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DON'T FORGET IN YOUR SECLUSION THAT THE WORLD OF HUMAN BEINGS IS BURNING UP. THE LEAST YOU CAN DO IS TO LEND YOUR LAST CENT TO YOUR COUNTRY.

PLANT IMMIGRANTS.

No. 133. MAY, 1917.

GENERA REPRESENTED IN THIS NUMBER.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

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.

May 1, 1918.

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Allium triquetrum L. (Liliaceae.) 44793. Sets from Mustapha-Alger, Algeria. Presented by Dr. L. Trabut. A bulbous plant with a 3-angled stem, common on the coast of Algeria. In its usual surroundings this plant is a rather dwarfed weed of dry texture, but it has now been found that when it is transplanted to good garden soil with plenty of fresh water it produces, during the winter, large plants with white, tender and succulent underground parts. If the green leaves are removed, the rest of the stem forms a delicate vegetable with no odor of garlic. (Adapted from Trabut, Revue Horticole, July 1, 1913, pp. 311, 312.)

Annona testudinea Safford. (Annonaceae.) 44774. Seeds of a **tortoise-shell custard-apple** from Guatemala. Collected by Mr. Wilson Popenoe. "The tortoise-shell custard-apple, from the town of El Rancho, in eastern Guatemala. It may not have been grown at this place, as it was purchased in the market, but it was probably grown somewhere in the immediate vicinity. This interesting *Annona* belongs to the section Chelonocarpus, or Hard-shelled Custard-apple group, established by Safford (Journal of the Washington Academy of Sciences, vol. 3, No. 4, Feb. 19, 1913). The tree, which has not been seen by me, is described as being 12 to 15 meters high, with oblong or oblong-elliptic leaves, acuminate at the apex, and 25 to 35 cm. long. The fruit is more or less globose in form, about 4 inches in length, with a hard shell divided on the surface into polygonal areoles by slightly raised ridges. It strongly resembles the common custard-apple, being dull green, and somewhat pruinose. The seeds, however, are quite different from those of the common custard-apple, (*Annona reticulata*), being considerably larger and pointed at the apex. The flesh is white, soft, watery, free from the grittiness which is so objectionable in *A. reticulata,* sweet and of pleasant flavor. The pulp does not adhere to the seeds in the ripe fruit. This species seems worthy of a trial in South Florida. It will probably be too tender for cultivation in California, unless in the most favored locations such as Santa Barbara." (Popenoe.)

Brassica napus dichotoma (Roxb.) Prain. (Brassicaceae.) 44788. **Tori** or **Indian rape** seeds from Ranchi, India. Presented by Mr. A. C. Dobbs, Deputy Director of Agriculture, Chota Nagpur Division. These seeds were sent in response to a general request for all *Brassica*

Remember that four one-thousand dollar Liberty Bonds will buy one tractor.

varieties used for the production of mustard. An annual plant cultivated throughout India, especially in the lower provinces for rape seed production. There are two forms: one tall and rather late, the other shorter and very early. The seeds are usually brown and of the same size as those of the *sarson* (*B. campestris sarson*). The oil-content is very variable. (Adapted from Watt, Commercial Products of India, p. 178-180.)

Brassica campestris sarson Prain. (Brassicaceae.) 44787. **Sarson** seeds from Ranchi, India. Presented by Mr. A. C. Dobbs, Deputy Director of Agriculture, Chota Nagpur Division. These seeds were sent in response to a general request for all *Brassica* varieties grown for mustard. An erect annual of rigid habit, cultivated in many places in India for the seeds. There are two forms; one with erect pods and one with pendent pods, the former being the true *sarson,* and the latter being found commonly only in northern Bengal and eastern Tirhut. The seed is sown in September, either broadcast or in parallel lines, usually with wheat or barley, and the plants are cut soon after the harvest of the associated crop. *Sarson* is very liable to be attacked by insects and blight, and is quite susceptible to climatic vicissitudes. (Adapted from Watt, Com-Products of India, p. 176-178.)

Bromelia chrysantha Jacq. (Bromeliaceae.) 44796. Seeds from Venezuela. Presented by Mr. Henry Pittier. "This has been called *B. chrysantha,* but it may be simply *B. pinguin.* The fruit, which is sweet acidulous and quite agreeable to the taste when mature, is sold in the market." (Pittier.)

Campomanesia fenzliana (Berg) Glaziou. (Myrtaceae.) 44784. **Guabiroba** seeds from Lavras, Minas Geraes, Brazil. Presented by Mr. B. H. Hunnicutt, Director, da Escola Agricola de Lavras. A small Brazilian tree with foliage remarkably similar to that of some of the European oaks. It is usually 20 to 25 feet in height, though occasionally taller. The fruits greatly resemble small guavas, being orange-yellow, oblate in form, and up to an inch in diameter. The skin is thin and encloses a layer of granular, light yellow pulp, which has a flavor somewhat stronger than that of the guava. The fruits are used principally for making jam and jellies. The tree should prove suitable for southern California and southern Florida. (Adapted from note of Dorsett, Shamel, and Popenoe.)

