UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION.

NO. 64.

BULLETIN OF FOREIGN PLANT INTRODUCTIONS.

June 16 to June 30, 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 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.

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, so far as possible, to fill any specific requests for foreign seeds or plants from plant breeders and others interested.)

ASPARAGUS SPP. (Convallariaceae.) 31296-297. Fruits of two species of asparagus from the Thian Shan Mountains, Chinese Turkestan. One of climbing habit, the other slightly twining, and found on a sandy alkaline spot. Both of possible value as ornamental perennials and as factors in breeding resistant strains. (Meyer's introductions.) For distribution later.

BERBERIS SPP. (Berberidaceae.) 31287-289. Seeds of three species of barberry from the Tekes Valley, Thian Shan Mountains, Chinese Turkestan. All tall species growing to a height of ten to twelve feet, one of the species seeming to do well in more or less sterile soils. The colors of the berries are respectively red, brown and blue. (Meyer's introductions.) For distribution later.

CALLIGONUM SP. (Polygonaceae.) 31293. Seeds from near Schul-Kuduk, Chinese Turkestan. "A graceful looking, small desert shrub, having a multitude of slightly bent, very white branches, which are from two to four feet in length. Occurs in deserts of moving sands, where it builds small mounds. To be tested for its sand-binding capacities in the dry and not-too-cold sections of the United States." (Meyer's introduction.) For distribution later.

CITRUS SPP. (Rutaceae.) 31356-358. Cuttings of three species of citrus from Taihoku, Formosa. Presented by Mr. G. Takata, chief of the Bureau of Industry, Formosan Government. The three species are called respectively, "Ponkan", "Sekkan", and "Tankan", and are reported to be of the finest Formosan varieties. For distribution later.

COLOCASIA SPP. (Araceae.) 31318-320. Tubers of dasheens from Tientai, China. Presented by Mrs. A. O. Loosley, China Inland Mission. 31318. "The tubers of this variety, when cooked, are dry and mealy, and are rather whiter than the Yii-na variety. The leafstalk is referred to by the Chinese as 'white'. (Loosley.) "The tubers are nonacrid when raw. The flesh and sprouts are white. When cooked, the flesh is of fair flavor." (R. A. Young.) 31319. "The tubers of this variety, when cooked, are white at the heart and a purplish color outside. They are sticky and moist. The leafstalk is called Yii-na(black). This variety must be grown deep in soil(not water), and the earth should be kept banked up. In dry weather they should be watered." (Loosley.) "The tubers are nonacrid when raw. The flesh and sprouts are white. When cooked, the tubers are lacking in flavor." (R. A. Young.) 31320. "Tuber pink sprouted." (R. A. Young.) All for distribution later.

COTONEASTER SPP. (Pomaceae.) 31285-286. Seeds from the valleys of the Tekes and the Chong Djighilan, Thian Shan Mountains, Chinese Turkestan, altitudes 3700-4000 feet. Shrubs with large numbers of blackish-red berries, persisting until March. Of possible value as park or garden shrubs. (Meyer's introductions.) For distribution later.

CUCUMIS MELO. (Cucurbitaceae.) 31298-302. Seeds of three winter melons and two summer melons from Maral-Bashi and Kashgar, Chinese Turkestan. "To be tested in sections of the United States where the summers are hot and long, the air dry, and where the soil is of a friable, slightly sandy nature, and contains a fair percentage of alkali." (Meyer's introductions.) For distribution later.

DYERA COSTULATA. (Apocynaceae.) 31362. Seeds from Lawang, Java. Presented by Mr. M. Buysman, Botanic Garden, Lawang. "A Sumatra tree, which produces a surrogate for caoutchouc. A company for the manufacture of articles of this gum is to be formed at Sourabaia with a capital of several millions of florins." (Buysman.) For distribution later.

ELEPHANTORRHIZA ELEPHANTINA. (Mimosaceae.) 31309. Seeds from Springbok Flats, Waterberg District, South Africa.

Presented by Prof. J. Burtt Davy, Government agrostologist and botanist, Pretoria, Natal. "All grazing animals, wild and domestic, are exceedingly fond of this plant. It has long, succulent roots and an underground stem. It does not shoot until rather late in our summer, seldom before December, and its stems are killed again by the first frosts of May. The seed-pods are still green when the frost comes, and the seeds not ripe, but they are so well protected by the strong leatherlike pod that the frost cannot hurt them, and they ripen in the pod long after the stem that bore them has been killed by the frost. The roots are used for tanning leather." (Mrs. Barber, in Harvey, Flora Capensis, vol. 2, p. 277.) For distribution later.

