PLANT IMMIGRANTS.

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Plates:

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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Acacia scorpioides (Mimosaceae), 50110. **Babul.** From Burttholm, Vereeniging, Transvaal. Seeds presented by Mr. J. Burtt-Davy. "Variety Kraussiana from Waterburg District, Transvaal." (Burtt-Davy.)

The typical form of this species is a pubescent yellow-flowered shrub which produces the white transparent gum arabic called gum-thur. The wood is strong and durable, and is used for many purposes. A decoction of the bark is used for soap, and the pods are used for tanning. (Adapted from Don, General History of Dichlamydeous Plants, vol. 2. p. 414; and Holland, Useful Plants of Nigeria, pt. 2, p. 288.)

Acanthosicyos horrida (Cucurbitaceae), 50115. From Burttholm, Vereeniging, Transvaal. Seeds presented by Mr. J. Burtt-Davy. "Narra seeds; Protectorate of Southwest Africa. A very hot, arid region." (Burtt-Davy.)

This plant, which belongs to the gourd family, is found on the dunes on the coast of the Protectorate of Southwest Africa; it continues to grow with the height of the dune, sending down roots to a considerable depth. The natives are very fond of the juicy flesh of the roundish fruit, which is about 9 inches in diameter. The seeds, which are very nutritious, have been used by Europeans in Cape Town as a substitute for almonds, and the natives are very fond of them. (Adapted from Kew, Bulletin of Miscellaneous Information, 1907, p. 342.)

Astrebla pectinata curvifolia (Poaceae), 50340. **Grass.** From Brisbane, Queensland. Seeds presented by Mr. C. T. White, government botanist. "Curly Mitchell grass." (White.)

One of the best pasture grasses of Queensland, forming erect tufts, 1 to 2 feet high, with narrow, much-curved leaves and woolly spikelets. The seeds furnished the Queensland aborigines with a large proportion of their food. (Adapted from Bailey, Queensland Flora, pt. 6, p. 1897.)

Brachystegia sp. (Caesalpiniaceae), 50128. From Burttholm, Vereeniging, Transvaal. Seeds presented by Mr. J. Burtt-Davy. "A tree known as 'Bangiri,' found at Villa Fontes on the Zambezi River. Rather like a poplar but with darker leaves. The wood seems rather soft, and the bark scales off like silver paper. The tree grows about 40 or 50 feet tall, perhaps bigger, and the boys say that the natives use them to make canoes. Collected by R. Gordon." (Burtt-Davy.)

Clematis montevidensis (Ranunculaceae), 50391. **Clematis.** From Montevideo, Uruguay. Seeds presented by Mr. Luis Guillot, Direccion General de Paseos Publicos. A very attractive clematis found in thickets in various parts of Uruguay, especially near the town of Salto, where it climbs the trees and shrubs. The large whitish-yellow flowers are almost an inch in diameter, and are borne in axillary and terminal clusters. The ashy-green leaves are either entire or more or less three-lobed. (Adapted from Arechavaleta, Flora Uruguaya, vol. 1, p. 24.)

Eucalyptus tereticornis (Myrtaceae), 50347. From Kulare, via Cairns, Queensland. Seeds presented by Mr. J. A. Hamilton.

"This tree is usually not more than 100 feet high in Australia. It grows best near the coast, but endures the dry heat of the interior valleys. The trees of this species furnish an excellent red timber which is very hard and durable." (McClatchie, Eucalypts Cultivated in the United States, Bulletin No. 35, U. S. Bureau of Forestry, p. 81.)

Guizotia abyssinica (Asteraceae), 50155. From Burtt-holm, Vereeniging, Transvaal. Seeds presented by Mr. J. Burtt-Davy. "'Ramtil.' An African oil seed." (Burtt-Davy.)

An annual composite, native to tropical Africa but cultivated in most of the provinces of India for the sake of the oil-producing seeds. The seed is sown from June to August and harvested in November and December, and prefers light sandy soil. The pale yellow oil is used for making paints, for lubrication, and for lighting purposes. (Adapted from Watt, Dictionary of the Economic products of India, vol. 4, p. 186.)

