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TAXONOMIC & RANGE INVESTIGATIONS

NO. 57.

BULLETIN OF FOREIGN PLANT INTRODUCTIONS

February 1 to 14, 1911.

NEW PLANT IMMIGRANTS.

(NOTE: Applications for material listed in this bulletin may be made at any time to this Office. As they are received they are filed and when the material is ready for distribution it is distributed to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.)

ALOCASIA SPP. (Araceae.) 29519-520. Tubers of Alocasia from Paramaribo, Surinam. Presented by Mr. P. J. S. Cramer, Director of Agriculture. No. 29519. "Egg. Corms and tubers nonacrid. Flesh yellow with whitish layer next to the skin. When cooked the yellow flesh resembles the yolk of a hard-boiled egg and has also a slightly similar taste. Flavor fair." (R. A. Young.) No. 29520. "Abo. Corms and tubers nonacrid; flesh yellow. This variety is too coarse in texture and flavor for table use. It can be used for stock food." (R. A. Young.) For distribution later.

ANDROPOGON CITRATUS. (Poaceae.) 29535. Plants of lemon grass from Heneratgoda, Ceylon. Presented by Messrs. J. P. William & Bros. Imported, together with the following introduction, for the work of the Office of Drug Plant Investigations in cultivating these oil-grasses. For distribution later.

ANDROPOGON NARDUS. (Poaceae.) 29536. Plants of citronella grass from Heneratgoda, Ceylon. Presented by Messrs. J. P. William & Bros. For distribution later.

ATALANTIA GLAUCA. (Rutaceae.) 29537. Seeds of the desert kumquat from Wellington Point, near Brisbane, Queensland. Presented by Mr. James Pink. "This is one of the most interesting of all citrus fruits and one which, curiously enough, has never yet received adequate attention from botanists or horticulturists. It was first mentioned by Leichardt, the German explorer, to whom we owe much of our knowledge concerning the interior of the deserts of northeastern Australia. It is a shrub or small tree from 12 to 15 feet high, with a trunk 2 to 6 inches in diameter. It has small but thick, leathery leaves of gray-green color and one is struck by the scantiness of the foliage. The flowers are small and the fruits about a half inch in diameter. An agreeable beverage is made from the acid juice and a fair

preserve may be made out of the fruit. The peel has the sweetish flavor of the kumquat. It is known in Australia as the native lemon. The plant was described botanically in a footnote to Lt. Col. Thomas Livingston Mitchell's 'Journal of an Expedition into the Interior of Tropical Australia in Search of a Route from Sydney to the Gulf of Carpentaria'. This plant was discovered on October 17, 1846, not far from Lt. Col. Mitchell's camp, near the juncture of the Maranoa and Merevale Rivers, in the southern limit of Queensland, latitude 26° S. Decidedly cold weather was encountered near this point, in some cases the ice being so thick that it had to be broken in the morning before the horses could drink. It seems quite probable from this that the plant grows in a region where the temperature occasionally falls to 10° F. and in rare cases nearly to zero. It is the hardiest of all evergreen citrus fruits and is very promising for use in breeding new and hardy types. Not only has it highly developed ability to withstand cold, but it is very likely to have an even more desirable quality of being able to withstand occasional spells of hot weather in winter, a quality usually possessed by desert plants and also characteristic of the kumquat, to which this plant is to be referred. It is not at all impracticable that it can be utilized in its present form in many parts of Arizona, as well as in some parts of southern Utah, Nevada and southern Oregon. It is obviously drought resistant, a point of the very greatest interest, both botanically and agriculturally, and its introduction into the United States will undoubtedly lead to the inauguration of a new era in the breeding of citrus fruits." (W. T. Swingle.) For distribution later. See photograph.

BELOU MARMELOS. (Rutaceae.) 29631. Fruits of the bael fruit from Rangoon, Burma, India. Received through Mr. R. S. Woglum, explorer for the Bureau of Entomology. Introduced for the work in citrus breeding of the Office of Crop Physiology and Breeding Investigations. For description and photograph see Bulletin Plant Immigrants, No. 49. For distribution later.