EUGENIA SP. (Myrtaceae.) 31366. Seeds from Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. "This is called in Guarany, ñangapiri. Fruit found in forests of Paraguay. In size and color same as May Duke cherry. Tree grows to the height and in the same shape as this cherry. It has, however, from one to three seeds in each fruit and has a button at the bottom similar to the quince. It is a beautiful looking fruit, but the taste is nothing wonderful according to my palate. The tree is found only inside the forest in shade, so it cannot be very resistant to frost." (Mead.) For distribution later.

EUONYMUS SP. (Celastraceae.) 31276. Cuttings from the mountains near Ta-si-ku, Ili Valley, Chinese Turkestan. "A small creeping Euonymus found on grassy mountain slopes with northern exposure, and between shrubs on somewhat moist and cool places; making stems three to four feet in length when growing in well protected places. Leaves small, wine-red underneath and semi-persistent. Of possible value as a ground-cover beneath trees in northern regions. May be expected to be hardier than the ordinary E. radicans and its varieties as the climate of Ili Valley is decidedly of a severe continental nature. On November 24, 1910, the mercury dropped to -30° C.(-22° F.)" (Meyer's introduction.) For distribution later.

HALIMODENDRON HALODENDRON. (Fabaceae.) 31290. Seeds from near Ure-dalik, Chinese Turkestan. "A spiny Colutea-like shrub, found on sandy and alkaline places in deserts where the moisture is not far from the surface. Stands some shade also; fit for a hedge plant in regions where long, hot and dry summers prevail and where the winters are cold." (Meyer's introduction.) For distribution later.

INOCARPUS EDULIS. (Fabaceae.) 31274. Seeds of "Tahiti chestnuts" from Tahiti, Society Islands. Procured by

Mr. North Winship, American Consul. "These Tahiti chestnuts come from what is considered the best tree on this island. The nut just as it is should be planted about four or five inches in the ground, good loamy soil preferred, and also in the place where the tree is desired. It is of slow growth, but makes a beautiful tree, growing to great size and yielding abundantly. Keep the seed and the young plant damp, but not wet." (Winship.) "The seeds are much prized by the natives as food, being eaten boiled or roasted. They are said to be less palatable than the chestnut." (Fairchild.)

MALUS SP. (Malaceae.) 31279-280. Seeds of wild apples from Chong Djighilan and Kuldja, Chinese Turkestan. "Apparently of great value as factors in hybridization work." For further information on the wild apples of this region see the notes from Meyer's correspondence in Bulletin No. 62, this series. (Meyer's introductions.) For distribution later.

MANGIFERA INDICA. (Anacardiaceae.) 31379-380. Plants of two varieties of mango from Tahiti, Society Islands. Procured by Mr. North Winship, American Consul. 31379. "Superba. This gives a fine large fruit, heavy and almost round; its color is yellowish golden." 31380. "Altissima. This is practically the same as the preceding, possibly longer and more pointed at the bottom. Its color is pink or red with sometimes a violet hue." "Both of these are less fibrous than the other mangos found here, and are very luscious. These trees begin to bear with the commencement of the rainy season. It is thought that both these varieties came originally from India." (All notes by Mr. Winship.) For distribution later.

MANGIFERA MACROCARPA. (Anacardiaceae.) 31354. Cuttings from Buitenzorg, Java. Presented by the Director, Department of Agriculture. Introduced for the work of this office in testing new and hardier stocks for the mango. For distribution later.

MAURITIA FLEXUOSA. (Phoenicaceae.) 31311. Seeds of the Miriti or ita palm from Brazil. Presented by Mr. Walter Fisher, Acting Director, Campo de Cultura Experimental Paraense. "It is a magnificent palm, its cylindrical stems rising like Grecian columns to a height of 100 to 150 feet, terminated by a crown of large fan-shaped leaves, from the base of which is produced a big bunch of pendulous fruits, some measuring eight to ten feet in length, weighing two to three hundred pounds and containing several bushels of fruit. Each fruit is about the size of a small apple, having a reticulated, polished, smooth shell." (Smith, Dictionary of Popular Names of Plants.) "These palms are a very conspicuous

feature along the Mojú River whence I brought the seeds. I understand that the seeds were once, that is, before the days of rubber, quite largely exported for making buttons. This is one of the so-called ivory nuts." (Fischer.) For distribution later.