Hibiscus mutabilis (Malvaceae), 50156. From Elizabethville, Belgian Kongo. Seeds presented by Mr. J. Burtt-Davy. A tall East Indian shrub with large, broad, cordate leaves and large white flowers which change to red. It blooms in summer and late autumn, and is considerably planted in gardens and hedges in the Bermudas. (Adapted from Britton, Flora of Bermuda, p. 238.)

Indigofera dosua tomentosa (Fabaceae), 50369. From Darjiling, India. Seeds presented by Mr. G. H. Cave, curator, Lloyd Botanic Garden. A shrub of the temperate

THE PICKLED MUMES OF JAPAN.

(*Prunus mume* Sieb. and Zucc. See S. P. I. No. 46694.)

It is hard to realize that there is a cultivated fruit so common in Japan as to form in its pickled condition part of the ration of the Japanese Army and yet be almost absolutely unknown in America. This fruit has a sour taste which is unlike that of any other pickle. When eaten with meats a taste for it can soon be cultivated. Inasmuch as the trees which bear it are hardy and apparently crown-gall resistant, this species of Prunus, belonging to the apricot rather than to the plum class, would appear to be worthy of our attention for stock purposes. (Photographed by E. L. Crandall, October 21, 1918; P24327FS.)

CALCUTTA BAMBOO, 18 MONTHS OLD FROM SEED.

(*Bambos tulda* Roxb. See S. P. I. No. 44240.)

The Japanese timber bamboos as a rule produce seed only at long intervals. This Burmese species seeds oftener, and a bushel of its seed was secured in 1916 and planted in a seed bed in the Brooksville Plant Introduction Garden where it was carefully watched. It made a remarkable growth the first season. It was killed back in February, 1917, but has recovered and has made a growth of 13 feet. It has the property of hardening its stems or culms while still green. It produces the best material for the manufacture of split bamboo poles. Near Orlando, at Dr. Nehrling's place, this species has made a growth of 50 feet, and appears to be one of the best species yet introduced into America. Large clumps have been established in Panama and Porto Rico. See S. P. I. No. 21002. (Photographed by David Fairchild, Brooksville, Fla., November 21, 1918; P24648FS.)

central and eastern Himalayas at altitudes of 6,000 to 8,000 feet, with its branches clothed with silky pubescence. The leaves are 6 to 9 inches long composed of 41 to 51 leaflets, each an inch long. The racemes are over an inch in length; the bracts are densely brown-velvety, with a very long rigid point. The flowers are said to be eaten in Kangra as a potherb, and the shrub is prized as a fodder for sheep and goats. (Adapted from Hooker, Flora of British India, vol. 2, p. 102; and Watt, Dictionary of the Economic Products of India, vol. 4, p. 385.)

Ipomoea sp. (Convolvulaceae), 50310. **Mornng-glory.** From Coban, Guatemala. Seeds presented by Mr. Harry Johnson. "A rather vigorous vine not more than 25 feet long in the specimens seen, with leaves 2½ inches in length. The flowers, which are borne in clusters of two or more on 3-inch pedicels, are 2½ inches in diameter, salver shaped, and are a peculiar shade of terra cotta, which is a novel color. It is quite free-flowering and here it is a perennial. I have seen it only in the hot lowlands. Seeds collected at Papalha." (Johnson.)

Kokia drynarioides (Malvaceae), 50624. **Kokio.** From Honolulu, Hawaii. Seeds presented by Mr. J. F. Rock, botanist, College of Hawaii. "Seeds from a cultivated tree on Molokai." (Rock.)

An interesting tree with long-petioled, cordate leaves and red, silky flowers. The seeds in the thick woody ovoid capsules are covered with a short reddish-brown tomentum. Several trees occurred on the west end of Molokai at Mahana but have now died owing to the ravages of cattle, sheep, and goats, which eat off the bark and leaves. (Adapted from Rock, The Indigenous Trees of the Hawaiian Islands, p. 307.)

For previous introduction see S.P.I. No.47223, Plant Immigrants, No. 157, May, 1919, p. 1432.

