions of the United States.

**22978 VIBURNUM MACRO-
CEPHALUM**

Giant Chinese Snowball. From Soochow, Kiangsu, China, through Frank N. Meyer. A tall bush, bearing very large umbels of white flowers, attaining sometimes a foot in diameter. Employed by Chinese extensively as a dooryard shrub; often dwarfed by grafting on wild form and grown in tubs. A very showy shrub. Probably not hardy in the north.

**40901. VIGNA SESQUIPED-
ALIS.** Yard-Long Bean. From China.
Collected by F. N. Meyer. A variety
said to be unusually elongated. Much
used by the Chinese as a garden veg-
etable, eaten either fresh, dried, salted
or pickled. Should be supported to
give maximum returns.

21976. VITEX INCISA,
from Frank Meyer, Shantung, China.
Tall perennial growing on dry alkali-
line lands, with delicate blue flowers
appearing in terminal panicles and
rich in honey. Annual shoots occa-
sionally used by Chinese in basket
manufacture. Recommended for test-
ing as an ornamental in the South-
western States.

ZIZIPHUS JOAZEIRO.
Jua. From Minas Geraes and Bahia,
Brazil. Collected by Dorsett, Shamel
and Popenoe. Densely foliated, thorny
tree, 40 feet high, bearing large quan-
tities of small, yellow fruits of which
cattle are so fond that the tree is val-
ued as a forage plant for dry lands,
where it succeeds well. Tea made
from fruits is used as an emollient.

17752. ZIZIPHUS JUJUBA.

Jujube. From F. N. Meyer, Changli, Chili, China. Fruit in size and shape very similar to the jujube seedlings commonly grown in Texas, but rather finer flavored, about an inch long; skin thin, tough, flesh rather dry, fairly sweet. Not of special value unless very prolific, as larger varieties are of better quality.

19394. ZIZIPHUS JUJUBA.

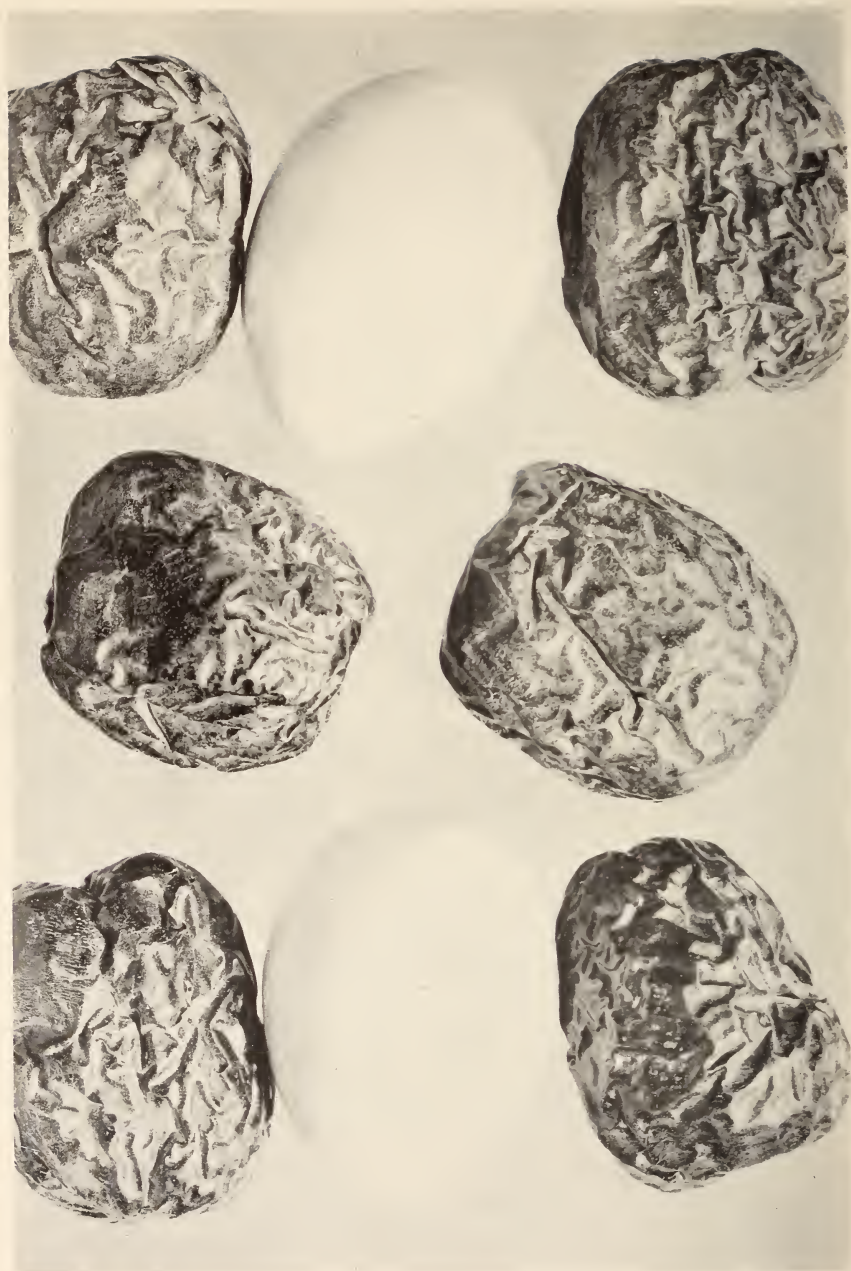
Chinese Jujube. From F. N. Meyer, Pekin, China. A large fruited variety often met with in Chinese markets. Seedling trees grown at Chico, California, now about 20 feet high, have produced large quantities of fruit of most excellent flavor. Seven hundred small boxes of candied fruit from these trees were served at the 1913 banquet of the National Geographic Society.