Corynocarpus laevigata Forster. (Corynocarpaceae.) 44745. **Karaka** seeds from Auckland, New Zealand. Presented by Mr. H. R. Wright. A handsome evergreen tree with glossy, laurel-like, oblong leaves, 3 to 7 inches long; erect panicles of small white flowers, 4 inches in length; and oblong, orange-colored fruits an inch long. The outside of the fruit is extremely poisonous, but the kernel is edible and forms one of the staple foods of the Maoris, who cultivate the tree for its seeds. The wood has been much used by the natives of the Chatham Islands in making of canoes. (Adapted from Laing & Blackwell, Plants of New Zealand, p. 233, 234.)

Cryptostegia grandiflora R. Brown. (Asclepiadaceae.) 44786. Seeds of **Palay rubber** from Old Fort, New Providence, Bahamas. Presented by Mr. W. F. Doty, American Consul, Nassau, Bahamas, who secured them from Dr. Charles S. Dolley. A twining shrub, native of India, but cultivated in many places in the tropics for the rubber obtained from the sap. It has opposite, elliptic leaves; and terminal cymes of large reddish purple flowers which bloom all the year. The leaves and stems contain an abundance of latex which yields a quantity of rubber estimated at 2 per cent of the weight of the fresh plant. From the bast fiber of the inner bark a good quality of wrapping paper has been made. The seed coma furnishes a silky floss which can be made into an excellent felt. Propagation is by seeds. (Adapted from C. S. Dolley, On the Occurrence of Palay Rubber in Mexico, India-rubber Journal, May 20, 1911.)

Gladiolus alatus L. (Iridaceae.) 44722. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. A South African gladiolus with an upright stem, 6 to 8 inches in height, and 3 to 4 leathery, linear or sword-shaped, stiff leaves, the outermost being twice as long as the others. The 5 to 10 reddish yellow flowers, which are very divergent, have an odor like that of sweetbriar. (Adapted from Curtis's Botanical Magazine, vol. 15, plate 586.)

Gladiolus angustus L. (Iridaceae.) 44723. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. A plant with an ascending stem up to 2 feet in height,

and narrow, upright leaves with prominent midrib. The white, scentless flowers, which grow in a lax, one-sided spike, are narrow, straight, and funnel-shaped. It is a native of the Cape of Good Hope. (Adapted from Curtis's Botanical Magazine, vol. 17, plate 602.)

Gladiolus blandus Solander. (Iridaceae.) 44724. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. A South African plant with sword-shaped leaves somewhat shorter than the stem which is from 6 inches to 2 feet in height, and bears 3 to 10 white or reddish-tinged scentless flowers. There are many horticultural varieties which are very ornamental, and are easily propagated from seeds and offsets. (Adapted from Curtis's Botanical Magazine, vol. 17, plate 625.)

Gladiolus cuspidatus Jacquin. (Iridaceae.) 44725. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. An erect, bulbous plant, 2 to 3 feet high, with sword-shaped leaves usually shorter than the stem; and 4 to 8 white or pinkish flowers in a lax one-sided spike. It is a native of the Cape of Good Hope where it flowers in May and June. (Adapted from Curtis's Botanical Magazine, vol. 15, plate 582.)

Gladiolus recurvus L. (Iridaceae.) 44726. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. An ornamental plant, 1 to 3 feet tall, with 3 linear leaves having prominent midribs. The 2 to 5 yellowish purple flowers have a strong violet odor, and are produced in a lax spike, in April. It is a native of the Cape of Good Hope. (Adapted from Curtis's Botanical Magazine, vol. 15, plate 578.)

Gladiolus tristis L. (Iridaceae.) 44727. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. "**Avondbloem.**" A South African plant with 2 or 3 linear leaves which are 4-winged toward the top due to the comparative size of the midrib, which equals the blades in width. The one-ranked yellowish flowers, sometimes lightly streaked with purple, give off a very strong fragrance at night, but are practically scentless during the day. (Adapted from Curtis's Botanical Magazine, vol. 27, plate 1098.)

Do not forget that a one hundred dollar Liberty Bond will clothe a soldier.

Gladiolus undulatus Jacquin. (Iridaceae.) 44728. **Gladiolus** seeds from Johannesburg, South Africa. Presented by Mr. J. Burtt-Davy, Agricultural Supply Association. A bulbous plant, with a stem a foot in height including the spike, and several sword-shaped leaves about a foot long. The 4 to 6 flowers are milk-white, marked with red, and are produced in a very lax spike. It is a native of South Africa. (Adapted from W. T. Thiselton-Dyer, Flora Capensis, vol. 6, p. 155.)

Jasminum multipartitum Hochstetter. (Oleaceae.) 44740. Seeds from Cape Town, South Africa. Presented by Mr. L. Peringuey, Director, South African Museum. A climbing, much-branched, ornamental shrub up to 10 feet in height, with opposite, glabrous, ovate to lanceolate leaves nearly 3 inches in length; and solitary, terminal or axillary, fragrant white flowers about an inch and a half long. It is a native of Natal, South Africa. (Adapted from J. Medley Wood, Natal Plants, vol. 4, pl. 328.)

Lactuca sativa L. (Cichoriaceae.) 44729-44730. **Lettuce** seeds grown by Mr. George W. Oliver, of the Bureau of Plant Industry, Washington, D. C., from two forms selected by Dr. B. T. Galloway several years ago. "They have very large heads, under good conditions in a cool house. The head is from 8 to 10 inches in diameter. Everyone who has sampled them says that they are by far the best forcing lettuces. They are strictly hothouse lettuces, identical in growth but No. 44729 has white seeds and 44730 has black seeds." (Oliver.)