Lilium philippinense (Liliaceae), 50311. **Benguet lily.** From Manila, Philippine Islands. Bulbs presented by Mr. M.J.Oteyza, forester in charge of the Baguio District in Benguet, Luzon, through Mr. E. D. Merrill, director, Bureau of Science. A very beautiful hardy white lily with a fragrance indistinguishable from that of a gardenia. The plant is exceedingly dainty with slender recurving leaves not more than one-fifth of an inch wide. The flowers are 8 inches long with a very slender tube; the segments are spread out only near the apex. The

bulbs will flower in less than half the time required to force *Lilium longiflorum*. (Adapted from Gardeners' Chronicle, 3d ser., vol.36, p. 210.)

For previous introduction see S. P. I. No. 45570, Plant Immigrants, No. 140, December, 1917, p.1259.

Prosopis vidaliana (Mimosaceae), 50381. **Aroma**. From Lamao, Bataan, Philippine Islands. Seeds presented by Mr. P. J. Wester, Lamao Horticultural Station, Manila Bureau of Agriculture. "A tall, spiny shrub of rapid growth and with long, arching branches, found growing on the beach. The plant grows luxuriantly on poor sandy land and is of fair value as a sand binder. Properly trimmed it is an attractive ornamental shrub that should be of value in extreme South Florida. If sufficiently hardy it would make a pretty good live fence." (Wester.)

Rubus sp. (Rosaceae), 50328. **Blackberry**. From Pancajche, Alta Verapaz, Guatemala. Seeds presented by Mr. Harry Johnson. "This blackberry was collected at Tactic, Alta Verapaz, at an altitude of 5,000 to 6,000 feet. A remarkably fruitful blackberry of vigorous growth, with canes up to an inch in diameter and sharp, hooked spines which are not very numerous. The fruits, which are borne in big terminal clusters of 15 to 35 berries, are of good flavor, and rather long. The seeds are not objectionable as in so many cultivated varieties." (Johnson.)

Rubus veitchii (Rosaceae), 50304. From Kew, England. Seeds presented by Sir David Prain, director, Royal Botanic Garden. One of the handsomest of all the Chinese brambles. The plants grow to a height of 6 to 7 feet, have blue-white stems and attractive much-divided fernlike foliage. At first erect, the stems become gracefully drooping with age. Both stems and petioles are very spiny. The pinnate leaves are dark green above and white beneath. The purple flowers are borne in small terminal panicles; the blue-black fruits are of moderate size. (Adapted from Gardeners' Chronicle, 3d ser., vol. 51, p. 148.)

Saccharum officinarum (Poaceae), 50375. **Sugar cane**. From Coimbatore, South India. Cuttings presented by Mr. T. S. Venkatraman, Agricultural College. "'Velai.' A very good cane analyzing on the average 17 per cent sucrose and sometimes even 19 per cent." (Venkatraman.)

"Indigenous Indian cane of the type of the Japanese forage cane which seems to be immune to the mosaic disease which apparently attacks more or less severely all other sugar cane types." (C. O. Townsend.)

Solanum tuberosum (Solanaceae), 50307. **Potato.** From Teteko, New Zealand. Tubers presented by Mr. Charles G. Hallett. "Tubers of a peculiar potato that grows in this district. I was given one little tuber by a government overseer of rabbiters, who had taken some tubers from the spring in which they grow and had grown them in his garden for a year or so. He assured me that frost does not affect the plants when growing in this spring. The tubers I am forwarding you grew in my garden from the one I received from the rabbiter, so they have been out of water for two or three generations." (Hallett.)

"On the northern side of the Rangitaiki River, in the Bay of Plenty district, opposite the old Maori settlement Waiohau, where a splendid spring of fresh water issues from the base of a hill and flows between banks heavily fringed with watercress to the near-by river, a remarkable instance of a plant forsaking its normal environment may be observed. There watercress and potato plants flourish together, and tubers are found among the cress roots from 12 inches to 18 inches under water. Some of the tubers are almost in midstream, others may be found snuggled into the bank fiber, and the foliage of cress and potato mingle on the water surface. It may be that the plants are dependent for their growth upon the earthy particles held by the cress roots, and also that there is some fertilizing quality in the water which drains from the great volcanic area. The potatoes when cooked are not at all mealy, but waxy. They grow to a fair size, and are fit for eating as early as August.

"I forwarded some of the tubers for testing at the Moumahaki Experimental Farm last season. The manager's report on the trial is as follows:

"'Some of the "water-potato" tubers were planted on August 31, 1916, in the potato variety trials, having the same treatment, soil, and manures as the sixty-six other varieties planted on the same date. The potato in question came away vigorously, and is distinct in foliage, with a large blue flower, bearing seed-apples naturally. The crop was lifted on February 6, 1917, and was free from disease. The yield was as follows: marketable tubers (table and seed), at the rate

of 11 tons per acre; pig-potatoes, 1.87 tons: total, 12.87 tons. The cooking test made on February 6, by boiling, showed that the potatoes kept their color twenty-four hours, but they could not be classed as good cookers. The starch content is believed to be high. About the same date one root was lifted, and the tubers were put into running stream water. In less than a month the whole of the tubers had rotted.'

"Despite the negative result recorded in the last part of this report, the circumstances surrounding the growth of the tubers in the Rangitaiki spring may indicate, if only slightly, a possible reversion of this long-domesticated plant to an ancestral habit." (New Zealand Journal of Agriculture, vol. 15, p. 209.)

Notes from Correspondents.

In a letter dated May 1, 1920, Mr. Charles T. Simpson, Littleriver, Fla., writes:

"I have in my grounds a single specimen of an Acrocomia which I received from the Royal Palm Nurseries some seven or eight years ago with the name *Acrocomia totai*. The plant was not in very thrifty condition but was duly planted in the pine land near my house. My experience with the Acrocomias is that when young they are slow growers but that as soon as they begin to really form a trunk they push up with astonishing rapidity. This specimen scarcely grew until about two years ago when it began to put on healthy, vigorous growth and is now over 7 feet high, with a trunk diameter at the ground of 9 inches. During this time it has had very little cultivation and no fertilizer except a small amount of seaweed put around it as a mulch. It has never been watered except when it was planted.

"I have two other so-called species of Acrocomia in my grounds, A. *media*, which I raised from seed brought from Porto Rico, and a plant named *A. sclerocarpa* from the Royal Palm Nurseries. Five seeds of the former were sent to me from the Department of Agriculture, perhaps eight years ago. As they were very hard I tried the experiment of cracking two of them with a hammer, one of which I slightly injured; the other came up shortly and after some four or more years of slow growth is now pushing ahead at a tremendous rate. Measuring in the bases of the leaves, it is about 2 feet in diameter at the ground, and nearly 26 feet high. It is the fastest-growing palm I have. The other 3 seeds were

planted just as received but have never come up.

"According to Beccari, The Palms Indigenous to Cuba, p. 367, this is identical with *Acrocomia aculeata*, the commonest form of the genus in Cuba, whose seeds, I am told, are eagerly devoured by hogs. All three of the species in my grounds are quite hardy,- none were injured to any extent during the very severe freeze of February 3, 1917.

"So far, I know of no insect or disease which troubles the Acrocomias in Florida. Certainly no person or domestic animal would trouble them for they are armed in every part of the trunks and petioles with long, villainous spines. However, they are stately, elegant palms and are not only ornamental but probably would be found useful if extensively cultivated in Florida.

"In Cuba, where 2 species (*A. crispa* and *A. aculeata*) grow somewhat sparingly, they bear abundant crops of large seeds, often coming up in pastures and cultivated fields. I see no reason why the 4 species I have mentioned might not be successfully grown in Lower Florida, as they flourish on poor pine land, and no doubt would do well on hammock; they grow very rapidly, with little fertilizer or care and would doubtless prove generally hardy." (Simpson.)

Notes on Behavior of Previous Introductions.

Interesting reports on the Methley plum, *Prunus salicina* x *cerasifera myrobalana*, have been received recently.

On June 28, 1920, Mr. J. S. Armstrong, Armstrong Nurseries, Ontario, Calif., states:

"Some years ago the Department sent us the Methley plum, S.P.I. No. 31652. This plum is fruiting splendidly and is of very good quality, although it is not as large as the 'Santa Rosa.' This may be due to its over-bearing. We have the trees in our test orchard and are planning to propagate from it. It ripened here this year from June 20 to July 1."

Mr. J. F. Keltch, of Brayton, Tenn., writes, July 7, 1920:

"I am sending you some of the fruit of my Methley plum, S.P.I. No 31652. We think they are fine. They are the best plums in this country, and are extremely popular. My tree is healthy and is growing well. I believe I could sell 500 trees if I had them."

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

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