35287. ZIZIPHUS JUJUBA.

Wild Jujube. The seeds of this plant were collected by F. N. Meyer on the city wall of Pekin. A very spiny shrub or small tree, very drought-resistant, sometimes used in China as a stock for cultivated jujubes, and should be tried as a stock for these fruits here.



Ulmus densa, a Turkestan elm, with round dense head, suited for cultivation in arid regions under irrigation.



Ziziphus jujuba, the Chinese jujube, with fruits when dried as large as hens' eggs. Suitable for a wide range of American climatic conditions, and a very promising fruit.

SUPPLEMENTARY LIST

37478	Abelia triflora
	Acacia baileyana
31738	Acanthosicyos horrida
Y7233	Achradelpha mammosa
Y7237	" "
38479	" viridis
38566	" "
36693	Acrocomia sclerocarpa
40332	Actinidia sp.
33100	Adansonia digitata
M1156	Adenanthera microsperma
10727	Adenocarpus frankenioides
32285	Albizzia acle
39636	" lebbeck
38996	" odoratissima
38995	" sp.
39562	Aleurites montana
36811	Allium cepa
36812	" "
38787	" schoenoprasum
40525	Allogyne cuneiformis
40528	Aloe sp.
40529	" sp.
40531	" sp.
39294	Amaranthus sp.
	Amaryllis
37906	Amburana claudii
40778	Amerimnon sissoo
33215	Amygdalus communis
33217	" "
33218	" "
39295	" microphylla
24807	" persica
30358	" "
32374	" "
32377	" "
33219	" "

36125	Amygdalus	persica	
36127	"	"	
38178	"	"	
38469	"	"	
34684	"	"	nectarina
34688	"	"	"
39810	Annona	cherimola	x squamosa
39814	"	"	x "
26441	"	diversifolia	
39358	"	purpurea	
34877	"	sp.	
38762	"	sp.	
41289	"	sp.	
34695	Antidesma	nitidum	
35148	Aralia	chinensis	mandshurica
33557	Argyreia	nervosa	
34878	Aristoclesia	esculenta	
40825	Artocarpus	integra	
31835	Asparagus	falcatus	
40617	"	lucidus	
23014	"	sp.	
23015	"	sp.	
23016	"	sp.	
37868	Attalea	funifera	
23471	Averrhoa	bilimbi	
37095	Bactris	caryotaefolia	
31836	Bauhinia	picta	
M1535	"	tomentosa	
36864	Bellucia	sp.	
36626	Berberis	patagonica	
40148	"	polyantha	
40149	"	prattii	
13352	"	sinensis	
40150	"	stapfiana	
40151	"	virescens	
40153	"	yunnanensis	
39001	"	sp.	
40139	"	sp.	
35599	Blighia	sapida	
38486	Bombycodendron	vidalianum	

