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PLANT IMMIGRANTS.

No. 170. JUNE, 1920.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is largely made up from notes received from agricultural explorers, foreign correspondents, cooperators, and others, relative to the more important plants which have recently been received by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture; in it are also contained accounts of the behavior in America of plants previously introduced. Descriptions appearing here are revised and published later in the Inventory of Seeds and Plants Imported.

Applications from experimenters for plants or seeds described in these pages may be made to this Office at any time. As they are received the requests are placed on file and when the material is ready for the use of experimenters it is sent to those who seem best situated and best prepared to care for it. The plants or seeds here described (except such as are distributed direct or are turned over to specialists in the Department who are working on investigational problems) are propagated at our Plant Introduction Field Stations, and when ready to be distributed are listed in our annual check lists, copies of which are sent to experimenters in the late fall. It is not necessary, however, to await the receipt of these lists should one desire to apply for plants which are described herein.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant breeders and experimenters. Every effort will be made to fill specific requests for experimental quantities of new or rare foreign seeds or plants.

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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Angophora cordifolia (Myrtaceae), 49841. From Sydney, New South Wales. Seeds presented by Mr. Hugh Dixson, Abergeldie, Summer Hill. "An Australian plant which grows in rather poor sandy sandstone country, seldom above 8 feet in height. One of my plants flowered in 2 years, when about 3 feet high. Has large bunches of cream-white eucalyptuslike flowers with honey perfume, very attractive to bees and other insects. Young plants must not be cut back, for there is apparently no bud at the base of the leaves till it reaches the flowering stage. These seeds are about 2 years old. I have raised plants from this lot within the past month. Ten degrees of frost should not hurt them when above the seedling stage." (Dixson.)

Barleria lupulina (Acanthaceae), 49852. From Lamao, Bataan, Philippine Islands. Seeds presented by Mr. P. J. Wester, agricultural advisor, Lamao Horticultural Station. A very handsome plant native to Mauritius, almost always in flower and particularly remarkable for its rich, deep green, lanceolate leaves marked with bright red midribs. It forms a very compact leafy bush 2 feet in height, is not attacked by common hot-house insects, thrives in any soil with little or no cultivation, and is readily propagated from cuttings. (Adapted from Botanical Register, pl. 1483.)

Cyamopsis tetragonoloba (Fabaceae), 49900. **Guar**. From Poona, Bombay Presidency, India. Seeds presented by Mr. A. A. Vasavada, Agricultural Branch. "Gawar Pardeshi." (Vasavada.)

"An erect East Indian leguminous annual, with long, straight stems bearing an enormous number of pods, each containing about 7 pale, angular seeds. The plant grows 3 to 6 feet in height, and in India is cultivated both for green forage and for the seed which is used mainly for feeding cattle, but also as human food. **Guar** may be grown anywhere in the country where cowpeas succeed, and is more drought-resistant than any other annual legume. It may be utilized as hay, pasturage, or as silage." (C. V. Piper.)

Doryanthes palmeri (Amaryllidaceae), 49859. From Melbourne, Victoria. Seeds presented by Mr. F. H. Baker. A gigantic showy amaryllid with very numerous ribbed leaves 6 to 8 feet long and 4 to 6 inches wide. The stem or scape is 8 to 10 feet high and bears a compact inflorescence 3 feet long, composed of short, few-

flowered spikes. The scarlet perianth segments are pale red within. Native of New South Wales. (Adapted from Curtis's Botanical Magazine, pl. 6665.)

Eucalyptus ficifolia (Myrtaceae), 49842. From Sydney, New South Wales. Seeds presented by Mr. Hugh Dixson, Abergeldie, Summer Hill. "A western Australian plant, commonly known as 'the red flowering gum.' The plant will take at least five or six years to reach the flowering stage, but then it is a blaze of scarlet. The few trees I have seen flowering in the vicinity of Sydney were not above 10 to 15 feet high, with about the same spread. I think that they have been checked to make them spread. They grow in any fair soil, and 10 degrees of frost should not hurt the plants when above seedling stage. The seeds take three years to ripen though I have just raised a plant or two from two-year-old capsules grown near here." (Dixson.)

A rare and showy plant with a striking display of brilliant scarlet flowers in branching heads. They are produced from a cup-shaped receptacle provided with a capsule which falls off as the flowers expand. When the flower is fully open the green interior of the receptacle is seen, which adds to the beauty of the flower. The gray-green leaves with red midribs are also handsome. (Adapted from The Garden, vol. 71, p. 441.)