CANNABIS SATIVA. (Moraceae.) 29523-524. Seed of hemp from western China. Presented by Mr. E. H. Wilson, botanical collector for the Arnold Arboretum, Jamaica Plain, Massachusetts. No. 29523. "Hoa ma. This is perhaps the most important fiber producing plant in western China. It is cultivated extensively as a winter crop on the Chengtu plain, especially around the cities of Wen Chiang Hsien and Pi Hsien. The fiber is used for making coarse cloth, cordage, etc., and is also largely exported to other parts of China, via Chungking and Ichang." (Wilson.) No. 29524. "Man ma. This is cultivated as an autumn crop in the mountains west of Kwan Hsien, between 3,000 and 5,000 feet. The fiber is apparently only used locally by the peasants." (Wilson.) For distribution later.

CAPSICUM SPP. (Solanaceae.) 29493-495. Seeds of peppers from Usumbwa, Post Mwanza, German East Africa. Presented by the Usumbwa Company, G. m. b. H. No. 29493. Native large red. No. 29494. Native round yellow. No. 29495. Native round red. For distribution later.

CITRUS SP. (Rutaceae.) 29629. Seeds of orange from Gan Doo Awn, Mawkmai State, Southern Shan States, Burma, India. Presented by Mr. Oglesby Paul, Fairmont Park, Philadelphia, Pennsylvania, through Mr. Edward Simmonds, Subtropical Garden, Miami, Florida. Collected by Rev. H. C. Gibbens, M. D., American Baptist Shan Mission, Monghai, Southern Shan States, Burma. "These seeds are from the best variety of orange grown in Burma. The rind comes off very easily and is not adherent to the fruit itself. I have never tasted any American oranges that could approach anything near to their flavor. Their natural habitat is a very warm lowland. They will not grow in Monghai." (Gibbens.) For distribution later.

COLOCASIA SP. (Araceae.) 29518. Tubers of dasheen from Paramaribo, Surinam. Presented by Mr. P. J. S. Cramer, Director of Agriculture. "Sinesie. Corms and tubers nonacrid. Flesh of tubers very white when cooked, while that of the corm becomes slightly violet colored. Flavor inferior." (R. A. Young.) For distribution later.

DIOSPYROS SP. (Diospyraceae.) 29486. Seed of persimmon from Tientsin, China. Presented by Dr. Yamei Kin, Chief of the Woman's Medical Department of Northern China, Tientsin. "Seed of the seedling persimmon, sold on the market only in the dried fig form. This wild persimmon is called 'hei tsao' or black 'tsao', not a persimmon according to the fruit growers' classification here." (Kin.) For distribution later.

GOSSYPIUM PERUVIANUM. (Malvaceae.) 29498. Seed of cotton from Usumbwa, Post Mwanza, German East Africa. Presented by the Usumbwa Company, G. m. b. H. "This is the species found everywhere in the interior and known to have been cultivated by natives for hundreds of years." (Usumbwa Company.) For distribution later.

HAPLOPHYTON CIMICIDUM. (Apocynaceae.) 29503. Seed from Mexico City, Mexico. Presented by J. Labadie Successors, Mexico City. "This is a Mexican plant, a decoction of the leaves of which has been used with success for the control of the orange fruit fly, Trypeta ludens Loew." (Mr. F. A. Stockdale, Assistant Director and Government Botanist, Georgetown, British Guiana.) The Bureau of Entomology reports that so far as they know no trial has been made of this plant in this country. For distribution later.

JACARANDA SP. (Bignoniaceae.) 29491. Seed of jacaranda from Parana, Argentine Republic. Presented by Dr. A. M. Monsanto, Parana. "This tree when in full bloom presents one of the most perfect and artistic clusters of lilac flowers the human eye might ever wish to behold. If I may judge, perhaps the most seasonable time for planting these seeds would be in the spring of the year." (Monsanto.) For distribution later.

LAWSONIA INERMIS. (Lythraceae.) 29530. Seed of henna from Culebra, Canal Zone, Panama. Presented by Mr. Alfred D. Dyer. "Known as henna, is a shrub long cultivated in the Orient, especially in Egypt and Arabia, where it is used for a variety of purposes. The flowers serve as a perfumery material by virtue of a volatile oil which they contain, having an odor said to closely resemble that of the tea rose. Beside their use in applications to wounds, sores, etc., the leaves are used in some regions to color the finger nails red. The root is astringent." (R. H. True.) For further description see Bulletin Plant Immigrants, No. 19. For distribution later.