MECONOPSIS SPP. (Papaveraceae.) 31269-271. Seeds of three species from Liverpool, England. Presented by the firm of Bees Limited. 31269. Meconopsis integrifolia. This magnificent biennial from the high Alps of western China at altitudes of 11000 to 15000 feet has proven thoroughly hardy in England and Ireland and flourishes and flowers without any special treatment. It is described as very striking, having numerous yellow flowers(as many as eighteen on a three foot plant)usually five to six, but sometimes as much as ten inches in diameter. 31270. Meconopsis delavayi. 31271. Meconopsis rudis. These last two are less known species from similar Alpine locations, with almost equally striking flowers, but probably less easy of culture. All three introduced in the hope of adding hardy biennials of easy culture to our garden flora. For distribution later.

MEDICAGO FALCATA. (Fabaceae.) 31303-304. Seeds of alfalfa from Chong Djighilan and Ili Valleys, Chinese Turkestan. Wild yellow-flowering forms considered by the natives superior to the cultivated varieties. (Meyer's introductions.) For distribution later.

MEDICAGO PLATYCARPOS. (Fabaceae.) 31305. Seeds of alfalfa from near Kurre, Thian Shan Mountains, Chinese Turkestan. "A wild alfalfa of erect growth, bearing yellow flowers and short, flat pods. Found on clayey and peaty hillslopes at altitudes between 6000 and 7000 feet. Stands great cold in winter and drought in summer, and is eagerly eaten by horses, cattle and sheep. Of probable value as a forage plant in sections of the United States where the ordinary alfalfa is winter-killed." (Meyer's introduction.) For distribution later.

PERSEA AMERICANA. (Lauraceae.) 31361. Seeds of avocado from Chile. Received through Mr. José D. Husbands, Limavida, Chile. "There are two and perhaps three classes in this lot, having green and black purple skins like some eggplants. They are very highly esteemed and very dear, costing $6.00 per dozen Chile money or $3.00 gold, and finding a ready sale at these high prices. May be shipped when nearly ripe and ripen upon the journey or afterwards." (Husbands.) For distribution later.

PERSEA AMERICANA. (Lauraceae.) 31375-376. Seeds of avocado from San José, Costa Rica. Presented by Mr. C. Wercklé. "These are seeds of large, very thick fleshed and very good varieties, about the best that come to the market. In color plain green." (Wercklé.) For distribution later.

PRUNUS ARMENIACA. (Amygdalaceae.) 31281. Seeds of wild apricot from the hamlet of Chong Djighilan, Thian Shan Mountains, Chinese Turkestan, altitude 3700 feet. "Wild apricots occur plentifully here and there in the Northern Thian Shan." For further information see note from Mr. Meyer in Notes from Foreign Correspondents, Bulletin 62, this series. (Meyer's introduction.) For distribution later.

ROSA SPP. (Rosaceae.) 31291-292. Seeds of wild roses from the Thian Shan Mountains, Chinese Turkestan. One with few spines, apparently very floriferous, and of possible value for the breeding of hardier roses for the northern states, the other of use perhaps, as a stock in dry, cold regions. (Meyer's introductions.) For distribution later.

SORBUS SP. (Malaceae.) 31283. Seeds of a mountain ash from near Idin-kul, Thian Shan Mountains, Chinese Turkestan. "A so-called mountain ash, found in cool and shady places at high altitudes. Grows to be a small tree, but is usually a tall shrub. Of possible value as an ornamental park and garden tree in regions with long winters and cool summers." (Meyer's introduction.) For distribution later.

TRITICUM SP. (Poaceae.) 31368-369. Seeds of wheat from the Hoggar region, Algeria. Presented by Dr. L. Trabut, Algiers. "This wheat was received from among the Hoggar Touaregs. It is cultivated with the aid of irrigation." (Trabut.) For distribution later.

VICIA SP. (Fabaceae.) 31306. Seeds of a vetch from Kurre, Thian Shan Mountains, Chinese Turkestan, altitude 7100 feet. "A vetch found in wild harvested hay, considered by the natives to be a very nutritious food for cattle, but especially good for horses. To be tested for its possible fodder value in the northern sections of the United States." (Meyer's introduction.) For distribution later.

VITIS VINIFERA. (Vitaceae.) 31255. Cuttings of a cultivated grape from Taihoku, Formosa. Presented by Mr. G. Takata, chief of the Bureau of Industry, Formosan Government, at the request of Mr. K. Haga, Expert, Bureau of Industry. These are reported to be from vines bearing fruit of unusually high quality for tropical grapes. For distribution later.