Malus sylvestris Miller. (Malaceae.) 44713. **Apple scions** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farm, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Anson**. A seedling of **Winter St. Lawrence** of medium size with a pale yellow, almost white skin and white, juicy, subacid flesh, resembling **Fameuse**. Season October to December, coming just before **Mc Intosh**. (See the Reports of the Horticulturist, Experimental Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experiment Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44714. **Apple scions** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farm, for

trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Battle.** A seedling of **Wealthy** of large size with yellowish, red-splashed skin and pinkish, juicy flesh resembling a raspberry in flavor. Season late August to early September, coming just before **Dutchess**. Should make an excellent cooking apple and is good for dessert. (See reports of the Horticulturist, Experimental Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44715. **Apple scions** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farms, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Drumbo.** A **Winter St. Lawrence** seedling of large size with pale yellow, crimson-splashed skin and rather coarse, juicy, white flesh. Flavor subacid; resembles **Winter St. Lawrence,** but is a better keeper. (See reports of the Horticulturist, Experimental Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44716. **Apple scions** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farms, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Galetta.** A **Winter St. Lawrence** seedling above medium size; color yellow with a red cheek; flesh white, tender and juicy. A good eating apple, resembling **Wealthy** in outward appearance. (See the Reports of the Horticulturist, Experimental Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44717. **Apple scions** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farms, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Jethro.** A seedling of **Wealthy** of medium size, having yellow, red, orange and carmine-splashed skin, and yellowish, subacid, juicy flesh. (See Reports of the Horticulturist Experimental

Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44718. **Apple scions** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farm, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Luke.** A large-sized **Wealthy** seedling with pale greenish-yellow skin and a red cheek, and yellowish, coarse, juicy flesh. Season October and November to late December. (See Reports of the Horticulturist, Experimental Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44719. **Apple cuttings** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farm, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Melvin.** A medium-sized **Wealthy** seedling with pale yellow red-splashed skin and reddish-yellow, tender, melting, flesh of good spicy flavor. Season middle to end of August. Considerably like **Sops of Wine** in outward appearance and quality. (See Reports of the Horticulturist, Experimental Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Malus sylvestris Miller. (Malaceae.) 44720. **Apple cuttings** from Ottawa, Canada. Presented by Mr. W. T. Macoun, Dominion Horticulturist, Central Experiment Farm, for trial at the Northern Great Plains Experiment Station, Mandan, North Dakota. **Rupert.** A large-sized seedling of **Russian** with pale greenish-yellow, pink-tinged skin and white, tender, juicy flesh. Quality good; season early August. Earlier than **Tetofsky** and better than **Yellow Transparent.** (See Reports of the Horticulturist, Experiment Farms, Ottawa, Canada, 1906-1915, in which will be found a full account of the development of the remarkable collection of seedlings at the Experimental Farms, Ottawa.)

Remember that a one hundred dollar Liberty Bond will provide five rifles.

Nannorhops ritchieana (Griff.) Wendland. (Phoenicaceae.) 44773. Seeds of **Mazri palm** from Saharanpur, India. Presented by Mr. A. C. Hartless, Superintendent, Government Botanical Gardens. A low, gregarious shrub, usually stemless, but sometimes with a stem 10 to 20 feet in length. The leaves, which are 2 to 4 feet long, and of a grayish green color, are beaten with mallets to remove the fiber which is used in making mats, baskets, etc. The fruit is a nearly round, 1-seeded drupe. The reddish brown wool of the petioles is impregnated with saltpeter and used as a tinder for match-locks. This palm is a native of Baluchistan and Mekran, where it ascends to 5500 feet. In Europe it grows best in a well drained sandy loam, and is propagated by seeds and offsets. (Adapted from E. Blatter, Journal Bombay Natural History Society, vol. 21, p. 72-76.)

Olea europaea L. (Oleaceae.) 44709. **Olive plant** from Cairo, Egypt. Presented by Mr. Thomas W. Brown, Director, Horticultural Division, Giza Branch, Ministry of Agriculture. **Tafahi.** Though reputed as only moderately productive the large size and fine appearance of the **Tafahi,** or apple olive, cause it to be in great demand throughout the Egyptian delta. As the flesh is very soft and buttery when fully ripe it is marketed about November 1st, when first beginning to color. At present no oil is manufactured from the Fayum olives, but in one of the villages stones of ancient oil mills were seen of beautiful red Assuan granite, and no doubt of Roman origin. Their purpose was unknown to the present inhabitants. From this it may be conjectured that the present olive trees of Fayum, as well as those of Dakhla Oasis, have come down from the time of the Roman occupation during the first century A. D." (S. C. Mason.)

Pandanus rockii Martelli. (Pandanaceae.) 44780. Plants of **screw-pine** from Honolulu, Hawaii. Presented by Mr. Joseph F. Rock, Botanist, College of Hawaii. A slender, erect tree, 8 to 10 m. (26 to 33 feet) in height, with bright green leaves; and large, wedge-shaped fruits, 8 cm. (3 inches) long and 6 cm. (2 2/5 inches) broad at the apex. It was originally collected on Helei Islet, Palmyra Island, in July, 1913. (Adapted from Bulletin No. 4, College of Hawaii Publications, p. 42, 1916.)