MACHILUS NANMU. (Lauraceae.) 29485. Seed of the nanmu tree from Yachow, Szechuan, West China. Presented by Mr. W. F. Beaman. "This is a species of Machilus, a genus closely allied to Laurus, which grows to great size in western China. It is very highly esteemed by the Chinese on account of its great durability. It is a sparse yielder and has been used for centuries by the Chinese in the construction of coffins. Owing to its scarcity a sufficient number of planks to construct a coffin often cost as much as a hundred dollars. The Imperial Palaces are said to be finished in this wood. It is worth carefully experimenting with to find whether there are parts of the United States adapted to its culture. It might easily prove an important article of export if it can be propagated readily in this country." (W. T. Swingle.) For distribution later. See photograph.

MANGIFERA INDICA. (Anacardiaceae.) 29504-513. Grafted plants of mango from Poona, Bombay, India. Purchased from Mr. William Burns, Economic Botanist. Sixteen plants of the following varieties: Mullgoa, Borsha of Bhadgaon, Gola Alphonse, Kavasji Patel, Batli, Lala Alphonse, Pairi, Madras Mullgoa, Ratnagiri and Alphonse. All introduced for the work of this Office in the establishment of the mango industry in Florida, Porto Rico, Hawaii and the Philippines. For distribution later.

MANGIFERA INDICA. (Anacardiaceae.) 29502. Cuttings of mango from San Antonio de Los Banos, Cuba. Presented by Mr. J. D. Rose at the request of Mr. C. F. Kinman, Horticulturist, Porto Rico Experiment Station. Manzana variety. Introduced for the same work as the preceding. For distribution later.

NICOTIANA SPP. (Solanaceae.) Seed of tobaccos introduced for the work of the Office of Tobacco Investigations in breeding a strain resistant to the so-called Granville tobacco wilt disease. All for distribution later.

No. 29489. From Mexico. Presented by Mr. W. W. Mackie, Director, Yaqui Valley Experiment Station, Esperanza, Sonora, Mexico. "Native tobacco seed secured from the Yaqui Indians. This tobacco is called 'Macuchi' and has been prized by the Mayos and Yaquis for centuries. The Mayos and Yaquis are branches of the same tribe living on rivers of the same names." (Mackie.)

No. 29525. From Medan, Sumatra. Presented by Mr. J. G. C. Vriens, Director of the Deli-Proef-Station. "Deli. This variety is very susceptible to the Granville tobacco wilt disease." (Vriens.)

Nos. 29527-528. From Huimanguillo, Tabasco, Mexico. Presented by Mr. A. G. Weiss. No. 29527. "Seed from which this lot was grown was obtained from Valle National, Mexico. The dealer from whom I procured this variety is experimenting with it to try and find a native tobacco which will produce a better wrapper than the local tobacco." (Weiss.) No. 29528. Seed from Huimanguillo section, reputed to be very hardy and very resistant to disease of all kinds.

No. 29632. From Cuernavaca, Mexico. Presented by Sr. Guillermo Gandara, through Mr. W. E. Safford. A wild variety.

PAPYRUS ANTIQUORUM. (Cyperaceae.) 29484. Seed of the papyrus of the ancients. Presented by Mr. H. A. Dreer. Introduced for the work of the Office of Crop Technology in the cultivation and trial of paper-plants. For distribution later.

PASSIFLORA SP. (Passifloraceae.) 29538. Seed of a passion fruit from Wellington Point, near Brisbane, Queensland. Presented by Mr. James Pink. "This is a great improvement on any we have here, and this is the history of it: we have two varieties of passion fruit here and working on the Darwin theory that crossing varieties revitalizes the offspring, I crossed the two varieties two years ago and the fruit from which these seeds were taken is the result of the cross." (Pink.) For distribution later.

PASSIFLORA SP. (Passifloraceae.) 29532. Seed of passion fruit from Mollendo, Peru. Presented by Mr. William Morrison, Acting Consular Agent. "The owner of the tree from which this seed was procured does not know where he got the original seed but is inclined to believe that he received it from Tacna." (Morrison.) For distribution later.

PISTACIA TEREBINTHUS. (Anacardiaceae.) 29476. Seed of pistache from Aintab, Central Turkey-in-Asia. Received through Mr. H. H. Bakkalian, Secretary to Mrs. F. A. Shepard. "Melengish.