Geijera parviflora (Rutaceae), 49892. From Nyngan, New South Wales. Seeds presented by the Forestry Commission through Mr. George Valder, director of agriculture. "Wilga." (Valder.)

A tall shrub or tree, native to the interior of New South Wales, where it reaches the height of about 30 feet. It has slender, pendulous branches and narrow leaves 3 to 6 inches long; a well-developed specimen has a highly ornamental appearance, with something of the aspect of a weeping willow. It has remarkable drought-enduring qualities; the leaves are often fed to sheep which are very fond of them. (Adapted from the Pastoral Finance Association Magazine, vol. 5, p. 132.)

Gloriosa sp. (Melanthiaceae), 49874. From Elizabethville, Belgian Kongo. Bulbs collected by Dr. H. L. Shantz, agricultural explorer. "No. 360. This is the most prominent lily at this period. Some of the plants bear as many as seven or eight flowers which vary in color from all red to red-and-yellow. It is an excep-

THE GOA BEAN, A NEW VEGETABLE FROM THE PHILIPPINES.

(*Botor tetragonoloba* (L.) Kuntze. See S. P. I. No. 45928.)

When these square green pods with "frills" at each corner are "strung," just as snap beans are treated and cooked in the same way, they make an excellent vegetable. At Brooksville, Fla., the season may be too short for their profitable culture, but the plant deserves a wider test in southern Florida. Its flowers are very attractive and would almost pass for sweet peas. (Photographed by David Fairchild, Plant Introduction Field Station, Brooksville, Fla., November 20, 1918; P24633FS.)

A ROW OF THE GOA BEAN.

(*Botor tetragonoloba* (L.) Kuntze. See S. P. I. No. 45928.)

View of a row of botor plants, showing their possibilities as a cover crop in nursery rows and orchards. Pods just filling. This is the first experimental planting of this bean in America, and its further trial will be necessary to determine its final place in our agriculture. In the true Tropics its fleshy root, which resembles a sweet potato in shape, is cooked and eaten, as well as the green pods, which are used in place of snap beans. Presented by the College of Agriculture of Los Banos, Philippine Islands. (Photographed by David Fairchild, Brooksville, Fla., November 20, 1918; P24634FS.)

tionally good lily for cut flowers, since it keeps perfectly for a long time." (Shantz.)

Linum narbonense (Linaceae), 49898. **Flax.** From Verrieres, France. Seed presented by Mr. Jacques de Vilmorin. A most desirable plant from southern Europe, with linear leaves and a graceful drooping habit; it is 2½ feet across and 18 inches high. The flowers which appear throughout the summer, are arranged in a loose panicle with long pedicels. Each flower is 1½ inches across, bright azure blue, somewhat paler beneath, with white anthers and a white spot in the center of each flower. (Adapted from The Garden, vol. 52, p. 401.)

Oryza sativa (Poaceae), 49880. **Rice.** From Kindu, Belgian Kongo. Collected by Dr. H. L. Shantz, agricultural explorer. "No. 502. Rice grown by natives. This is the most important crop of this section; it is grown following corn (apparently sown at the same time), and on the higher better drained land; presents a fine appearance. I have noticed no disease on either rice or corn." (Shantz.)

Owenia acidula (Meliaceae), 49894. From Sydney, New South Wales. Seeds presented by the Forestry Commission through Mr. George Valder, director of agriculture. The Gruie, or sour-plum, is a highly ornamental shade tree, native to New South Wales, where it grows to be about 25 feet in height. It is regarded as a good fodder tree, since stock are very fond of its leaves. The ripe fruit is 3 to 4 inches in circumference, rich crimson, and the succulent outer portion is rather acidulous in flavor. The stone is exceedingly hard; it is very difficult to propagate the tree by ordinary methods. (Adapted from the Pastoral Finance Association Magazine, vol. 5, No. 18, p.33.)

Pinus gerardiana (Pinaceae), 49889. **Chilgoza pine.** From Rawalpindi, Punjab, India. Seeds presented by Dr. Ralph R. Stewart, Gordon College. The **Chilgoza pine** is a moderate-sized tree found native in the inner arid valleys of the northwestern Himalayas, generally at altitudes of 6,000 to 12,000 feet. It is quite hardy, enduring high winds and severe winters with heavy snows. The chief product of this tree is the edible seed, nearly an inch long; these are very nutritious and agreeable in flavor, forming the staple food of the natives. (Adapted from a letter of Mr. W. H. Michael, consul general,

Calcutta, and from India Forest Department Bulletin, No. 7, 1906.)

Prosopis dulcis (Mimosaceae), 50096. From La Plata, Argentina. Seeds presented by Dr. Carlos Spegazzini. A thorny tree, 60 feet high, with very deep roots, adapted for live fences. The hard, strong, durable wood, when polished, resembles mahogany. The sweetish pods, which are rich in protein, grape-sugar, starch, pectin, potash, lime, and phosphoric acid, are used for cattle fodder, and even for human food; a sparkling drink called "aloja" is made from the pods. The bark, leaves, and pods yield tannin. (Adapted from Mueller, Select Extra-Tropical Plants, p. 421.)

Trichosanthes quinquangulata (Cucurbitaceae), 49858. From Littleriver, Fla. Seeds presented by Mr. J. J. Soar, Littleriver Nurseries, through Dr. David Fairchild. "These seeds were given to me by Mr. Soar, who says that the plant came from the Philippines. It is the showiest gourd I have ever seen, being a bright red,- as red as the reddest apple. As a decorative plant it should be very valuable, and the fruits would make the prettiest kind of decorations for Christmas trees." (Fairchild.)

For previous introduction see S. P. I. No. 46642, Plant Immigrants, No. 151, November, 1918, p. 1374.

Notes from Correspondents.

The following account of the Trinidad dasheen (*Colocasia esculenta*), S. P. I. No. 15395, is excerpted from the 1918 report of the director of the Botanic Gardens, Sydney, New South Wales:

"In April, 1917, eight pounds of dasheen tubers were received from Washington. Of these, thirty-six sound tubers, averaging 3 ounces each, were selected and kept in a dry place like Dahlia tubers until the middle of August, when they were started into growth in a cold frame facing north. In the middle of September they were planted in rows 4 feet apart and 2 feet apart in the row, in soil manured at the rate of 40 tons per acre with rotted stable dung. They matured in June, 1918, and when dug, without disease or rot, weighed 182 pounds, two-thirds being of a culinary size, and the remainder offsets suitable for planting. This proved that the vegetable can be grown in one season, taking eight or nine months to mature.

"In another trial, a few plants proved to be gross feeders without injury to the tuber, and without any apparent difference in flavor. In the growing season they were watered occasionally with liquid manure, and in January given a dressing of blood and bone. They also had copious supplies of water.

"A further use of the dasheen is in the forcing and blanching of its shoots. A trial was given by planting three corms weighing 2 pounds each, kept dormant till December in white sand mixed with a little sphagnum moss in open ground, and over these was placed a 12-inch drain pipe with a bag on the top. The heat conserved in the pipe must have been near 100° F. Shoots 6 inches long were cut in twenty-seven days, and at intervals of growth. The shoots were cooked and eaten, and proved all that was recommended.

"The plant is decorative, is easily grown, and would make an excellent vegetable in districts where only one crop of potatoes can be grown in a year. It is a fine-flavored variety of the taro, eats with a nutty flavor, is very mealy and has more robust foliage than the common taro.

Yam Culture in the West Indies.

In a note to the Proceedings of the Agricultural Society of Trinidad and Tobago, February, 1920, Mr. H. H. Morton, writes as follows:

"I dug my last yam (*Dioscorea sp.*) of the 1919 crop on the second of February. From a space measuring 37 square rods 4,051 pounds were dug, of which 1,440 pounds are very fine Chinese, or 'potato,' yams. My largest 'Lisbon' weighed 31 pounds net. From experience I find that planting in trenches is more profitable than other methods. Each morning a grass-cart load of stable stuff is unloaded into the trenches for the next crop. It is also found that planting 2½ feet apart pays better than 3 feet; intensive cultivation, and weeding the banks regularly once a month, from May to October, are very worth while. Seed selection is also most important. Yams planted near trees, or that get shade of any kind, give very poor results. Yams keep very well for one year. When shoots appear early in March, April, and May, break off carefully. The longer yams are kept the more mellow they get, and are at their best by October or November. Chinese yams, when well cooked, boiled, roasted, etc., are as fine as the best ordinary northern potato, and better than potatoes that have been imported here."

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BUREAU OF PLANT INDUSTRY
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
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