Remember a fifty dollar Liberty Bond would protect 1,000 soldiers from death by small pox.

Phaseolus lunatus L. (Fabaceae.) 44758. Seed of a **lima bean** from Paraguana, Venezuela. Presented by Mr. H. M. Curran. "**Tapirama chicoa.** Small, gray bean, with a yellow eye. An unusual marking for this species." (D. N. Shoemaker.)

Phaseolus lunatus L. (Fabaceae.) 44759. Seeds of a **lima bean** from Miraca, Paraguana, Venezuela. Presented by Mr. H. M. Curran. "Small, white bean, very similar to beans received from Ceylon, Burma, and Java." (D. N. Shoemaker.)

Phaseolus lunatus L. (Fabaceae.) 44760. "**Tapirama colorado.** Small, red bean, not like any variety of **lima** in the American trade." (D. N. Shoemaker.)

Phaseolus lunatus L. (Fabaceae.) 44761. Seeds of a **lima bean** from Miraca, Paraguana, Venezuela. Presented by Mr. H. M. Curran. "**Tapirama amarilla.** Small, yellow bean; an unusual color for this species." (D. N. Shoemaker.)

Pistacia chinensis Bunge. (Anacardiaceae.) 44768. Seeds of a *Chinese Pistache* from China. Obtained by Mr. Edwin S. Cunningham, American Consul, Hankow, through Mr. Nelson T. Johnson, American Consul, Changsha. This beautiful Chinese tree with graceful pinnate leaves which are at first dark red, then glossy green, and finally, in autumn, become scarlet, purple, and yellow has done so well in many parts of the country that we can now heartily recommend it for park and avenue planting where the winters are not too severe. It has withstood temperatures of 4° Fahr. without injury, but has succumed to the more severe winters here in Washington. It is essentially a dry climate tree and has done particularly well in the South West.

Raphanus sativus L. (Brassicaceae.) 44731. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. **Bottle.** A large, bottle-shaped radish, called **Tokuri** in Japan. (Adapted from Useful Plants of Japan, p. 21, 1895.)

Raphanus sativus L. (Brassicaceae.) 44732. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. A radish with a root over 3 feet long and only 2 or 3 inches in circumference. Very suitable for pickling. (Adapted from Catalogue of the Yokohama Nursery Co., 1916-1917, p. 77.)

Raphanus sativus L. (Brassicaceae.) 44733. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. **Nerima Long (Mikado).** A variety of radish with long, large cylindrical roots.

Raphanus sativus L. (Brassicaceae.) 44734. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. **All Season.** "Called **Tokishiraza** in Japan. It is a very large, long, deep-rooted snow-white radish, which does not extend above the soil; it is always tender and crisp and has a delicious flavor." (Aggeler & Musser Seed Co., Catalogue 1917, p. 56.)

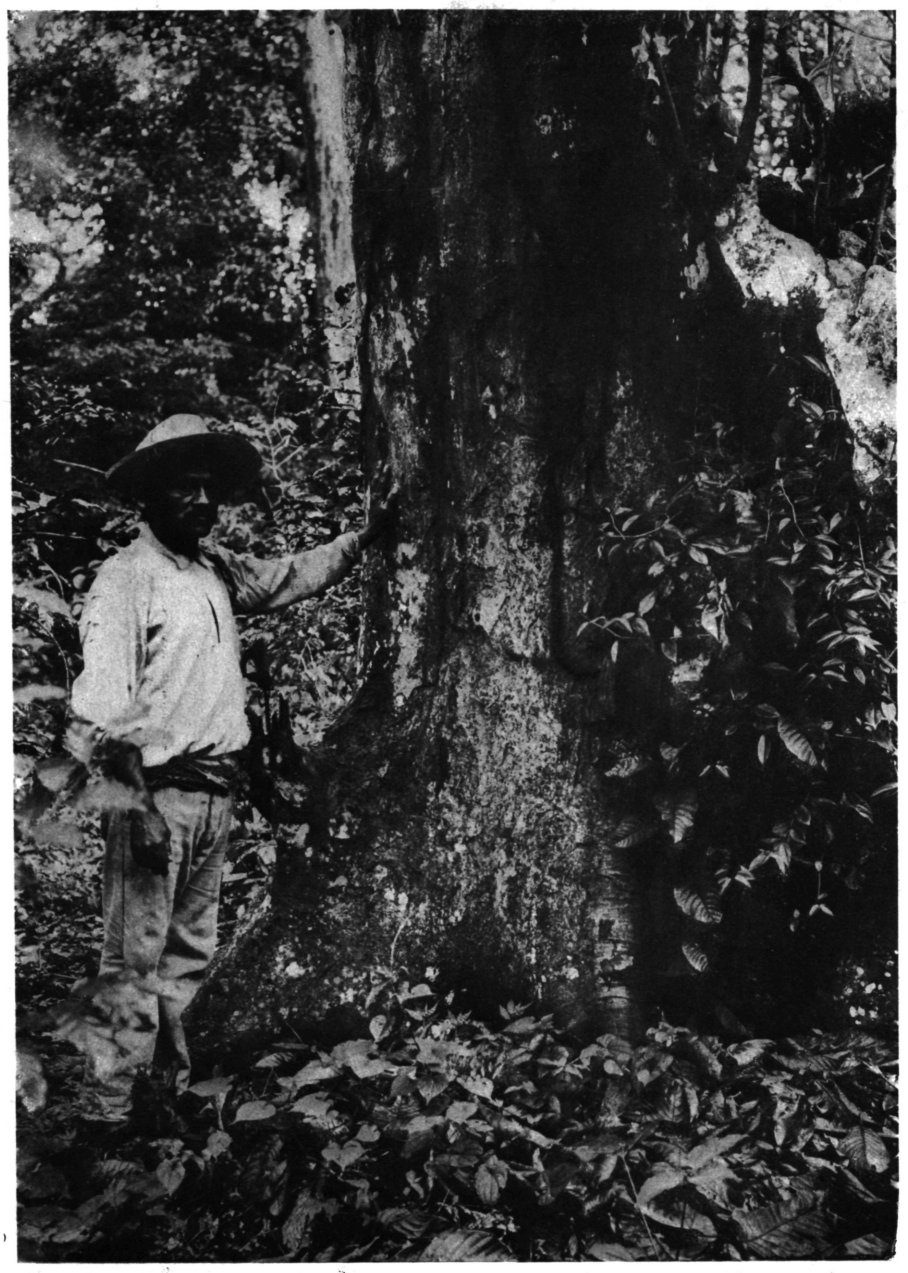
Raphanus sativus L. (Brassicaceae.) 44735. **Radish** seeds from Yokohama, Japan. Purchased from the Yokahama Nursery Company. **Miyashige.** A variety found chiefly in Miyashige, province of Owari, Japan, with a conical root about 1½ feet in length and 3½ inches in diameter. It is very sweet and should be boiled, dried, or pickled. (Adapted from Useful Plants of Japan, p. 21.)