This is used as a stock. The fruits are white when unripe and then become gradually red. The small tree looks quite showy when covered with these red clusters; the bright red becomes darker and darker as the fruit grows riper. Some time after it is picked it takes the green color, as seen on the seeds which I send." (Bakkalian.) For distribution later.

PISTACIA VERA. (Anacardiaceae.) 29475. Seed from Aintab, Central Turkey-in-Asia. Received through Mr. H. H. Bakkalian, Secretary to Mrs. F. A. Shepard. "The common pistache exported from Turkey to America." (Bakkalian.) For distribution later.

QUERCUS CUSPIDATA. (Fagaceae.) 29533. Seed from Yokohama, Japan. Purchased from the Yokohama Nursery Company at the suggestion of Dr. B. T. Galloway. "One of the most striking and beautiful hedges of this district (Sagami) is made from this evergreen oak. At first I thought the hedges were of camphor, so striking were the young leaves. The plant readily adapts itself to any kind of training and seems to stand a lot of rough treatment. The Imperial railroad is now using the hedge a great deal. The hedge would be hardy south of Norfolk, Virginia, and should also be hardy along the Pacific coast from Chico, California, northward. I should think it would do well at Portland, Seattle, Tacoma, Bellingham and other places in this vicinity." (B. T. Galloway.) For distribution later.

QUERCUS SUBER. (Fagaceae.) 29531. Seed of the cork oak from the Almoraima cork woods, Spain. Procured by Mr. R. L. Sprague, American Consul, Gibraltar, Spain. Introduced for the work of the Forest Service in the cultivation of the cork oak in the United States. For distribution later.

VIGNA CATJANG. (Fabaceae.) 29488. Seed of a wild sweet pea from China. Presented by Rev. J. M. W. Farnham, Shanghai, China. "Seed of a wild sweet pea found on the mountain. The bloom is very fragrant." (Farnham.) Seeds olive-brown mottled with black. For distribution later.

XANTHOSOMA SP. (Araceae.) 29517. Tubers of a yautia from Paramaribo, Surinam. Presented by Mr. P. J. S. Cramer, Director of Agriculture. "Wittie. Tubers rather long and slender, surface fairly smooth; nonacrid. Flesh very white when cooked; mild and of fair flavor; small ends of tubers usually fibrous." (R. A. Young.) For distribution later.

YUCCA AUSTRALIS. (Liliaceae.) 29521. Seeds of yucca from Guajardo, about 25 miles west of Saltillo, Mexico. Procured by Mr. Thomas W. Voetter, American Consul, Saltillo. "I have been informed that the buds of flower stalks of this plant are used

for food, being taken just before the flower opens and being cooked as young squash are. The flowers themselves are also cooked and eaten. The covering of the mature fruits is also eaten, having much the same flavor as the eastern date. From the leaves of this same tree is also obtained a fiber which forms the bulk of the 'ixtle' fiber exported from this consular district." (Voetter.) For distribution later.

UNIDENTIFIED. (Zinziberaceae.) 29529. Roots of ginger from near Tsinanfu, Shantung, China. Presented by Rev. H. W. Luce, Shantung Christian University, Weihsien, China. "This light colored variety so far as I can find out is grown in sandy soil." (Luce.) Introduced for the purpose of trying ginger culture in more northern latitudes than has heretofore been tried in the United States. For distribution later.

NOTES FROM FOREIGN CORRESPONDENTS.

ALGERIA, Oued-Zenati. Mr. A. Clave, Director of the Oued-Zenati School for Boys, writes February 2 that he has not been able to get the seed of Pyrus longipes, but he sends specimens of Medicago sativa tunetana and several other plants of his locality.

FIJI, Suva. Mr. Charles H. Knowles, Superintendent of Agriculture, writes December 23, 1910, that he will be glad to send us specimens and seeds of Aleurites triloba as soon as he can obtain them. If he can find the Maba elliptica on the island of Kandavu, which he visits rather rarely, he will get it for us.