- 37699 *Botor tetragonoloba*
 31865 *Bouea gandaria*
 39879 *Brachychiton acerifolium*
 36770 *Brassica oleracea caulo-rapa*
 37898 *Bromelia* sp.
 37895 *Bunchosia* sp.
 31935 *Byrsonima crassifolia*
 Caesalpinia tinctoria
 36303 " sp.
 35886 *Cajuputi hypericifolia*
 24166 " *leucadendra*
 40156 *Calophaca wolgarica*
 38156 *Campylotropis macrocarpa*
 31402 *Canna* sp.
 36928 " sp.
 39722 *Capsicum annuum*
 39932 " "
 40761 " "
 34989 *Caragana decorticans*
 22981 " sp.
 30655 " sp.
 36746 " sp.
 38824 " sp.
 34253 *Carissa ovata*
 38376 " "
 39493 *Caryophyllus jambos*
 34739 *Caryota sobolifera*
 33562 *Cassia glauca*
 36714 " *grandis*
 40070 " "
 39640 " *laevigata*
 " sp.
 36666 *Castanea mollissima*
 39618 " sp.
 39866 " sp.
 40035 " sp.
 40036 " sp.
 35892 *Castilla nicoyensis*
 24714 *Catha edulis*
 36886 *Ceiba pentandra*

- 39736 *Celastrus* sp.
 20958 *Ceratonia* siliqua
 20960 " "
 20963 " "
 39625 *Cereus* sp.
 34864 *Chaenomeles* japonica
 38515 *Chamaedorea* sp.
 38516 " sp.
 37779 *Citrus* bergamia
 37786 " sp.
 37793 " sp.
 38818 *Clematis* sp.
 39696 " sp.
 39301 *Clitoria* ternatea
 38838 *Cocculus* sp.
 37021 *Cocos* schizophylla
 Coffea arabica
 39353 " sp.
 " sp.
 Coleus tuberosus
 36747 *Colutea* sp.
 38341 *Copaiva* copallifera
 37224 *Cordia* obliqua
 38122 " subcordata
 36741 *Cornus* sp.
 22468 *Corylus* avellana
 22472 " "
 22474 " "
 22476 " "
 22480 " "
 22484 " "
 33234 " "
 34266 " "
 34785 " "
 33041 *Cotoneaster* microphylla glacialis
 26874 " pyracantha
 35128 " simonsi
 39107 *Cracca* candida
 17882 *Crataegus* pinnatifida
 37001 *Crotalaria* mesopontica

31365	Cucumeropsis	mannii
39469	Cucumis	sativus
39470	"	"
40203	"	"
40783	"	"
40784	"	"
40828	"	"
36778	Cucurbita	maxima
36317	"	sp.
36318	"	sp.
36320	"	sp.
39890	"	sp.
26885	Cyclamen	persicum
33214	Cydonia	oblonga
29454	Datura	fastuosa
34079	Deckenia	nobilis
39964	Delonix	regia
39178	Dendrocalamus	hamiltonii
21910	Diospyros	kaki
22365	"	"
22367	"	"
22368	"	"
30519	"	pseudo-ebenum
40551	Dolicholus	phaseoloides
40903	Dolichos	lablab
35672	Echium	fastuosum
35572	Eriobotrya	japonica
38709	Eucalyptus	alpina
38723	"	amygdalina
38710	"	bicolor
38715	"	globulus
38717	"	gomphocephala
38716	"	goniocalyx
38718	"	leucoxylon
38725	"	longirostris
38730	"	muelleriana
38720	"	obliqua
38722	"	polyanthemus
38724	"	resinifera
38726	"	sideroxylon

38728	<i>Eucalyptus</i>	<i>tereticornis</i>
38714	"	<i>viminialis</i>
38729	"	"
38727	"	<i>virgata</i>
34598	<i>Eucommia</i>	<i>ulmoides</i>
37492	<i>Eugenia</i>	<i>klotzschiana</i>
39418	"	<i>tuberculata</i>
40719	<i>Evodia</i>	<i>rutaecarpa</i>
36995	<i>Feroniella</i>	<i>oblata</i>
38633	<i>Ferula</i>	<i>sp.</i>
33104	<i>Ficus</i>	<i>rubiginosa</i>
39857	"	<i>sycomorus</i>
39858	"	"
13138	"	<i>sp.</i>
34611	<i>Foeniculum</i>	<i>vulgare</i>
39549	<i>Garcinia</i>	<i>cornea</i>
39880	"	<i>morella</i>
37131	"	<i>multiflora</i>
36977	"	<i>sp.</i>
37092	"	<i>sp.</i>
38049	<i>Gaya</i>	<i>lyallii</i>
	<i>Ginkgo</i>	<i>biloba</i>
40041	<i>Grevillea</i>	<i>banksii</i>
40042	"	"
40043	"	<i>caleyi</i>
37902	<i>Guatteria</i>	<i>sp.</i>
24902	<i>Guizotia</i>	<i>abyssinica</i>
35702	<i>Haemanthus</i>	<i>fascinator</i>
40048	<i>Hakea</i>	<i>dactyloides</i>
40049	"	<i>gibbosa</i>
40052	"	<i>pugioniformis</i>
40771	<i>Heliotropium</i>	<i>curassavicum</i>
	<i>Hemerocallis</i>	<i>flava</i>
36119	<i>Hesperis</i>	<i>sp.</i>
38106	<i>Hibiscus</i>	<i>physaloides</i>
38666	"	<i>radiatus</i>
35597	"	<i>sp.</i>
35598	"	<i>sp.</i>
	"	<i>sp.</i>
39872	<i>Hovea</i>	<i>linearis</i>

- 35592 *Hura crepitans*
 39094 *Hymenodictyon excelsum*
 34836 *Ilex corallina*
 26598 *Indigofera* sp.
 37924 *Inga affinis*
 35116 *Inodes exul*
 Ipomoea quamoclit
 35168 *Iris spuria*
 35169 " " *desertorum*
 38826 *Jasminum* sp.
 26884 *Juniperus oxycedrus*
 27505 " *procera*
 39873 *Kennedya rubicunda*
 21203 *Kigelia pinnata*
 38657 *Lactuca sativa*
 24431 *Lansium domesticum*
 33319 *Larix dahurica*
 40811 *Lathyrus* sp.
 39584 *Laurocerasus ilicifolia*
 38547 *Lecythis usitata*
 40282 *Lentilla lens*
 34853 *Leptospermum scoparium*
 40732 *Lespedeza* sp.
 26877 *Ligustrum vulgare*
 22988 " sp.
 39647 *Lindenbergia hookeri*
 32995 *Lonicera bracteolaris*
 40187 " *quinquelocularis*
 translucens
 36748 " sp.
 36751 " sp.
 38815 " sp.
 38816 " sp.
 39634 " sp.
 39697 " sp.
 39859 *Loroma amethystina*
 40533 *Luffa cylindrica*
 Lycopersicon sp.
 38129 *Macaranga tanarius*
 39021 *Mallotus* sp.

27061	Malus	sylvestris
27152	"	"
27153	"	"
30229	"	"
30635	"	"
35636	"	"
27108	"	sp.
30327	"	sp.
30328	"	sp.
31653	"	sp.
35909	Mammea	americana
8733	Mangifera	indica
9522	"	"
10637	"	"
10661	"	"
13348	"	"
29333	"	"
36965	"	"
38982	"	"
39155	"	"
39337	Manihot	glaziovii
37703	"	sp.
39677	Meibomia	sp.
35212	Melicocca	bijuga
35970	Mikania	sp.
33986	Mimosa	adpressa
37726	Mimusops	elengi
40872	Mirabilis	jalapa
39894	Nicotiana	tabacum
27812	Ocimum	basilicum
12684	Olea	europea
12685	"	"
12910	"	"
27172	"	"
27173	"	"
29047	"	verrucosa
36845	Operculina	tuberosa
38839	Ophiopogon	sp.
37876	Ormosia	monosperma
36359	"	sp.

- 29183 *Oroxylon indicum*
 39126 *Osbeckia stellata*
 39651 " "
 38837 *Paederia foetida*
 36550 *Pahudia rhomboidea*
 38175 *Parinari excelsum*
 28674 *Parmentiera cerifera*
 39030 *Parnassia* sp.
 34642 *Pasania cuspidata*
 Passiflora incarnata
 38373 " *laurifolia*
 40837 " "
 39223 " *maliformis*
 40552 " *quadrangularis*
 35215 " sp.
 40072 " sp.
 39032 *Pedicularis flexuosa*
 39033 " *lachnoglossa*
 39034 " *longiflora*
 39035 " *megalantha*
 39036 " *mollis*
 39037 " sp.
 31964 *Pelargonium quercifolium*
 36017 *Pentapetes phoenicea*
 35231 *Persea pubescens*
 27820 *Phaseolus vulgaris*
 37024 " "
 " "
 " sp.
 37944 *Phoebe nanmu*
 39261 *Phyllanthus acida*
 28034 *Pinus gerardiana*
 Pisum sativum
 38654 *Pithecolobium saman*
 39420 " *tortum*
 " sp.
 39045 *Pleurospermum apiolens*
 39046 " *brunonis*
 39047 " *hoo keri*
 37809 *Poncirus trifoliata*