Raphanus sativus L. (Brassicaceae.) 44736. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. **Ninengo.** A variety with white, thin, hard roots. It is a biennial, and the seeds are sown at the end of spring. (Adapted from Useful Plants of Japan, p. 22.)

Raphanus sativus L. (Brassicaceae.) 44738. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. **Sakurajima Mammoth.** The largest variety of radish known, cultivated chiefly at Sakurajima, Osumi, Japan. It is nearly globular, about 3 feet in circumference in the largest forms, and weighs 20 to 30 pounds. It is eaten raw, boiled, dried or preserved in salt; and has a sweet wholesome taste. (Adapted from Useful Plants of Japan, p. 20.)

Raphanus sativus L. (Brassicaceae.) 44739. **Radish** seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. **Shogoin.** A variety obtained from seed of variety **Horio** sown in Shogoin, province of Yamashiro, Japan. It is about a foot long, 6 to 7 inches in circumference, and has an excellent flavor. (Adapted from Useful Plants of Japan, p. 22.)

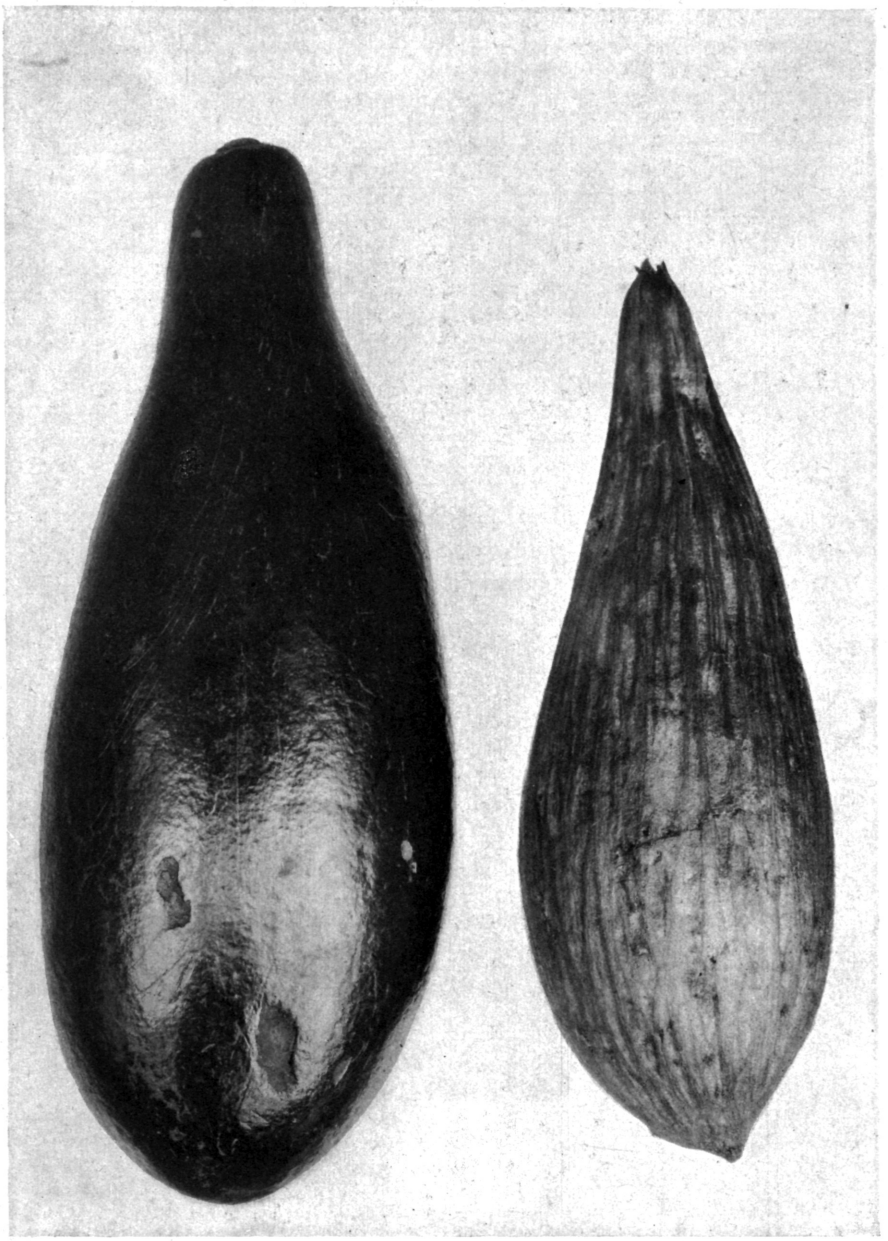
Remember that a fifty dollar Liberty Bond will buy 10 cases of surgical instruments for officers' belts.