HONDURAS, Puerto Cortes. Mr. Claude I. Dawson, American Consul, sends us under date of January 26, sample of the wood of the so-called guano "palm", really Ochroma lagopus, one of the Bombacaceae. "The wood is very porous, and one of the lightest of all woods, lighter even than true cork, the specific gravity of which is 0.240, while the guano is 0.120; fibrous and very difficult to work, because of the fibers which impede the action of the tools." (Cook and Collins, Economic Plants of Porto Rico.) This specimen was secured for the Office of Pomological Investigations in the hope that the sawdust of this species may take the place of cork and the sawdust of heavier woods, for grape and other fruit packing.

INDIA, Calcutta. Major A. T. Gage, Superintendent, Royal Botanic Garden, writes January 14 that there will be no difficulty in getting for us quite a quantity of the seeds of Diospyros embryopteris (D. peregrina), as the trees are fairly common in the garden and fruit fairly freely.

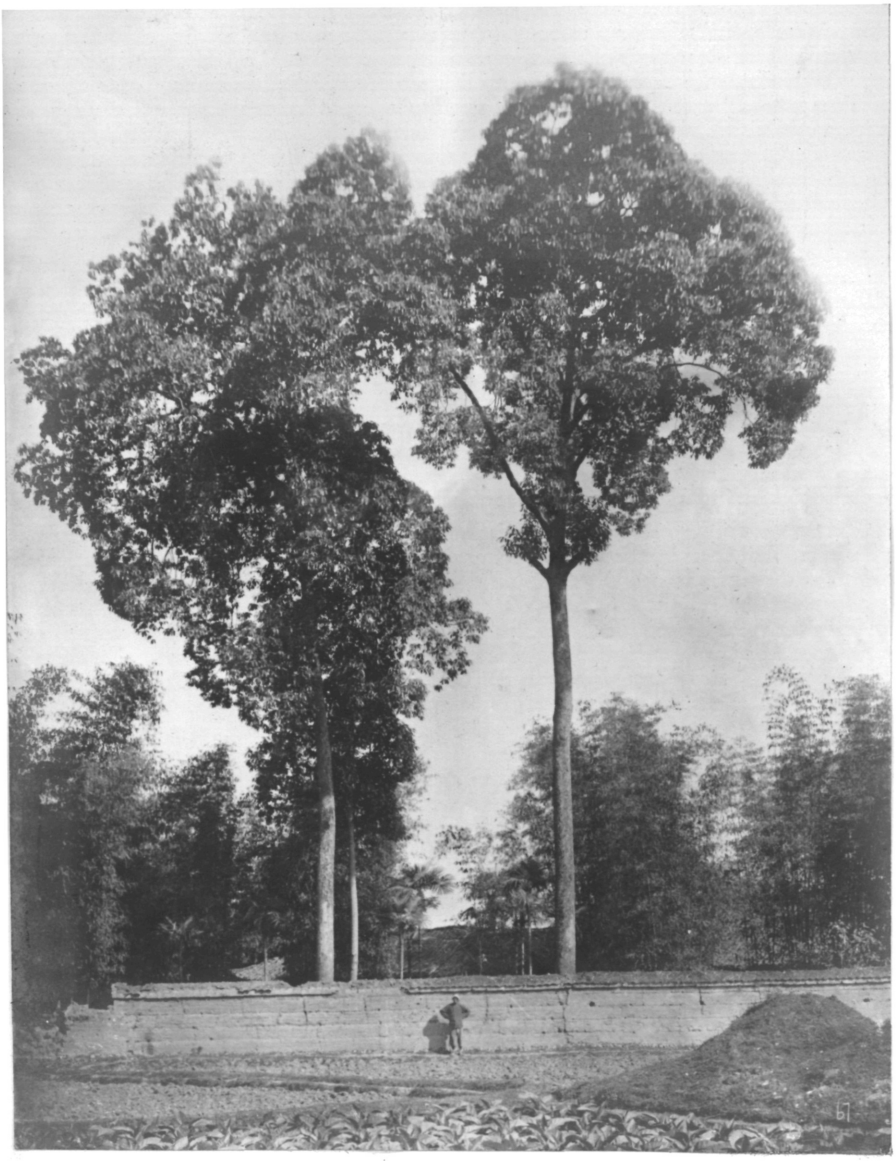
NEW SOUTH WALES, Burringbar. Mr. B. Harrison writes January 12 that four species of Carissa grow in New South Wales. The small specimen he saw of C. ovata appeared to be too insignificant either for ornamental or economic use. "There are many economic trees here, not yet known in the United States, among them being the fruit trees, Hicksbeachia pinnatifolia (red-nut), Macadamia ternifolia (Australian nut; is known in California), Adamsons, or the Sour Plum, Meston's mangosteen, native raspberries of several kinds, and many Eugenias, beautiful evergreen flowering shrubs, the fruit of most of them being edible, and native limes, etc."

NEW SOUTH WALES, Wahroonga. Mr. J. Staer writes January 16 that he will shortly send a collection of Australian grasses. He has only a small plant of Carissa brownii (or ovata) growing in his nursery, but in April or May he will make a trip to the forests where it grows, and procure seeds and plants, together with photograph and water color painting for us.

PARAGUAY, Cahi Puente. Mr. C. F. Mead writes December 26 and 30, 1910. "Of the guayaba (Psidium guajava) tree, there are at least eight varieties of which I know, all growing wild and differing both in size of tree and fruit, ranging from a shrub 2 feet high to trees 35 to 50 feet high, and the fruit from the size of a grape to the size of an orange. As regards this fruit, some doubt has arisen in my mind as to whether this guayaba found here may be the guava. In this section of Paraguay the guayaba is very scarce, but near Asuncion in towns of Aregua, Ipacarai and San Bernardino, it is very abundant growing wild, and in the latter town one may ride for miles through forests of guayaba where you can see thousands of tons of fruit on trees and in various stages of decay on ground. By first train during this week I am going to send a peon to Asuncion for medical aid and I will arrange with him to bring me as much seed and of as many different varieties as have merit. During this last week I was talking with my head capataz as regards maize and he informed me that in the Yerbales, about 10 days voyage north of Asuncion, the Indians have a class of maize, each ear of which is (don't laugh) from 30 to 36 inches long, that the plant is tall but a heavy cropper, 2 to 3 ears to each plant, and also that this kind is planted in virgin soil only. If you think it worth while, I will take a trip up that way with my capataz on conclusion of this work. I will stand all expenses as I need a vacation, though I haven't much of a hankering to mix up with those little Indians and their poisoned arrows. In about four months you will receive from me a shipment of cassava canes, or possibly seed before. This cassava matures sufficiently for eating purposes in 4½ months, is at its prime from 6th to 7th month and will not last either above or below soil over 11 months. It must be planted in poor soil or it will all run to top."

ATALANTIA GLAUCA. AUSTRALIAN DESERT KUMQUAT.

Natural size photograph of fruit from specimens presented by Mr. James Pink, Wellington Point, near Brisbane, Queensland. This very interesting citrus fruit is now introduced for the first time at the suggestion of Mr. Walter T. Swingle, because of its resistance to cold, drought, and hot spells during winter. He believes it may be of the greatest importance in the breeding of citrus fruits. The seeds, which are quite small, germinate very readily, and in ten days from the time of sowing in the greenhouse, were an inch or more in height, and of sufficient strength to be inarched on two-year-old stocks. By this means it is hoped that within two years there will be flowers sufficient for whatever crosses may be decided to be worth while. Although the fruit is small, as shown in the photograph, it is sometimes cooked and eaten by Australians, and the expressed juice of the fresh fruits is also used to make a sort of lemonade. This plant may be worthy of cultivation in the arid regions of the southwest where the temperature rarely reaches zero Fahrenheit. Plant Introduction No. 29537.



MACHILUS NANMU. NANMU TREE.

Photograph taken by Mr. E. H. Wilson, collector for the Arnold Arboretum, near Shih-Fang Hsien, Western Szechuan, China, May 19, 1908. This tree which grows in the moist climate of Szechuan, in about the latitude of New Orleans, furnishes some of the most highly prized timber used by the Chinese. The Imperial palaces are finished in this wood, the coffins of the rich, constructed of massive planks, are usually made of this wood, which is rapidly becoming scarce in its native region because of its slow growth. As the tree reaches a height of more than a hundred feet with a diameter of five feet it produces a large amount of timber per tree, but its slow growth may make it unprofitable except as an ornamental tree in this country. The first introduction of the seed has been so recent that we are not yet in position to say as to what part of the country it may be best suited for, but the very moist climate of Szechuan indicates that a considerable degree of humidity will be required. Plant Introduction No. 29485.