34791	Populus	balsamifera	
26614	"	berolinensis	
34792	"	"	
34794	"	candicans	
34790	"	deltoides	
34793	"	"	
34797	"	laurifolia	
34796	"	nigra	
34801	"	petrowskiana	
34779	"	simonii	
34798	"	"	
39924	"	"	
26812	"	sinensis	
22363	"	suaveolens	
22447	"	"	
22861	"	"	
34799	"	"	
38255	"	tomentosa	
38232	"	sp.	
40857	Primula	littoniana	
	Prosopis	juliflora	
32834	Prunus	armeniaca	
39464	"	"	
33223	"	avium	
	"	cerasifera pissardi	
		x salicina	
27031	"	dasycarpa	
30689	"	domestica	
30692	"	"	
33224	"	"	
34267	"	"	
34268	"	"	
34414	"	humilis	
18586	"	salicina	
	"	"	x americana
31652	"	"	x cerasifera
			myrobalana
34134	"	sibirica	
26886	"	simonii	
32669	"	spinosa x domestica	

- 32671 *Prunus spinosa* x *domestica*
 32673 " " x "
 26247 " *tenuiflora*
 38974 " *umbellata*
 18587 " *sp.*
 Psidium cattleianum
 34637 " *friedrichsthalianum*
 37922 " *sp.*
 38342 " *sp.*
 40744 *Psoralea corylifolia*
 32121 *Pterocarpus indicus*
 38427 *Pterocarya fraxinifolia*
 30329 *Pyrus chinensis*
 30351 " "
 35637 " "
 38799 " *sp.*
 31769 *Quercus* *sp.*
 36115 *Raphanus sativus*
 39466 " "
 41030 " "
 29147 *Reaumuria* *sp.*
 39433 *Rhamnus* *sp.*
 37802 *Rheedia brasiliensis*
 32390 *Rhus lancea*
 35302 " *verniciflua*
 39678 " *sp.*
 39679 " *sp.*
 39706 " *sp.*
 39737 *Rhynchosia volubilis*
 40480 *Ribes sanguineum*
 37622 " *speciosum*
 37914 *Ricinus communis*
 40873 " "
 Rollinia orthopetala
 40344 " " *sp.*
 29729 *Rosa gigantea* *hybrid*
 32953 " *indica*
 30790 " *macrophylla*
 28514 " *soulieana*
 28520 " *sp.*

28521	Rosa	sp.
28522	"	sp.
31694	"	sp.
35989	"	sp.
38166	"	sp.
39656	Rubia	cordifolia
39657	Rubus	calycinus
40195	"	omeiensis
39132	"	paniculatus
39187	"	rosaefolius
36571	"	sp.
36758	"	sp.
37887	"	sp.
39069	"	sp.
39180	"	sp.
39181	"	sp.
39819	"	sp.
	"	sp.
24418	Salix	babylonica
28710	"	chilensis
33135	"	fragilis
22450	"	sp.
29143	"	sp.
30051	"	sp.
30052	"	sp.
30144	"	sp.
38233	"	sp.
38238	"	sp.
40782	Santalum	album
36378	Sapindus	saponaria
37913	Sarcostemma	apiculatum
38548	Solanum	muricatum
37566	"	quitoense
39632	Solanum	sp.
40607	"	sp.
	"	sp.
39421	Sophora	tomentosa
23729	Spathodea	sp.
40098	Spondias	lutea
22867	Tamarix	sp.

29149	Tamarix	sp.
35261	"	sp.
40913	Tecoma	leucoxylon
39626	Thunbergia	gibsoni
39302	"	sp.
36159	Tigridia	sp.
36118	Trichosanthes	kirilowii
39688	Triumfetta	pilosa
32830	Ulmus	densa
32831	"	sp.
34063	"	sp.
35576	Vangueria	infausta
	Warneria	thunbergia
39431	Xanthoceras	sorbifolia
39631	Zanthoxylum	sp.
39695	"	sp.
36710	Zea	mays
35301	Zelkova	serrata
35032	Zephyranthes	sp.
36158	"	sp.
38111	"	sp.
38180	Zinziber	officinale
17892	Ziziphus	jujuba
22684	"	"
22686	"	"
30488	"	"
34054	"	"
35254	"	"
36852	"	"
36853	"	"
36854	"	"
37070	"	"
37476	"	"
37484	"	"
37489	"	"
38243	"	"
38244	"	"
38245	"	"
38246	"	"
38249	"	"

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