THE ANAY, A WILD RELATIVE OF THE AVOCADO.

(*PERSEA SP., S. P. I. NO. 43433.*)

An as yet undescribed species of Persea which is closely related to the cultivated avocado, occurring as a wild forest tree at an altitude of 1,200 feet in the rainy forest region of Guatemala. It is a tall, slender tree, attaining 70 to 80 feet in height, and is left as a shade tree in coffee plantations. Unlike the Mexican avocado, its leaves are not anise scented. It flowers in May, and its fruits ripen in August and September. In the development of the avocado industry this species may prove valuable for stock purposes in regions of heavy rainfall. (Photographed by Wilson Popenoe at Mazatenango, Guatemala, September 23, 1916; P16797FS.)



A FRUIT AND SEED OF THE ANAY.

(*PERSEA SP., S. P. I. NO. 43432.*)

A wild relative of the avocado, with smooth, glossy black fruits, 4 to 6 inches long, having a very thin, membranous skin which adheres closely to the firm, oily flesh. The latter has a rich, bland flavor like that of a good avocado, but with a suggestion of sweetness. If the flesh of the anay was more abundant, its flavor would make it of great value. The fruits do not ripen on the tree, but fall to the ground while still hard and require two or three days to soften. This may prove of value for breeding purposes. (Photographed by Wilson Popenoe at Mazatenango, Guatemala, September 23, 1916; P16806FS.) Natural size.

Solanum sp. (Solanaceae.) 44800. Seeds from Venezuela. Presented by Mr. Henry Pittier. "An herbaceous, trailing plant, bearing edible fruits; desirable for cultivation in cool, shady places in a mild climate." (Pittier.)

Ziziphus mucronata Willdenow. (Rhamnaceae.) 44748. Seeds from Kartoum North, Sudan, Africa. Presented by the Principal, Central Research Farm, Education Department, Sudan Government. A tree, 15 to 30 feet tall, with alternate, crenate or serrate leaves, up to 3 inches long; spine-like stipules; and small, greenish flowers in axillary cymes, up to an inch in length. The numerous dark red, globose fruits, about one-half inch in diameter, are edible, and are believed to be the lotus mentioned by Mungo Park as being used for making into bread, which tastes like gingerbread. A paste made of the leaves, and a decoction of the root are used medicinally; the wood is tough and is used for yoke-keys; and the seeds are used for making rosaries. It is a native of tropical and southern Africa. Arabic name **Siddir** or **nabbak.** (Adapted from T. R. Sim, Forest Flora of Cape Colony p. 177, 178, and from Kew Bulletin Miscellaneous Information, Additional Series 9, Part 1, p. 162, 1908.)

Notes from Correspondents abroad.

Mr. Wilson Popenoe writes from Guatemala City, Guatemala, November 6, 1917:

"I am forwarding this week, via the pouch, my number 195, being 100 scions and budsticks of avocado No. 32, from the property of Eulogia Duarte, near Amatitlan, and my number 196, cuttings of *Malpighia sp.* the "azerola" from Amatitlan.

"This avocado, No. 32, (named **Akbal**) is a variety which I have had under observation for several months, and which I have been counting upon to complete my set. It is a very early variety. Previous to obtaining this number the set has included no very early forms, the best probably being No. 6, from Antigua, which is two to three months earlier than the majority of varieties in that region. No. 32 appears to be an aberrant type which ripens at Amatitlan in September, while the majority of varieties in the same region do not ripen until January or February. I have found

Remember that a fifty dollar Liberty Bond will buy 37 cases of surgical instruments for enlisted men's belts.

several other trees which seem, like 32, to bloom and ripen entirely out of the main season, but 32 is the only one whose fruit is up to standard. This variety is of excellent quality. The fruit is long and slender, which may be a slight defect from our point of view, but so far as I can see this is the only defect that it has, and if it ripens as far out of the main season in California and Florida as it does here, it will be so valuable that the slender form will not matter. It remains to be seen whether or not the variety will retain its habit of flowering out of season in California and Florida.

"Replying to your letter of the 18th ult., re papaya seed, it seems to me that there are much better regions than Guatemala in which to obtain this. The papaya is not very abundant here, and there are very few superior varieties. To obtain large quantities of seed of the latter, such as you desire, would be a very slow job, and I do not believe more than two or three pounds could be obtained within the next month. I believe it would be much more satisfactory to obtain seed from Hawaii, where better varieties are available in abundance.