UNDETERMINED. (Cucurbitaceae.) 31365. Seeds from Liberia. Procured from Mr. Henry Stewart, through Mr. G. N. Collins. "The seeds of this plant, when parched and ground, produce a delicious condiment. Kiffy seed is an important ingredient in the popular Liberian dish, 'dumboy'. The flavor of the parched seed is similar to that of Sesamum indicum which is used in the same way by the natives of Liberia. The gourd-like fruits, about the size and shape of a goose egg, are produced on vines like the ordinary gourd. The method of securing the seeds practiced by the Liberians is to macerate the fruits in water and wash them free from the pulp. The season required for maturing the fruit is probably too long to permit the plant being grown anywhere in this country except in the extreme south." (Collins.) For distribution later.

NOTES FROM FOREIGN CORRESPONDENTS.

BRAZIL. Theophilo Ottoni. Mr. Fred Birch writes May 24, that they have there a little "woody nightshade", (Solanum sp.) whose berries serve in place of currants, or blueberries. It has a delightful flavor like a sweet ethereal liquorice. It grows to the size of three eighths inch in diameter, but he fears it may become a weed here as in Brazil. Of the native Lycopersicons which we requested, he has not found any with good tasting fruits, except a hard shelled form he has sent us already. All the others are most abominably acrid, and are usually troublesome weeds.

CANARY ISLANDS. Puerto Orotava. Mr. George V. Perez writes June 1, that if we wish to make experiments on a large scale with Statice arborea, he will be glad to put at our disposal all the seeds he gathers this year. He will send us seeds of Juniperus cedrus, Echium pininana and E. auberianum when he is able to get them.

COSTA RICA. San José. Mr. C. Wercklé writes June 18, "I do not know the hard-shelled Anona from Guatemala, nor the 'ilama' from Acapulco. It is strange that there are so many fine fruits in tropical America which one can scarcely find; the soncoya(a very large fruit)has orange-colored flesh and is to my taste better than the chirimoya, as it has sufficient acid and such an aroma that one can smell the ripe fruit, fallen down in the forest, when one passes near the tree. It is deciduous, with large leaves a little rough. The strongest grower I know of the genus. There are no seeds to be had now. Also the 'carrocaliente'(that interesting Coccoloba with small leaves and fine fruit)and the 'fruta de pava', that black, violet-brown-fleshed myrtaceous fruit with a single long seed. All three plants are from the Pacific Coast. Of the zapote we have very fine large varieties here

MANCHURIA. Mukden. Mr. E. C. Parker, Agriculturist of Bureau of Agriculture, Industry and Commerce, writes June 6, that he can find nothing in regard to the cultivation of the vetches in Manchuria, as the vetches are not grown there. Wild vetches do, however, occur.

PHILIPPINE ISLANDS. Manila. Mr. C. V. Piper, Agrostologist in Charge of Forage Crop Investigations, writes May 23 from Manila, where he has been investigating the forage crop situation for the War Department, that he will secure all the varieties of mangos in the islands before leaving and arrange with Mr. Wester, late of this Office, to get the others for us. He speaks of the "Carabao" as a "decidedly fine variety which breeds true to seed", and says it can be gotten at any time in season at the mere cost of the fruit, about two cents apiece. Ophiopogon, which he has seen growing both at Yokohama and the Hongkong Botanical Gardens, impresses him as "an admirable plant to cover the ground, and particularly steep slopes in very shady places".

RHODESIA. Mr. J. Speyer Sulman, Secretary of the North Charterland Exploration Company, Ltd., writes June 13, that the company will be very glad to assist us in obtaining native seeds from Northeastern Rhodesia.

SIBERIA. Saissansk. Mr. Frank N. Meyer writes June 1, that he has reached this place, and after a trip into the Altai Mountains, will proceed to Omsk to attend a great agricultural exhibition which is to be held there. On July 4 Mr. Meyer writes, that on July 2 he arrived at Omsk, whence he will send in the material collected in the Altai Mountains.

Issued August 25, 1911.

EUCOMMIA ULMOIDES.

TU CHUNG.

A 6-year-old specimen, 6 feet high, of the Tu Chung, or "hardy rubber tree," from western China. This tree, which grows in China to a height of 50 feet, while not especially striking, is of unusual interest as a park and garden tree, because its leaves and the bark, which is used by the Chinese as a drug, are filled with a remarkable substance closely allied to rubber. This substance is shown as silky, elastic fibers on breaking the bark, leaves, and fruit, and is being investigated in order to ascertain its possible value. The tree has proved hardy as far north as Boston, and it is desirable to know whether it will stand the winters throughout the country.