



PLANT IMMIGRANTS.

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Foreign Seed and Plant Introduction.

E X P L A N A T O R Y N O T E .

This multigraphed circular is made up of descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent 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. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS which will be sent you in the autumn and in which will be listed all plants available at that time. Regular requests checked off on the check list sent out with the catalogue are not kept over from year to year. If you are especially interested in some particular plant in the catalogue write and explain in detail your fitness to handle it.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

David Fairchild,
Agricultural Explorer in Charge

*Office of Foreign Seed and Plant Introduction,
Bureau of Plant Industry,
U. S. Department of Agriculture.*

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Abroma augusta (Sterculiaceae), 47349. **Abroma.** From Nice, France. Seeds presented by Dr. A. Robertson-Proschowsky, Jardin d'Acclimatation. A large spreading shrub, native of tropical Asia, with the large angled leaves and the branches covered with soft hairs. The large purple flowers occur in great profusion during the rains; and the seeds ripen in the cold season. The bark of the twigs yields a fiber, much valued for its great beauty, softness, cheapness, and durability, which might be used to advantage as a substitute for silk. The plant yields three crops a year. The bark of the root is used medicinally. (Adapted from Watt's Dictionary of the Economic Plants of India, vol. 1. p. 8.)

Achradelpha mammosa (Sapotaceae), 47424. **Sapote.** From Guayaquil, Ecuador. Seeds presented by Mr. Frederick W. Goding, American consul general. "A fruit about the size of a teacup, resembling a potato in general appearance, and having a rough, dark greenish brown skin mottled with sordid yellow. The edible portion is red, soft, and sweet, with a peculiar but pleasant flavor; in the center of the edible portion is a shuttle-shaped seed about two inches long, of a chestnut-brown color and always split along one side. Within the hard, thin, shining shell is a white kernel." (Goding.)

Annona squamosa (Annonaceae), 47434. **Sugar-apple.** From Rio de Janeiro, Brazil. Seeds presented by Mr. T. R. Day, Chief of the Industrial Department, Leopoldina Railway Co. Ltd. "Seed of the *pina* (**Fructo de Conde**), of a very special variety. This is not the very large kind, but it is the best flavored I have ever found in the country. This fruit will no doubt grow in most parts of Florida and California, and possibly might do well in Arizona under irrigation." (Day.)

Butia capitata pulposa (Phoenicaceae), 47350. **Palm.** From Nice, France. Seeds presented by Dr. A. Robertson-Proschowsky, Jardin d'Acclimatation. "A hardy palm from southern Brazil, belonging to the same group as the species commonly cultivated in California as *Cocos australis*, *C. yatay*, and *C. eriospatha*. The trunk is 6 to 12 feet tall, by $1\frac{1}{2}$ to 2 feet in diameter, with rather short, abruptly arched leaves, 6 to 9 feet long. The petioles are armed with stout spines. The fruit is yellow, about 1 inch long by $1\frac{1}{4}$ inches in diameter, and the pulp is of a texture and taste somewhat like that of the pineapple." (C. B. Doyle.)

Caesalpinia sepiaria (Caesalpinaceae), 47351. From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky, Jardin d'Acclimatation. A large, climbing, prickly bush in the Himalayas, and extending to Ava and Ceylon; it ascends to 4,000 feet in altitude. Lac is gathered on the tree in Baroda. The bark is much used for tanning and the young pods contain an essential oil; in Chumba the bruised leaves are applied to burns. It makes an impenetrable hedge. (Adapted from Watt's Dictionary of the Economic Products of India, vol. 2, p. 12.)

Cucurbita pepo (Cucurbitaceae), 47378. Squash. From Shanghai, China. Seeds presented by Mr. F. J. White, president, The Shanghai Baptist College and Theological Seminary. "This squash is a greenish bronze in color, round, and ribbed; the flesh is remarkably thick and of very good quality. There is hardly any cavity at all inside the squash." (White.)

Dioscorea sp. (Dioscoreaceae), 47398. Yam. From St. Lucia, B. W. I. Tubers presented by Mr. Samuel Rosen, New York. "A white-fleshed yam of medium size. It is quite moist when cooked, but makes an excellent dish when mashed and beaten thoroughly." (Young.)

Echium wildpretii (Boraginaceae), 47356. From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky Jardin d'Acclimatation. "This plant made its debut at Kew in 1899. It was raised there from seed sent in by Mr. Wildpret, curator of the Botanic Gardens, Orotava, Teneriffe. They were two years old when they flowered in May, and since then by sowing seeds annually, plants have been on show at Kew every spring. Even before the flower spikes develop, the plants are attractive; their leaves, covered with silky hairs, after the manner of the Silver Tree, form a handsome rosette 18 inches high and through. The flower spike adds another two feet to this height, and when the purplish pink flowers are all open, the plant is singularly handsome. I know no other like it. Certainly among the many plants grown at Kew for the conservatory, there is not one that attracts and pleases more than this *Echium*. The altitude at which it grows wild at Teneriffe has not been recorded, but it is probably some distance above sea level, and, therefore, the plant ought to be a good one for open-air gardening, if protected from the frosts." (W. Watson, Gardeners' Chronicle, Oct. 26, 1912, p. 317.)

Garcinia sp. (Clusiaceae), 47358. From Cienfuegos, Cuba. Seeds presented by Mr. Robert M. Grey, Harvard Experiment Station. "The tree, which is fairly rapid in growth, has large, leathery leaves 6 to 10 inches long. The orange-yellow fruits, borne singly or in clusters of three to five in the axils of the leaves on mature wood, are round, or tapering to an acute apex and are often over 2 inches in diameter. They are made up of three to five segments, each usually containing a large, oblong seed. The flavor of the ripe fruit is subacid and not excellent. The green fruit, when cut or injured, exudes a quantity of yellow gum." (Grey.)

Glycine priceana (Fabaceae), 47360. **Price's ground-nut.** From Hartsville, S. C. Collected by Mr. J. B. Norton, agricultural explorer for the Department, in September, 1918. "Seed from plants growing on the grounds of Mr. David R. Coker, Hartsville, S. C. I collected the original tuberous roots in October, 1917, at Bowling Green, Ky. Bowling Green is the type locality and the only known region where this wonderful bean grows wild. This plant is useful both as an ornamental and as a food plant." (Norton.) "Its tuberous roots are excellent when cooked like the West Indian yam." (Fairchild.)

Gossypium sp. (Malvaceae), 47397. **Cotton.** From Mustapha-Alger, Algiers. Seeds presented by Dr. L. Trabut. "I have received, from a correspondent at Djibouti, a cotton which he has selected and which he characterizes as 'Coton Gabod,' obtained at Djibouti, at Din Davona. It is satisfied with an annual rainfall of 300 millimeters ($11\frac{3}{4}$ in.) in a very hot country, in siliceous-clayey soil; not irrigated for two years." (Trabut.)

Gynura sp. (Asteraceae), 47416. From Philippine Islands. Seeds presented by Mr. P. J. Wester, agricultural advisor, Zamboanga. "A climber with panicles of orange-colored flowers which have a pronounced odor similar to that of the field daisy. It is very floriferous. If it succeeds it would make a very striking and attractive climber. Collected at an elevation of 1,500 feet in Mindanao." (Wester.)

Hibiscus sabdariffa (Malvaceae), 47429 & 47430. **Roselle.** From Zamboanga, P. I. Seeds presented by Mr. P. J. Wester, agricultural advisor. "Var. **Altissima.** Because of the fibrous and spiny character of the small

calyces of the two forms belonging to the **altissima**, they have no culinary value. However, their habit of growth is favorable to the production of a long fiber; and, according to Mr. M. M. Saleeby, chief of the fiber division of this Bureau, the two forms of this variety are far superior to jute and to all other varieties of **roselle** (including four from India) in habit, growth, and yield. As yet, the problem of utilization of the fiber of the **altissima** has not been carefully studied, but it is apparently suitable for all uses for which jute fiber is now employed." (Wester, Philippine Agricultural Review, June, 1914, p. 268.)

Ipomoea batatas (Convolvulaceae), 47432 & 47433. **Sweet potato.** From Mayaguez, Porto Rico. Tubers presented by Mr. T. B. McClelland, horticulturist, Porto Rico Agricultural Experiment Station. "Tubers of two varieties of the mamey type of sweet potato from the eastern part of the island. The donor distinguishes these as **mameyona** or 'large mamey' and **mameyita** or 'small mamey.' He prefers the **mameyita**, if it is eaten immediately after digging, but says that the **mameyona**, if kept for a week, has the better flavor. However that may be, both belong to the best type of Porto Rican [sweet] potato." (McClelland.)

Lithocarpus cornea (Fagaceae), 47365. From Hongkong, China. Seeds purchased from Mr. W. J. Tatcher, superintendent, Botanical & Forestry Department. "An oaklike tree with oblong, sharp-pointed evergreen leaves 2 to 4 inches long, which are smooth and green on the under side,- interesting particularly as bearing acorns as hard shelled as the nuts of the American hickory and which contain a kernel almost as sweet as the sweetest Spanish chestnut. Said to be a very showy ornamental as grown on the island of Hongkong. Young trees of this species grown from previous introduction are now growing at the following places in this country: Mitchell Station, Ala.; Los Angeles, Los Molinos, Pomona, and San Gabriel, Cal.; Merritt, Miami, Panasoffkee, and Ritta, Fla.; Pineville, Ky.; Landon, Miss.; Hope, N.M.; Sulphur, Okla.; Raywood, Tex.; and Salt Lake City, Utah." (Fairchild.) See Inventory No. 35, Pl. No. VI, for photograph of this tree.

Mammea americana (Clusiaceae), 47425. **Mamey.** From Guayaquil, Ecuador. Seeds presented by Mr. Frederic W. Goding, American consul general. "From the injured



THE NANKING CABBAGE, A WINTER VARIETY OF PAI TS'AL.
(*BRASSICA PEKINENSIS*. SEE S. P. I. NO. 45189.)

The dark-green bullate foliage with clear white midribs, long, wide, blanched stalks and celerylike habit make this variety, which is cultivated for greens, very attractive. Sown out in the fall, it should make an excellent early winter crop for the South Atlantic and Gulf States. (Photographed by Mr. Bisset at Brooksville, Fla., December, 1917; P23816FS.)



THE MANZANILLA, A CENTRAL AMERICAN FRUIT TREE. (CRATAEGUS STIPULOSA. SEE S. P. I. NO. 45575.)

The manzanilla, a species of hawthorn, grows wild and is also cultivated in the highlands of Guatemala. The fruits are prized by the Guatemalans for jellies and jams, but are also eaten stewed. Average fruits are an inch or more in diameter, yellow, with russet dots and a blushed cheek. The plant is easily grown and should succeed in California, Florida, and elsewhere in the subtropics. (Photographed by Wilson Popenoe at Santa Maria de Jesus, Guatemala, October 20, 1916; P16881FS.)

skin of the *mamey de cartagena* exudes a resinous, gummy juice which is much used for killing chigoes and lice when applied locally. Animals suffering with mange and sheep ticks are cured by washing in a decoction made by boiling the seed in water; if, however, ulcers are present, it should not be employed - a case is known of a dog suffering from mange and ulcers, but otherwise healthy, that died in two days after having been bathed twice in the solution. Used in the form of a cerate, it kills many varieties of insects. An infusion of the fresh or dry leaves, (one handful to a pint of water, in cupful doses) given during the intervals of fever, has repeatedly cured intermittents and remittents which did not yield to the quinine salts. The treatment should be continued for several days. A yellow, violet-scented liquor is made from the fruit and flowers, and is a very delicious beverage. The fruit eaten green or ripe, or in preserves, possesses beneficial stomachic qualities." (Goding.)

Pistacia chinensis (Anacardiaceae), 47362. **Chinese pistache.** From Peking, China. Seeds presented by Mr. Han, assistant director of the Chinese Forestry Bureau, through Mr. Paul S. Reinsch, American Minister at Peking. "The pistache tree is a fairly rapid grower. Its wood is good, durable, and much valued in making household furniture and agricultural implements. Its shoots are edible, and oil is extracted from its seeds. It is found in the central parts of China, especially along the northern side of the Yangtze valley. It is of great economic value." (Han.)

Phyllostachys pubescens (Poaceae), 47370. **Bamboo.** From Anderson, S. C. Rhizomes purchased from Mr. Rufus Fant. "Mr. Fant's account of this clump [from which these rhizomes were taken] is that about twenty years ago he saw the Giant Japanese Bamboo advertised in a florists' paper by H. H. Berger of San Francisco. He sent the money and bought a plant or rather a piece of rhizome; it died. He sent again and got a pot-grown plant; he was afraid that this was not hardy, so kept it potted for about five years, until it outgrew the pot, and then planted it out of doors where it now stands. In 1912 he formed the idea of starting a grove along a little stream which runs through Silver Brook Cemetery, not far from his house. So he took up a clump of bamboo in February and planted it there,-

we counted, together, 266 good-sized canes about thirty feet tall. One is $12\frac{1}{2}$ inches in circumference 1 inch above the ground. The range is from 5 to $12\frac{1}{2}$ inches in circumference. On each side of his house, Mr. Fant has plantings of the true Moso bamboo, *Phyllostachys pubescens*, or *P. mitis* as it was formerly called. On the right the clump had been cut back and was low and bushy; on the left the culms were tall, almost to the roof of the two-story house. Mr. Fant explained that the clump on the right had been killed or at least seriously injured by a freeze of 2° F., which occurred February 15, 1918. He had cut the bamboo to the ground as soon as the new growth began, April 15, so that the dead culms were annoying for only two months. By May 10, the bushy growth had attained its present height. This is an important fact, for it indicates how quick will be the recovery from frost injury and of how little consequence is the fact that once in a while the grove will be killed down. The house protected the clump on the sheltered side." (Fairchild, Report of Southern Trip, 1918.)

Rosa gentiliana (Rosaceae), 47359. **Rose.** From Witcombe, Gloucester, England. Seeds presented by Lady Harriet Thiselton-Dyer, "The Ferns." A rose which is abundant in the mountainous region of western Hupeh and eastern Szechuan, where it forms tangled masses 6 meters ($18\frac{1}{4}$ ft.) or more in height. The numerous, large, white flowers are very fragrant and the anthers are golden yellow. The species is easily distinguished by its glabrous pale gray shoots and the three- to five-foliate leaves which are shining green above and very pallid beneath. (Adapted from Sargent, *Plantae Wilsonianae*, vol. 2, p. 312.)

Xanthosoma sp. (Araceae), 47361. **Yautia.** From Port-of-Spain, Trinidad, B. W. I. Corms presented by Mr. Claude Connell, through Mr. F. W. Urich, entomologist, Board of Agriculture. "A *yautia*, with reddish buds, received under the name of 'nut eddo.' The flesh of the corms is yellowish when cooked and of fair flavor." (Young.)

Notes on Behavior of Previous Introductions.

In a letter dated April 9, 1919, Mr. A. B. Stout, director of the laboratories, New York Botanical Garden, makes the following report: "I am having a

great time with the Chinese cabbage (*Brassica pekinensis*), the seed of which I obtained from your Department. I am sure you will be interested to hear a word about it. It turns out to be a most fascinating plant for the investigation of that type of sterility which I have been calling physiological incompatibility. It is especially favorable for such study for I can grow the plants in pots and get them to bloom any time in the year without heading up. I hope to publish a preliminary report on the plant sometime within the next year. As for growing the Chinese cabbage in garden culture, I found I could force them as one does early head lettuce and get fine cabbages before the hot season comes on. The plants were grown under glass until ready for the second transplanting, when they were put in the field. I also grew a crop late in autumn and banked them with leaves so we had fine heads to eat until New Year's dinner used up the last. Four plants of the late crop failed to form heads. These were left without protection and lived through the winter. I shall be interested to see what they do this spring. Evidently they will bloom without forming heads. My experience indicates that the plant can be forced quite successfully in spring. Of course, in such a plant as Chinese cabbage, the condition of incompatibility is not directly involved in the commercial crop. It might, however, develop during the isolation of certain strains to the extent of interfering with the maintenance of the strain. In plants in which the fruit or the seeds constitute the commercial product, and especially when the method of propagation is vegetative, incompatibility may limit very much the product as it does in so many of our fruits." - For photograph of an interesting form of this vegetable see **Pl. 239**.

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BUREAU OF PLANT INDUSTRY
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WASHINGTON, D. C.

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