"I will try to get specimens of chayote roots and the soil around them, so that Dr. Cobb can make an examination. I expect to go to Antigua this week, and while in that region will see if I can get any more information re chayote culture. In the Indian villages around Antigua there are a great many chayotes grown.

"I expect to ship 4000 avocado seeds within a couple of weeks, but they will probably not reach you until a week later than this letter."

INVENTORY OF SEEDS AND PLANTS IMPORTED.

Owing to the war demands upon the government printing funds, it has been necessary to suspend temporarily the publication of the inventories of seeds and plants, which under normal conditions should appear every three months. There are now prepared sevveral of these inventories, which have been ready for the printer for many months.

While it is out of the question to publish these inventories in Plant Immigrants, it does seem advisable to reproduce here the brief Introductory Statements

Do not forget that a fifty dollar Liberty Bond will render painless four hundred operations.

to these inventories, which direct attention to the more important introductions. One of these statements will appear in each of Plant Immigrants.

Inventory No. 45. Covering the period from October 1st to December 31st, 1914.

Although this inventory chronicles the arrival of only 370 new plant immigrants, it describes some that are of unusual interest and deserving of special mention. It covers certain plants of the high Peruvian Andes collected by Mr. O. F. Cook while attached to the Yale University-National Geographic Society Expedition. These include a remarkable wild relative of the tomato (No. 41318), which has a pleasant, slightly acid flavor, resembling that of an apple, and remarkable keeping qualities which may make it of particular interest to tomato breeders; one of the Mutisias (No. 41317), a large trailing composite vine worthy of trial in our greenhouses for its beautiful orange to scarlet pendent flowers which suggest thistles; a passion fruit (No. 41316), the pulp of which separates from the hard shell, making it possible to peel the shell away; the tara (*Caesalpinia pectinata*, No. 41323), a spiny leguminous tree or shrub which may make a striking hedge plant in our Southwestern States, its bright scarlet pods contrasting with its deep, polished-green leaves as holly berries do; the tasta (No. 41324), a fine-leaved shrubby *Escallonia*, which may make a desirable hedge plant as far north as San Francisco; the lengli (*Hesperomeles oblonga*, No. 41325), an attractive tree with evergreen leaves and brilliant red fruits, hanging on all winter like holly berries; the capuli cherry of Peru (*Prunus salicifolia*, No. 41328), from an altitude of 12,000 feet, which resembles a chokeberry but has a firm flesh of good texture and agreeable taste; a variety of the sweet cassava (*Manihot dulcis*, No. 41320), which species, according to Cook, is represented by varieties maturing at 6,000 feet on the eastern slopes of the Andes and in the cold cloudy coastal climate of the Pacific coast; a species of tree (*Datura sanguinea*, No. 41329), with green, orange, and scarlet flowers, which occurs where frosts are encountered every night; the lucuma of Peru (No. 41332), a popular fruit with rich mealy flesh, resembling a cooked sweet potato and with a hardiness which

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presumably will enable it to be grown in California and Florida; a South American black walnut (*Juglans sp.*, No. 41334), of distinct value of plant breeders, the bark of which is used for dyeing wood the color of the famous vicuna ponchos; and a remarkable species of the papaya (No. 41339), which produces fruits that will keep for two weeks or more after they are ripe and which are as deliciously fragrant as a well-ripened muskmelon and of excellent flavor but tough texture. Although the quinoa (*Chenopodium quinoa*, No. 41340), has often been introduced into America and has nowhere yet found a home, it is important to get an opinion regarding this plant from a keen observer and thoroughly trained agricultural explorer. Mr. Cook reports that previous to the introduction of wheat and barley this cultivated pigweed was one of the two most widely grown crops of the remarkable Inca civilization, that it is pronounced by a Scotchman resident there to-day as being better than oatmeal for a breakfast food, and that it appears very vigorous and productive and may possibly be gathered and thrashed by machinery.

Among the introductions sent in by correspondents or collected by travelers, there are several unusual things covered by this inventory. To Rev. George Campbell, the American missionary who has sent in so many interesting plants from South China, we are indebted for a most remarkable dwarf peach (No. 41395), which is handled as a pot-grown tree in China and which he says comes true to seed. He reports that one small tree 15 inches high with a stem no larger than a lead pencil ripened five good-sized edible clingstone peaches. The behavior out of doors at Chico of a number of seedlings of this peach suggests the possibility of a dwarf race of peach trees of value as fruit producers and for plant breeding. Mr. Carlos Wercklé, of Costa Rica, sends seeds of the sansapote (*Licania platypus*, No. 41393), the most beautiful forest tree in Costa Rica, which grows to gigantic size, bears an edible fruit, and produces timber nearly as good as the Cedrela timber of Cuba. Mr. A. Rolloff, director of the Tiflis Botanic Garden, who has sent so many new hardy plants from the Caucasus, presents us with seeds of the beautiful sulphur-yellow peony (No. 41476, recently discovered near Lagodekhi in eastern Central Caucasus by Mlokosewitsch, for

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whom it was named. *Caragana arborescens* has become almost a necessary hedge and shelter-belt plant on the Canadian Great Plains, and it is coming to a better appreciated in our own Northwest. A beautiful, striking, prostrate form (No. 41480) to which Mr. Norman M. Ross, of Indian Head, directed attention last year, and which he has since sent us, can scarcely fail to be of value for dooryard planting in the coldest portions of our country.

It always gives a feeling of satisfaction to realize that a tree introduction has reached a stage where it is producing a supply of seed in this country. The Queensland nuts (No. 41472) sent in from Homestead, Fla., by Mrs. L. L. Bow were produced by a tree sent to her by this office in 1911. Its productiveness and the quality of the nuts indicate that this new nut tree, which furnishes a basis for a small industry in Australia, is a promising one for Florida at least.

Collections of seven winter-wheat varieties (Nos. 41510 to 41516) from Baluchistan, presented by Mr. A. Howard of the Indian Service, and of eighteen varieties (Nos. 41342 to 41356 and 41682 to 41684) from Pusa, India, should yield something valuable for the wheat breeders.

The hybrids between the American chinkapin and the Japanese chestnut (Nos. 41357 to 41360), made by Dr. Walter Van Fleet, bear nuts which in size and sweetness should recommend them to the serious attention of nut growers.

The Mascarene grass (*Osterdamia tenuifolia*, No. 41509.) which has been used so extensively by the Japanese for lawns, but which comes from the island of Guam, has already shown its remarkable lawn-making character in southern Florida, where lawns are most difficult to maintain.

A species of *Rubus* (No. 41676) from Darjiling, making a growth of 20 feet and said to be the most robust of the genus, together with five other species from the same section of the Himalayas, may have special interest for breeders, even though they may not do well generally.

Those Americans who have tried in vain to grow as a border plant the brilliant *Calceolaria* so common in Great Britain may be glad to test as a substitute the

To dress those trench wounds which can be cared for with 'First Aid Packets', a fifty dollar Liberty Bond would take care of 160 injuries.

Australian *Crotalaria* (No. 41571), which Mr. James Pink, who sends it in, predicts will be highly successful in borders in dry situations.

The Pondoland cocos (*Jubaeopsis caffra*, No. 41484) will have a botanical interest to all palm lovers as the only member of the tribe to which the coconut belongs, which occurs in Africa,- all the others being inhabitants of the Western Hemisphere.

David Fairchild,
Agricultural Explorer in Charge.

OBITUARY.

Stephen Conrad Stuntz.

It is with the deepest regret that we announce the death from pneumonia, on the third of February, 1918, of Mr. Stephen Conrad Stuntz, who has had charge of all the publications of this office for the last eight years. Mr. Stuntz devoted much time and energy to the building up of Plant Immigrants and its originality and many of its characteristics will remain as a concrete evidence of his industry, intelligence, and botanical ability.

Remember that a fifty dollar Liberty Bond will supply a bandage long enough to go from the Capitol to the White House and back again (nearly two miles) or it will bandage 555 hands.

United States Department of Agriculture.
Bureau of Plant Industry.
Office of Foreign Seed and Plant Introduction.
Washington, D. C.

Washington Scientific Staff.

David Fairchild, Agricultural Explorer in Charge.
P. H. Dorsett, Plant Introducer, in Charge of Plant Introduction Field Stations.
B. T. Galloway, Plant Pathologist.
Peter Bisset, Plant Introducer, in Charge of Foreign Plant Distribution.
Frank N. Meyer and Wilson Popenoe, Agricultural Explorers.
H. C. Skeels and R. A. Young, Botanical Assistants.
H. E. Allanson, D. A. Bisset, R. N. Jones, P. G. Russell, and G. P. Van Eseltine, Assistants.
Edward Goucher, Plant Propagator.
Henry Y. Gouldman, Laboratory Aid.

Field Stations Scientific Staff.

R. L. Beagles, Superintendent in Charge, Plant Introduction Field Station, Chico, Cal.
E. O. Orpet, Assistant in Plant Introduction.
J. M. Rankin, Superintendent in Charge, (Yarrow) Plant Introduction Field Station, Rockville, Md.
Harry Duffield, Jr., Assistant in Plant Introduction.
Edward Simmonds, Superintendent in Charge, Plant Introduction Field Station, Miami, Fla.
J. E. Morrow, Superintendent in Charge, Plant Introduction Field Station, Brooksville, Fla.
Henry E. Juenemann, Superintendent in Charge, Plant Introduction Field Station, Bellingham, Wash.

Collaborators.

Aaron Aaronsohn, Haifa, Palestine; Thomas W. Brown, Cairo, Egypt; H. M. Curran, Laurel, Md.; M. J. Dorsey, University Farm, St. Paul, Minn.; Robt. H. Forbes, Tucson, Ariz.; Gustav Eisen, New York City; E. C. Green, Natal, Estado do Rio Grande do Norte, Brazil; A. C. Hartless, Seharanpur, India; Barbour Lathrop, Chicago, Ill.; C. C. Logan, Luray, Va.; H. Nehrling, Gotha, Fla.; Miss Eliza R. Scidmore, Washington, D. C.; Charles Simpson, Littleriver, Fla.; H. P. Stuckey, Experiment, Ga.; Dr. L. Trabut, Director, Service Botanique, Algiers, Algeria; H. N. Whitford, School of Forestry, New Haven, Conn.; E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass.