

U. S. DEPARTMENT OF AGRICULTURE,  
DIVISION OF BOTANY.

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**INVENTORY NO. 7.**

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# FOREIGN SEEDS AND PLANTS

IMPORTED BY THE

DEPARTMENT OF AGRICULTURE, THROUGH THE SECTION OF SEED AND  
PLANT INTRODUCTION, FOR DISTRIBUTION IN COOPERA-  
TION WITH THE STATE AGRICULTURAL  
EXPERIMENT STATIONS.

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**NUMBERS 2701-3400.**

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# INVENTORY OF FOREIGN SEEDS AND PLANTS.

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## INTRODUCTORY STATEMENT.

The present inventory or catalogue of seeds and plants includes the collections of the agricultural explorers of the Section of Seed and Plant Introduction, as well as a large number of donations from miscellaneous sources. There are a series of new and interesting vegetables, field crops, ornamentals, and forage plants secured by Mr. Walter T. Swingle in France, Algeria, and Asia Minor. Another important exploration was that conducted by Mr. Mark A. Carleton, an assistant in the Division of Vegetable Physiology and Pathology. The wheats and other cereals were published in Inventory No. 4, but notices of many of Mr. Carleton's miscellaneous importations are printed here for the first time. The fruits and ornamentals collected by Dr. Seaton A. Knapp in Japan are here listed, together with a number of Chinese seeds from the Yangtze Valley, presented by Mr. G. D. Brill, of Wuchang. Perhaps the most important items are the series of tropical and subtropical seeds and plants secured through the indefatigable efforts of Hon. Barbour Lathrop, of Chicago. Mr. Lathrop, accompanied by Mr. David G. Fairchild, formerly in charge of the Section of Seed and Plant Introduction, conducted at his own expense an extended exploration through the West Indies, Venezuela, Colombia, Peru, Chile, Brazil, and Argentina, and procured many extremely valuable seeds and plants, some of which had never been previously introduced into this country.

The publication of this list has been considerably belated, and many of the numbers are now entirely exhausted. Nevertheless the notes in regard to such will undoubtedly prove an assistance to agricultural experimenters in many lines. Records are kept of the source and origin of each item listed. It will therefore be possible, in most instances, to obtain an additional quantity, at least for the use of workers at the agricultural experiment stations, provided there is sufficient and justifiable demand for another importation.

Many of the forms and varieties are not, strictly speaking, new introductions. However, these are often desirable for special purposes; for example, for the use of plant breeders in creating new strains by crossing and selection, or for students of particular groups, who require a large number of species, varieties, and forms in their work on the improvement of cultivated plants. Wherever possible, the first choice will be extended to the coworkers in the various Divisions of the Department of Agriculture and in the State experiment stations. The quantities of seeds and plants secured are usually small and are entirely insufficient for indiscriminate distribution. In cases where an importation proves of value after trial, a larger quantity may be secured for more general distribution in the region in which the plant has shown marked improvement over existing varieties. But where a new crop is once established and has become so well known that it is amply handled by the trade, no further importations for free distribution, at least in that region, will be made.

The rice growers of Louisiana and Texas have made extensive importations, amounting to perhaps 250,000 pounds, of Kiushu or Japanese rice (No. 1962) for seed purposes during the past season, an apt illustration of the point in question. If a new crop imported by this Department turns out to be really better than forms previously cultivated it is bound to be adopted by the progressive seed merchants and farmers. The original Kiushu rice importation increased the value of the annual output of rice in Louisiana and Texas nearly a million dollars. It is no longer an experiment, and the Department of Agriculture will discontinue the distribution of this seed in the region in which it has become established. One pronounced commercial success of this character repays the cost of many unsuccessful ones.

On the other hand, the expenses of exploration in foreign countries in search of varieties of cultivated crops better than those already established in the United States properly devolves upon the Department. It may also sometimes prove profitable to reintroduce forms which have been tried without success in one portion of the land provided new facts as to the method of cultivation and adaptability to soils and climate are determined pointing to the possible success of the crop in special regions possessing the requisite natural environment. In such cases the endeavor to reestablish a decadent farming industry may best be undertaken with the assistance of the trained workers of the State experiment stations. If these experimenters report favorably in regard to new or little known vegetables, grains, and field crops, a larger distribution can be made to again bring the crop to the attention of the farmer.

Because of the increasing scope of the work of the Section, due to the numerous seeds and plants procured, it is especially important that correspondents retain the original number under which the seed

is distributed. The report blanks will bear numbers corresponding to those of the inventory. The information supplied by experimenters will, by following this system, become easily accessible.

JARED G. SMITH,

*Assistant in Charge of Seed and Plant Introduction.*

WASHINGTON, D. C., August 18, 1900.

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## INVENTORY.

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**2701. POPULUS DELTOIDEA. Cottonwood.**

From Troyes, France. Received through Mr. W. T. Swingle, 1899.

This is an improved form of the American cottonwood. (See No. 2700 in Inventory No. 5.)

**2702. POPULUS NIGRA, PYRAMIDALIS. Lombardy poplar.**

From Troyes, France. Received through Mr. W. T. Swingle, 1899.

*Peuplier d'Italie pyramidal.*<sup>1</sup> (See No. 2701.)

**2703 to 2719.**

The following 17 numbers comprise a collection of cereals grown in the northwest territories of Canada and presented by Dr. William Saunders, of the Central Experiment Farm, Ottawa, for experiments being conducted in Alaska by the Office of Experiment Stations:

<b>2703.</b>	AVENA SATIVA.	<b>Oat.</b>
	<i>Welcome.</i>	
<b>2704.</b>	AVENA SATIVA.	<b>Oat.</b>
	<i>Flying Scotchman.</i>	
<b>2705.</b>	AVENA SATIVA.	<b>Oat.</b>
	<i>Improved Ligowo.</i>	
<b>2706.</b>	AVENA SATIVA.	<b>Oat.</b>
	<i>Bonanza.</i>	
<b>2707.</b>	HORDEUM VULGARE.	<b>Barley.</b>
	<i>Royal.</i>	
<b>2708.</b>	HORDEUM VULGARE.	<b>Barley.</b>
	<i>Mensury.</i>	
<b>2709.</b>	HORDEUM VULGARE.	<b>Barley.</b>
	<i>Petschora.</i>	
<b>2710.</b>	HORDEUM VULGARE.	<b>Barley.</b>
	<i>Canadian Thorpe.</i>	
<b>2711.</b>	SECALE CEREALE.	<b>Rye.</b>
	A fall variety.	
<b>2712.</b>	SECALE CEREALE.	<b>Rye.</b>
	A spring variety.	

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<sup>1</sup>The varietal name where known is *italicized*.

2713. LINUM USITATISSIMUM. **Flax.**  
 2714. TRITICUM VULGARE. **Wheat.**  
*Preston.* Spring wheat.  
 2715. TRITICUM VULGARE. **Wheat.**  
*Percy.* A spring wheat.  
 2716. TRITICUM VULGARE. **Wheat.**  
*Ladoga.* A spring wheat.  
 2717. TRITICUM VULGARE. **Wheat.**  
*Black Sea.* Spring variety.  
 2718. TRITICUM VULGARE. **Wheat.**  
*Dawson's Golden Chaff.* A fall wheat.  
 2719. TRITICUM VULGARE. **Wheat.**  
*Surprise.* A fall wheat.

**2720. DIOSCOREA. Yam.**

From Jamaica. Received through Messrs. Lathrop and Fairchild, March, 1899.

*Yampie.* "This is a vine somewhat resembling our American species of smilax, with clusters of large, fleshy roots like sweet potatoes. The plants are propagated by means of the so-called 'heads.' These are the enlarged extremities of the roots, bearing a large number of adventitious buds, which under suitable conditions develop into new vines. These heads are planted in hills 6 or 8 feet apart each way, three heads being placed 6 to 8 inches apart in each hill. As soon as the vines are up, a stout stake or pole 7 to 8 feet long is driven into the hill near one of the heads. The vines are trained up this stake. Several vines spring from each single head. As soon as the vines are established on their own roots they commence to form, underneath the heads, the fleshy roots which form the crop. The roots, which are large enough to harvest five or six months after planting, are gathered without destroying the vines, and sometimes three or more crops are taken from one planting. After gathering the crop the upper roots are allowed to grow and make heads, which are again used to start a new plantation. The 'Yampie' variety is a poor keeper, and as a rule a poor yielder. The slightest bruises injure the roots, and decay follows very quickly. However, it is the best-flavored yam grown in Jamaica, and sells for the highest price in the markets there." (*D. G. Fairchild.*)

**2721. DIOSCOREA. Yam.**

From Jamaica. Received through Messrs. Lathrop and Fairchild, March, 1899.

*Negro.* "This is the earliest of the Jamaica yams." (*D. G. Fairchild.*)

**2722. DIOSCOREA. Yam.**

From Jamaica. Received through Messrs. Lathrop and Fairchild, March, 1899.

*White.* "A late yam, which keeps better than the Negro." (*D. G. Fairchild.*)

**2723. PANICUM BARBINODE. Para grass.**

From Jamaica. Received through Messrs. Lathrop and Fairchild, March, 1899.

"A tropical hay and pasture grass adapted to cultivation on rich muck or swampy soils. Propagated mostly by root division." (*D. G. Fairchild.*)

**2724. PITHECOLOBIUM SAMAN. Rain tree.**

From Jamaica. Presented by Mr. W. W. Wynne, Brokenhurst, near Mandeville. Received March, 1899, through Messrs. Lathrop and Fairchild.

"Like the *Cuji*, the pods are a fattening fodder eagerly eaten by cattle and horses. A large spreading tree, often 6 feet in diameter, suitable for distribution in southern California and Florida. Seeds should also be sent to Hawaii." (*D. G. Fairchild.*) The pods resemble those of the mesquite bean. It is called "Rain tree" because, after having lost its leaves during the dry season, it bursts forth into flower and leaf at the commencement of the rains.

**2725. PSIDIUM GUAJAVA!****Guava.**

From Jamaica. Received, through Messrs. Lathrop and Fairchild, March, 1899.

"The Mountain *Guava*, for experiments in plant breeding. This is said to furnish the best preserves of any species growing on the island." (*D. G. Fairchild.*) (¼ pound of seed.)

**2726 to 2730. DIOSPYROS KAKI.****Japanese persimmon.**

From Japan. Received through Prof. S. A. Knapp, 1899.

The following statement published by the Agricultural Society of Japan is worthy of the careful consideration of the American producers of fruit:

*Kaki.* "The Japan persimmon is our most valuable native fruit, and has been abundantly grown from the earliest period in all of our provinces except those where the climate is extremely cold or hot. All these fruits are remarkable for being harsh and astringent before maturity, but some of them become luscious and highly nutritious when ripe, more especially after exposure to frost; others are difficult to free from their original asperity and never become luscious, even when quite ripe. The former are edible in the raw state when ripe and are esteemed among the most delicious fruits; the latter are made into very delicious sweetmeats and dried fruit, in various ways. This tree is also distinguished for the excessive hardness of its wood and for the black color it sometimes acquires when old, like ebony. In our country the Kaki has long been subject to improvement by culture and selection of the best varieties, which are then propagated by grafting. We are now in possession of many fine varieties, differing greatly in size, shape, and quality, some being oblong, like a long worm, others flat, resembling, both in shape and color, a large, red, smooth tomato. The soil most adapted to the planting of the Kaki is a gravelly clay loam, neither too dry nor too damp. A free, open space is necessary. The plants require manuring in the middle of the winter. Night soil is preferable and is applied in a circular furrow dug in the ground around each tree. The trees must be pruned each alternate year in early spring or after the autumn harvest season. This may be done by breaking the branches with the hand without using a knife, because this tree should not be touched with iron. The varieties of the Kaki are only propagated by grafting because seedlings are very slow in bearing fruit, and the fruit is always astringent. The preparation for use of such varieties of persimmons as retain slight acidity when ripe is an important consideration. As soon as the change of color indicates maturity the fruit should be picked and prepared for use, as follows: Immerse in warm water and allow to remain over night, then dip in alcohol or whisky and water, and pack in a half barrel or smaller vessel, according to quantity, and allow to stand, closely covered, for ten days in a room as nearly 75 to 80 degrees as possible, being careful to keep the cover tight continuously. At the end of that time many of them will be ready for use. In some cases it may require a longer time than ten days to mature the fruit. The fruit when mature can be peeled and eaten like ripe apples." (See also Nos. 2889-2891.)

This shipment comprised the following varieties, the descriptions of which were published by the Agricultural Society of Japan:

- 2726.** *Tane-nashi.* Fruit very large, oblong, pointed. Skin bright yellowish color; often nearly or quite without seeds. It is used as a dried fruit, called in Japanese "Korogaki." As soon as the fruit indicates ripening, pick, peel, and dry whole. When dried press flat and pack in a close wooden box and cover. Each box should contain only one or two layers. A white saccharine deposit will soon appear on the surface.
- 2727.** *Yemon.* "Fruit large, round, flattened; skin orange; flesh pale yellow, with few seeds. Prepared for market as follows: As soon as the fruit indicates ripening, pick, dip in warm water with 50 per cent of whisky, then pack in a close cask and cover for ten days." (See above.)
- 2728.** *Hachiya.* "Fruit very large, oblong, pointed, a little flattened at the stem; rich red, black at the end when quite ripe."
- 2729.** *Tsuronoko.* "Fruit medium, oblong, pointed. Skin bright red, with a black mark on the end when quite ripe. Flesh rusty color, spotted with purplish-black dots; sweet, rich in flavor."
- 2730.** *Kuro-Kuma.* "Somewhat smaller than 'Hiya Krune' and flattened at the ends. Juicy and very sweet when ripe."

- 2731. RAPHANUS SATIVUS. Radish.**  
 From the Moscow government, Russia. Received through Mr. M. A. Carleton,  
 March, 1899.  
*Long Black Radish.* (1 pound.)
- 2732. RAPHANUS SATIVUS. Radish.**  
 From the Moscow government, Russia. Received through Mr. M. A. Carleton,  
 March, 1899.  
*Tavranka.* (5 ounces.)
- 2733. ZEA MAYS. Corn.**  
 From the Don territory, Russia. Received through Mr. M. A. Carleton, March,  
 1899.  
*Nanerotolo.* Adapted to northern regions. (1 pound.)
- 2734. BRASSICA OLERACEA. Cabbage.**  
 From the Moscow government, Russia. Received through Mr. M. A. Carleton,  
 March, 1899.  
*Saburocka.* Late, coarse, white heads. (4 ounces.)
- 2735. PAPAVER SOMNIFERUM. Poppy.**  
 From the Moscow government, Russia. Received through Mr. M. A. Carleton,  
 March, 1899.  
*Light-blue Poppy.* Sown early in the spring, in rows, 5 to 15 pounds per acre. A  
 very popular oil plant in Russia. The seeds are often used in various dishes.
- 2736. BRASSICA OLERACEA. Cabbage.**  
 From the Moscow government, Russia. Received through Mr. M. A. Carleton,  
 March, 1899.  
*Red cabbage.*
- 2737. BRASSICA OLERACEA. Cabbage.**  
 From Revel, government of Esthonia, Russia. Received through Mr. M. A.  
 Carleton, March, 1899.  
*Revel Winter.* A superior Russian sort.
- 2738. CITRULLUS VULGARIS. Watermelon.**  
 From the Don territory, Russia. Received through Mr. M. A. Carleton, March,  
 1899.  
*Shalis Favorite.* Bright orange-red flesh. Valuable table sort.
- 2739. CITRULLUS VULGARIS. Watermelon.**  
 From the government of Astrakhan, Russia. Received through Mr. M. A.  
 Carleton, March, 1899.  
*Astrakhan.* Imported sort.
- 2740. CITRULLUS VULGARIS. Watermelon.**  
 From Kamishin, in government of Saratov, Russia. Received through Mr.  
 M. A. Carleton, March, 1899.  
*Kemishin.* Red flesh.



- 2741. CUCUMIS MELO. Cantaloupe.**  
 From the Don territory, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Ukrain Banana.* New sort, with orange-colored flesh.
- 2742. CUCUMIS MELO. Muskmelon.**  
 From the Don territory, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Tsaritsa.* New sort, with rose-colored flesh. (1 package.)
- 2743. CITRULLUS VULGARIS. Watermelon.**  
 From the government of Astrakhan, Russia. Received through Mr. M. A. Carleton, March, 1899.
- 2744. CITRULLUS VULGARIS. Watermelon.**  
*Red Beauty.* New, rich-flavored sort.  
 From the government of Saratov, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Golden Honey.* Flesh, golden yellow.
- 2745. RIBES. Currant.**  
 From the Don territory, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Caucasian Red.* Originally from the Caucasus.
- 2746. CITRULLUS VULGARIS. Watermelon.**  
 From the vicinity of Budapest, Hungary. Received through Mr. M. A. Carleton, March, 1899.  
 A large striped melon, dark green; flesh reddish.
- 2747. CITRULLUS VULGARIS. Watermelon.**  
 From the vicinity of Budapest, Hungary. Received through Mr. M. A. Carleton, March, 1899.  
 Large, banded, light green, with narrow, white stripes; solid, reddish core; few seeds. Good, but seemingly rare.
- 2748. CUCUMIS MELO. Muskmelon.**  
 From the banks of the Amu-Darya, at Chardzhui, in Turkestan, Asiatic Russia. Donated by Professor Speshnev, of Tiflis, through Mr. M. A. Carleton, March, 1899.  
*Chardzhui.*
- 2749. CUCUMIS MELO. Muskmelon.**  
 From New Khiva, in Trans-Caspia, Russia. Donated by Professor Speshnev, of Tiflis, through Mr. M. A. Carleton, March, 1899.  
*Ilyalii.* Seeds of season of 1897.
- 2750. CUCUMIS MELO. Muskmelon.**  
 From Meshod, in Trans-Caspia, Russia. Donated by Professor Speshnev, of Tiflis, through Mr. M. A. Carleton, March, 1899.  
*Lekhlut.*

**2751. CUCUMIS MELO.****Muskmelon.**

From the garden of the Emer of Bukhara, Russia. Donated by General Medved, director of the Tiflis Botanical Gardens, through Mr. M. A. Carleton, March, 1899.

*Bukhara.* Large, round, yellow melon, with rose-colored flesh.

**2752. CAMELINA SATIVA.****False flax.**

From Marie Agricultural Experimental Farm, near Saratov, Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

The oil is commonly employed in cookery. A hardy plant. Should be sown in rows early in the spring, at the rate of 10 to 15 pounds per acre.

"This is a troublesome weed in flax fields." (*L. H. Dewey.*)

**2753. VICIA FABA.****Horse bean.**

From the Marie Agricultural Experimental Farm, Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Horse Bean.*

**2754. PISUM ARVENSE.****Pea.**

From the Marie Agricultural Experimental Farm, Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

**2755. CICER ARIETINUM.****Garbanzos.**

From the Marie Agricultural Experimental Farm, Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

Makes a good growth there. (See Nos. 2139 and 2376 in Inventory No. 5.)

**2756. VICIA.****Vetch.**

From the Marie Agricultural Experimental Farm, Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

**2757. TRITICUM VULGARE.****Wheat.**

From Sukhum-Kale, Trans-Caucasia, Russia. Received through Mr. M. A. Carleton, March, 1899.

Sown November 27, and harvested July 12. Adapted for growing in the Southern States.

**2758. TRITICUM VULGARE.****Wheat.**

From Novo-Uzhensk district, Samara government, obtained at Saratov flour mills, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Kubanka Spring wheat.* A superior strain of the wheat grown in that district and adapted to unusually dry, hot regions. Suitable for cultivation on the Southern Great Plains and the Palouse country.

**2759. TRITICUM VULGARE.****Wheat.**

From Armavir in Kuban territory, Russia. Received through Mr. M. A. Carleton, March, 1899.

One of the very best Russian red winter wheats.

**2760. TRITICUM VULGARE.****Wheat.**

From Kozlov district, in Tambov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Theiss Winter wheat.* Probably adapted for growing in Iowa and northern Illinois. Ought to be quite hardy.

- 2761. TRITICUM VULGARE. Wheat.**  
 From Chiliabinsk, in western Siberia, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Winter (?) wheat.* Said to be adapted for winter sowing, though obtained from a strictly spring wheat region.
- 2762. TRITICUM VULGARE. Wheat.**  
 Obtained at the Agricultural Museum at St. Petersburg, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Red Winter wheat.* Locality unknown.
- 2763. TRITICUM VULGARE. Wheat.**  
 From Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Sandomir Winter wheat.* The original pure strain from the vicinity of Sandomir. The most popular wheat in Poland. Adapted for growing in the Northeastern States and perhaps the northern Pacific Coast States.
- 2764. TRITICUM DURUM. Wheat.**  
 From the Lenkoran district, in government of Baku, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Sari-Bugda.* A durum or poulard wheat, the grain of which is apparently adapted for making macaroni. Suited to cultivation in the southern Great Plains.
- 2765. TRITICUM VULGARE. Wheat.**  
 From Kursk government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Winter Ghirka.* A very hard sort, suitable for cultivation in Iowa and Wisconsin.
- 2766. SECALE CEREALE. Rye.**  
 From Pirna-on-Elbe, in Saxony, Germany. Received through Mr. M. A. Carleton, March, 1899.  
*Pirna Winter rye.* Considered one of the best German varieties.
- 2767. TRITICUM VULGARE. Wheat.**  
 From the government of Voronezh, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Sandomir Winter wheat.* Developed from the true Sandomir of Poland into a hardier, darker-colored grain, suitable for growing in the region from Michigan to Nebraska.
- 2768. TRITICUM VULGARE. Wheat.**  
 From Sukhum-Kale, in Trans-Caucasia, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Cape Winter wheat.* Sown November 12 and reaped June 27. Adapted for growing in the Southern States.
- 2769. TRITICUM VULGARE. Wheat.**  
 From Sukhum-Kale, in Trans-Caucasia, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Italian Bearded Spring wheat.* Used in Trans-Caucasia as a winter sort. Sown November 15 and reaped July 7. Adapted for our Southern States.

**2770. TRITICUM VULGARE.****Wheat.**

From Zhukavskaya, in Stavropol government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Red Winter wheat.* A very hard winter variety of the very best quality, suitable for trial in the middle and northern prairie States.

**2771. TRITICUM VULGARE.****Wheat.**

From Ekaterinoslav, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Red Winter wheat.* Adapted for growing in Kansas, Missouri, and Iowa.

**2772. TRITICUM VULGARE.****Wheat.**

From the Marie Agricultural Experimental Farm, in Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*White-eared Gbirka Spring wheat.* Adapted for cultivation in the northern States of the Plains.

**2773. TRITICUM VULGARE.****Wheat.**

From Karayazi, in government of Tiflis, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Gokchaiska Winter wheat.* Sown in September or October (depending upon the weather) and reaped the latter part of May. A very early variety, suitable for growing in the Southern States and the Pacific coast States.

**2774. TRITICUM DURUM.****Wheat.**

From the vicinity of Baku, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Sari-Bugda wheat.* An excellent durum or foulard sort, with exceedingly hard grains, suitable for making macaroni, and adapted admirably to our southern Great Plains and the Palouse country.

**2775. TRITICUM VULGARE.****Wheat.**

From Malii Yazur, in Stavropol government, North Caucasus, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Red Winter wheat.* Probably one of the three best bread wheats in the world. Adapted for growing in the middle prairie States.

**2776. TRITICUM VULGARE.****Wheat.**

From the government of Stavropol, North Caucasus, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Red Winter wheat.* An excellent hard wheat from one of the very best wheat regions known. Adapted for growing in the middle prairie States.

**2777. TRITICUM DURUM.****Wheat.**

From the Marie Agricultural Experimental Farm, in Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Beloturka Spring wheat.* Suitable for making macaroni, but also a good bread wheat when a small per cent of a red wheat is mixed with it. Adapted to the States west of the ninety-seventh meridian. Should be sown very early in the spring.

**2778. AVENA SATIVA.****Oat.**

From the Marie Agricultural Experimental Farm, in Saratov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*French oat.* Adapted to the northern prairie States.

**2779. PANICUM MILIACEUM. Broom-corn millet.**

From the Marie Agricultural Experimental Farm, in Saratov government, Russia.  
Received through Mr. M. A. Carleton, March, 1899.

*Yellow.* Adapted for the northern prairie States.

**2780. PANICUM MILIACEUM. Broom-corn millet.**

From the Marie Agricultural Experimental Farm, in Saratov government, Russia.  
Received through Mr. M. A. Carleton, March, 1899.

*Red.* Adapted for trial in the northern prairie States.

**2781. TRITICUM VULGARE. Wheat.**

From the government of Elizavetpol, Trans-Caucasia, Russia. Received through  
Mr. M. A. Carleton, March, 1899.

*Agdashska Winter wheat.* Adapted for trial in the Southern States.

**2782. AVENA SATIVA. Oat.**

From Karsyazi, in the government of Tiflis, Russia. Received through Mr.  
M. A. Carleton, March, 1899.

*Shatilorski oat.* Adapted for growing in the Eastern and North Central States.

**2783. HORDEUM VULGARE. Barley.**

From Karayazi, in the government of Tiflis, Russia. Received through Mr.  
M. A. Carleton, March, 1899.

*Select Black barley.* Adapted for trial in the Eastern and Southern States.

**2784. AVENA SATIVA. Oat.**

From the Marie Agricultural Experimental Farm, in Saratov government, Russia.  
Received through Mr. M. A. Carleton, March, 1899.

*Shatilovskii oat.* Adapted for trial in the Eastern and Southern States.

**2785. ZEA MAYS. Corn.**

From Sukhum-Kale, in Kutais government, Trans-Caucasia, Russia. Received  
through Mr. M. A. Carleton, March, 1899.

*Caucasian maize.* Adapted for trial in the Southern States.

**2786. SECALE CEREALE. Rye.**

From the Marie Agricultural Experimental Farm, in the Saratov government,  
Russia. Received through Mr. M. A. Carleton, March, 1899.

*Probsteyer Winter rye.* Adapted to the northern prairie States.

**2787. CARTHAMNUS TINCTORIA. Safflower.**

From the Marie Agricultural Experimental Farm, in the Saratov government,  
Russia. Received through Mr. M. A. Carleton, March, 1899.

A dye plant.

**2788. AVENA SATIVA. Oat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Swedish Select.* From the government of St. Petersburg. Mean annual rainfall,  
18½ inches; for the growing season (May to September, inclusive), 10½ inches.  
Mean annual temperature, 38.6°. Soil, a dark humus clay with considerable sand  
intermixed. Sown April 27. Period of growth, 106 to 108 days. A very large-  
grained white oat, much improved from the original seed, which was introduced  
from Sweden into Finland and the St. Petersburg government. Well suited for trial

in western New York, Michigan, Wisconsin, Minnesota, Iowa, eastern North and South Dakota, and perhaps southern Alaska. Amount obtained, 20 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 21.

**2789. TRITICUM DICOCCUM.**

**Emmer.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Yaroslaf Spring.* From the government of Yaroslaf. Mean annual rainfall a little over 20 inches; for the growing season (May to September, inclusive), a little more than 12 inches. Soil, sandy, with considerable clay, but very little humus. Sown in Yaroslaf about May 1, but in this country should be sown earlier, depending, however, upon the latitude where tried. Period of growth, 108 to 112 days. Seed should always be drilled in, at the rate  $2\frac{1}{2}$  to  $2\frac{1}{2}$  bushels per acre. A hardy cereal, little known in this country, but considered a very valuable one in parts of Russia. The hull remains on the seed similarly as in oats and barley. The seed is used both for stock feed and for human food; in the latter case in the form of gruel. It is a variety of *Triticum dicoccum*, called correctly "emmer," but known also as Russian spelt. The Russian name is "polba." Adapted for trial in all States from New York to the Dakotas and Kansas and in Washington and Oregon. Amount obtained, 18 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 27.

**2790. SECALE CEREALE.**

**Rye.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Teshitin Winter.* From the government of Tver. Annual rainfall, 18 to 21 inches; for the growing season (May to September, inclusive), 11 or 12 inches. Soil, a sandy clay and very poor. Harvested July 12 to 15. An excellent variety of rye, well adapted to all the States from New York to the Dakotas and southward to Kentucky and Kansas, and possibly to southern Alaska. Amount obtained, 18 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 23.

**2791. TRITICUM VULGARE.**

**Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Yaroslaf Winter.* From the government of Yaroslaf. Mean annual rainfall near 21 inches; for the growing season (May to September, inclusive),  $11\frac{1}{2}$  to 12 inches. Soil, a strong clay, well manured and well drained. Sown September 9; harvested July 24. Yield, about 18 bushels per acre. A semihard red wheat, which ought to be rather resistant to severe winters. Should be tried in Iowa, eastern South Dakota, northern Nebraska, Michigan, southern Wisconsin and Minnesota, and northern New York, to replace spring wheat, if possible. Amount obtained, 9 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 23.

**2792. TRITICUM VULGARE.**

**Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Yaroslaf Winter.* From the government of St. Petersburg. Mean annual rainfall,  $18\frac{1}{2}$  inches; for the growing season (May to September, inclusive),  $10\frac{1}{2}$  inches. Mean annual temperature,  $38.6^{\circ}$ . Soil, a clay loam, rich in humus. Sown in well-prepared ground September 4, and harvested July 24. Yield, 20 bushels per acre. A semihard red wheat, which should be very resistant to winter cold. Should be tried in northern New York, Wisconsin, Minnesota, Iowa, western North and South Dakota, and southern Alaska, to replace spring wheat, if possible. Amount obtained, 9 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 20.

**2793. HORDEUM VULGARE.**

**Barley.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Kostroma Spring.* From the government of Kostroma. Mean annual rainfall, about 20 inches; for the growing season (May to September, inclusive), 12 inches. Soil, sandy clay loam, well manured. Sown during the first week of May, about  $1\frac{2}{3}$  bushels per acre. Ripens in 88 days. Yields about 26 bushels per acre. In Russia

this sort is especially used for beer brewing. It is well suited to a rather cold climate, not very wet. Might well be tried in any of the Northwestern States from Michigan to the Dakotas. Amount obtained,  $1\frac{1}{2}$  bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 22.

**2794. PANICUM MILIACEUM.**

**Broom-corn millet.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Tambof.* From the vicinity of Morzhansk, in northern Tambof government. Mean annual rainfall, about 20 inches; for the growing season (May to September, inclusive), about 10 inches. Soil, sandy black loam, rather rich in humus. Sown at Morzhansk during the last week of May, but should probably be sown earlier in this country—near May 15 perhaps. Period of growth about 112 days. It is best drilled in at the rate of 12 to 15 pounds of seed per acre. Yields anywhere from 18 to 50 bushels per acre, depending upon treatment and the nature of the season. A yellow-seeded, panicked millet, much different from the ordinary forage millets. This particular sort is a new variety, not well known yet even in Russia, but said to give excellent results. Grown chiefly for the seed, which, besides furnishing excellent stock feed, is extensively used in Russia for human food in the form of grits or gruel and with soups. Should be tried in the Dakotas, Nebraska, east Colorado, Minnesota, and Iowa, and perhaps in Wyoming, Montana, and Washington. Amount obtained, 9 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 28.

**2795. PANICUM MILIACEUM.**

**Broom-corn millet.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Black Voronezh.* From the government of Voronezh. Mean annual rainfall, 20 to 21 inches; for the growing season (May to September, inclusive), 10 to 11 inches. Soil, sandy black loam, rather rich in humus. Sown in Voronezh during the last week of May, but should probably be sown a little earlier in this country—soon after May 15, or earlier. Period of growth about 112 days. It is best drilled in at the rate of 12 to 15 pounds per acre. Yields anywhere from 18 to 50 bushels per acre, depending upon the treatment and the kind of season. A black-seeded, panicked millet (*Panicum miliaceum nigrum*), quite different from the ordinary forage millets of the prairie States. Grown chiefly for the seed, which, besides being excellent stock feed, is also extensively used in Russia for human food in the form of grits or gruel and with soups. Well adapted for trial in almost all the prairie States, especially in the drier, colder districts. Amount obtained, 9 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 29.

**2796. PANICUM MILIACEUM.**

**Broom-corn millet.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Red Voronezh.* From the government of Voronezh. Mean annual rainfall, 20 to 21 inches; for the growing season (May to September, inclusive), 10 to 11 inches. Mean annual temperature, 41.1°. Soil, sandy black loam, rather rich in humus. Sown in Voronezh during the last week of May, but probably should be sown a little earlier in this country—soon after May 15. Period of growth about 115 days. It is best drilled in at the rate of 12 to 15 pounds per acre. Yields anywhere from 18 to 50 bushels per acre, depending upon treatment and the season. A red-seeded millet, but having the compacted form of panicle. Grown chiefly for the seed, which, besides being good stock feed, is extensively used in Russia for human food in the form of grits or gruel and with soups. Well adapted for trial in almost all the prairie States, but especially the drier, colder districts. Amount obtained, 3 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 29.

**2797. PANICUM MILIACEUM.**

**Broom-corn millet.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Red Russian.* From the government of Voronezh. Mean annual rainfall, 20 to 21 inches; for the growing season (May to September, inclusive), 10 to 11 inches. Mean annual temperature, 41.1°. Soil, sandy black loam, rather rich in humus. Sown in Voronezh during the last week of May, but probably should be sown a little earlier in this country—about May 15, or before. Period of growth about 115 days. It is best drilled in at the rate of 12 to 15 pounds of seed per acre. Yields anywhere

from 18 to 50 bushels per acre, depending upon treatment and the season. A red-seeded, panicked millet (*Panicum miliaceum*), but varying greatly as to the form of panicle. Grown chiefly for the seed, which, besides being good stock feed, is extensively used in Russia for human food in the form of grits or gruel and with soups. Well adapted for trial in almost all the prairie States, but especially in the drier, colder districts. Amount obtained, 3 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 29.

**2798. CHÆTOCHLOA ITALICA.**

**Millet.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Kursk.* From the government of Kursk. Mean annual rainfall, about 21 inches; for the growing season (May to September, inclusive), about 11 inches. Soil, a sandy, black, clay loam, rather rich in humus. Sown at the usual time for sowing forage millets. Best drilled in at the rate of 25 to 30 pounds per acre. A very good form of the ordinary German millet, until recently known as *Panicum germanicum* or *Setaria germanica*, now regarded as one of the numerous varieties of *Chaetochloa italica*. In Kursk, grown only for the forage it produces. Suitable for trial in the North Central States from Ohio to Kansas. Amount obtained,  $1\frac{1}{2}$  bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 30.

**2799. ZEA MAYS.**

**Sugar corn.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Malakhof.* From the government of Tula. Mean annual rainfall, near 21 inches; for the growing season (May to September, inclusive), about 11 inches. Considered in that region excellent sugar corn, and especially one that ripens very early. Suitable for trial in Iowa, Nebraska, Kansas, and perhaps South Dakota, Michigan, and Illinois. Amount obtained,  $\frac{2}{3}$  bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 27.

**2800. AVENA SATIVA.**

**Oat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Tobolsk.* From Tobolsk government. Mean annual rainfall, about 18 inches; for the growing season (May to September, inclusive), 12 inches. Mean annual temperature, 31.7°; for the growing season, 56.5°. Seems an excellent sort of white oat for a cold climate. Should be tried in northern New York, Wisconsin, Minnesota, North Dakota, and southern Alaska. Amount obtained, 12 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 21.

**2801. FAGOPYRUM ESCULENTUM.**

**Buckwheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Orenburg.* From the government of Orenburg. Mean annual rainfall, 15.5 inches; for the growing season (May to September, inclusive), 8 inches. Mean annual temperature, 37.9°; for January, 4.5°; for July, 68.8°. Soil, black, sandy loam. Sown as soon as there are no longer night frosts of any importance, at the rate of  $1\frac{1}{2}$  bushels per acre. Period of growth about 90 days. A very large seeded buckwheat, of a deep brown color, wingless. Grown much in east Russia and west Siberia. A sort of gruel is often made of the hulled seed, or it is made into cakes and served with soups. Should be tried in the Great Plains from Oklahoma or Kansas northward, and in portions of the mountain States and perhaps in Iowa and Minnesota. Amount obtained, 15 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 30.

**2802. LATHYRUS SYLVESTRIS WAGNERI.**

**Flat pea.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Tambof.* From the government of Tambof. Mean annual rainfall, 20 inches; for the growing season (May to September, inclusive), 10 inches. Considered an excellent forage plant in the drier regions, though it is slow in obtaining a start. Suitable for the plains States north of Oklahoma. Amount obtained,  $\frac{2}{3}$  bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 31.



**2803. PAPAVER SOMNIFERUM.****Poppy.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Light blue.*

**2804. POLYGONUM WEYRICHII.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Originally from the island of Sachalin, and recently grown in the government of Kief. This perennial plant was discovered by a Russian physician, Dr. Weyrich, and first introduced from Sachalin by Prof. A. T. Batalin, and grown at the Imperial Botanical Gardens at St. Petersburg. It seems to have all the good qualities of sachaline (*Polygonum sachalinense*), and at the same time the leaves are tender and the branches not woody, as in the case of the other plant, which was its chief objection. Should be tried wherever sachaline has been most successful. Amount obtained, 2 pounds.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 31.

**2805. CAMELINA SATIVA.****False flax.**

From Russia. Received through Mr. M. A. Carleton, March, 1899.

**2806. PANICUM MILIACEUM.****Broom-corn millet.**

From Voronezh government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Red.* Adapted for trial in North and South Dakota and Nebraska. (1 package.)

**2807. PANICUM MILIACEUM.****Broom-corn millet.**

From Yaroslav government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Grey-Yellow.* Adapted for growing in Iowa, Minnesota, and Wisconsin. (1 package.)

**2808. PANICUM MILIACEUM.****Broom-corn millet.**

From Tambov government, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Black.* Adapted for trial in the northern prairie States. (1 package.)

**2809. ZEA MAYS.****Corn.**

From the Kuban territory, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Chenkvantinu.* Adapted for trial in Kansas, Missouri, and Oklahoma. (1 package.)

**2810. TRITICUM DURUM.****Wheat.**

From Askhabad, in Turkestan, Asiatic Russia. Received through Mr. M. A. Carleton, March, 1899.

Adapted for trial in the Great Plains west of the one-hundredth meridian.

**2811. ZEA MAYS.****Corn.**

From the Kuban territory, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Kuban.* Adapted for trial in Kansas and Oklahoma. (1 package.)

**2812. ZEA MAYS.****Corn.**

From the Kuban territory, Russia. Received through Mr. M. A. Carleton, March, 1899.

*Checkler.* Adapted for trial in Kansas and Oklahoma.

- 2813. HORDEUM VULGARE. Barley.**  
 From the Kuban territory, Russia. Received through Mr. M. A. Carleton, March, 1899.  
 Adapted for trial in the middle prairie States.
- 2814. SECALE CEREALE. Rye.**  
 From Vytka government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Winter.* Adapted to the very northernmost portions of the United States proper and to Alaska.
- 2815. SECALE CEREALE. Rye.**  
 From Moscow government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Teshitin.* Adapted for growing in the Northern States.
- 2816. AVENA SATIVA. Oat.**  
 From Viborg government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Viborg.* Adapted for trial in the coldest portions of the United States.
- 2817. FAGOPYRUM ESCULENTUM. Buckwheat.**  
 From the Kursk government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Kursk.* Adapted for trial in the Northern States.
- 2818. LUPINUS. Lupin.**  
 From Tambof government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Yellow lupin.*
- 2819. HORDEUM VULGARE. Barley.**  
 From St. Petersburg government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Two-rowed barley.* Adapted for trial in the coldest portions of the United States.
- 2820. AVENA SATIVA. Oat.**  
 From Vyatka, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Vyatka oats.* Adapted for trial in the very coldest portions of the United States and Alaska.
- 2821. TRITICUM VULGARE. Wheat.**  
 From Penza government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Banat winter wheat.* Adapted for trial in Iowa, Nebraska, and Minnesota. A hardy strain of the Hungarian Banat.
- 2822. AVENA SATIVA. Oat.**  
 From Podolia government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Tsobilie oats.* Adapted for trial in the North Central States.
- 2823. TRITICUM VULGARE. Wheat.**  
 From the Kuban territory, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*Nemerchinska Spring.* Adapted for trial in the middle States of the Plains.

- 2824. VICIA SATIVA.** **Vetch.**  
 From the government of Vladimir, Russia. Received through Mr. M. A. Carleton, March, 1899.  
*White vetch.*
- 2825. MADIA SATIVA.** **Tarweed.**  
 From the experiment grounds of the Agricultural Academy at Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.  
 An annual of low growth, with sticky leaves and a fetid odor. Largely grown in Russia as an oil plant. Of little value compared with cotton seed or oleomargarine.
- 2826. LALLEMANTIA IBERICA.** **Lallemantia.**  
 From the experiment grounds of the Agricultural Academy at Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.  
 A low annual of the mint family, with small blue flowers.
- 2827. LUPINUS VARIUS (OF L. ANGUSTIFOLIUS).** **Lupin.**  
 From the experiment grounds of the Agricultural Academy at Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.
- 2828. LUPINUS LUTEUS.** **Yellow lupin.**  
 From the experiment grounds of the Agricultural Academy of Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.  
 This lupin is commonly grown in northern Europe as a soil renovator. It has some value as a forage plant on sandy soils.
- 2829. LUPINUS LUTEUS.** **Yellow lupin.**  
 From the experiment grounds of the Agricultural Academy of Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.  
 A black-seeded variety. (See No. 2828.)
- 2830. LUPINUS PERENNIS.** **Blue lupin.**  
 From the experiment grounds of the Agricultural Academy of Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.
- 2831. LUPINUS ALBUS.** **White lupin.**  
 From the experiment grounds of the Agricultural Academy of Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.
- 2832.**  
 Wanting.
- 2833. PHLEUM BOEHRERI.** **Boehmer's timothy.**  
 From the experiment grounds of the Agricultural Academy at Moscow, Russia.  
 Received through Mr. M. A. Carleton, March, 1899.  
 A promising grass for dry regions.
- 2834. HIBISCUS ESCULENTUS.** **Okra.**  
 From Samarcand, in Turkestan, Asiatic Russia. Received through Mr. M. A. Carleton, March, 1899.
- 2835. AVENA STRIGOSA.** **Wild oat.**  
 From Novogrozdsk, in Minsk government, Russia. Received through Mr. M. A. Carleton, March, 1899.  
 May be a bad weed; should be planted only where it can be eradicated easily.

**2836. TRISETUM PRATENSE.****Yellow oat-grass.**

From the experiment grounds of the Agricultural Academy at Moscow, Russia  
Received through Mr. M. A. Carleton, March, 1899.

A rather slender, loosely tufted perennial, about 2 feet high. It is a good pasture grass for rich soils.

**2837. SECALE CEREALE.****Rye.**

From Shugnan, in Turkestan, Asiatic Russia. Donated by Professor Korzhinskii,  
through Mr. M. A. Carleton, March, 1899.

Adapted for trial in the Great Plains and the Palouse country.

**2838. TRITICUM VULGARE.****Wheat.**

From Roshan, in Turkestan, Asiatic Russia. Donated by Professor Korzhinskii,  
through Mr. M. A. Carleton, March, 1899.

Short-eared sort. Adapted for trial in the middle prairie States and in the Palouse country.

**2839. HORDEUM VULGARE.****Barley.**

From Roshan, in Turkestan, Asiatic Russia. Donated by Professor Korzhinskii,  
through Mr. M. A. Carleton, March, 1899.

Adapted for trial in the middle prairie States and the northern Pacific Coast States.

**2840. TRITICUM VULGARE.****Wheat.**

From Shugnan, in Turkestan, Asiatic Russia. Donated by Professor Korzhinskii,  
through Mr. M. A. Carleton, March, 1899.

Adapted for trial in the middle prairie States and the northern Pacific Coast States.

**2841. HORDEUM VULGARE.****Barley.**

From Shugnan, in Turkestan, Asiatic Russia. Donated by Professor Korzhinskii,  
through Mr. M. A. Carleton, March, 1899.

Adapted for trial in the middle prairie States and the northern Pacific Coast States.

**2842. TRITICUM VULGARE.****Wheat.**

From Roshan, in Turkestan, Asiatic Russia. Donated by Professor Korzhinskii,  
through Mr. M. A. Carleton, March, 1899.

Adapted for trial in the middle prairie States and the Palouse country, Washington.

**2843 to 2850. CITRULLUS VULGARIS****Watermelon.**

This collection of varieties of watermelons was received in March, 1899, through Mr. M. A. Carleton. They were donated by Professor Williams, of Moscow, and are from the Kakhanov experiment field at Groznii, in Ter government, North Caucasus, Russia, as follows:

**2843.** *Big Kakhanov Watermelon.*

**2844.** *Kaki nor.*

**2845.** *Yellow-seeded Kakhanov.*

**2846.** *Early Kakhanov.*

**2847.** *Kamishin.*

**2848.** *Astrakhan.*

**2849.** *Kamishin, changed by long culture in Groznii.*

**2850.** *Korea.*

**2851. MADIA SATIVA.****Tarweed.**

From Russia. Received through Mr. M. A. Carleton, 1898. (See No. 2825.)

**2852 to 2867. LACTUCA SATIVA.****Lettuce.**

This collection of varieties of lettuce was received in 1899. The seeds were used for cooperative experiments conducted under the direction of the Division of Vegetable Physiology and Pathology.

The varieties are as follows:  
From Erfurt, Germany:

2852. *Hampel's Improved Yellow Forcing.*  
2853. *Emperor Forcing.*  
2854. *Yellow Egg.*  
2855. *Stonehead or Golden Ball.*  
2856. *Wheeler's Tom Thumb.*  
2857. *Buttercup.*  
2858. *Forcing, Emperor Improved.*  
2859. *Cos.* Donated by Mr. F. C. Heineman.

From London, England.

2860. *Carter's Longstander.*  
2861. *Carter's Harbinger.*  
2862. *All the Year Around.*  
2863. *Tom Thumb.*  
2864. *Continuity.*  
2865. *Paris Market.*  
2866. *Hanson.*  
2867. *White Nonpareil.*

**2868. BETA VULGARIS.**

**Sugar beet.**

From Germany. Imported by the Division of Chemistry from Dippe Brothers, Quedlinburg. Received March, 1899.

*Kleinwanzlebener.* This seed was all distributed, mainly to State experiment stations, during the season of 1899.

**2869 to 2882.**

From China. A collection of seeds presented by Prof. G. D. Brill, of the Hupeh Agricultural School, Wuchang. Received March, 1899. They comprise the following:

**2869. GLYCINE HISPIDA.**

**Soy bean.**

"This is called the yellow bean and is very much grown here, generally on a trellis. The pods are long and contain many beans each. It is soaked in water for a day or two, then ground and the skins and coarser parts separated by filtering through a coarse cloth. This filtrate is boiled with powdered gypsum, which causes it to curdle, after which it is pressed in molds. The seeds are also soaked in water until the sprouts are 2 or 3 inches long. These are then fried and eaten. The bean is also a source of oil."

**2870. DOLICHOS.**

**Bean.**

"I suppose this is a Dolichos. It is planted in the fall, about October, and is gathered before June. The plants are stocky, about 3 feet high and very full of pods. The green beans are much cooked and eaten. They are also parched, resembling our pop corn, and sold on the streets in large quantities. They are generally gathered before they are fully ripe to make way for another crop."

**2871.**

**Bean.**

"The green bean I have not seen growing, but it is much liked by the people in its dry form. It is said to grow to a height of 2 or 3 feet."

**2872.**

**Bean.**

"I have not seen this black bean growing, but it is said to resemble the green one (No. 2871) in growth and to have about the same value for food."

**2873. GLYCINE HISPIDA.**

**Soy bean.**

"I think this is the same as the Soy bean already grown so much in the United States. Here it is often planted among the growing rice of the second crop, and matures the seed after this is cut. It is planted as a catch crop. It is eaten while green, cooked with rice, and when dry it is ground with poor rice, made into dough with water, rolled out thin, cooked and cut into narrow strips, and eaten at the Chinese New Year—why more at that time than any other I do not know."

**2874. VIGNA CATJANG.****Cowpea.**

“These are regarded as the poorest of the lot and are often fed to horses. As I saw them growing they were only about 1½ feet high.”

**2875. BRASSICA.****Cabbage.**

“This cabbage is very much grown in the vicinity of the city during the winter. It has smooth leaves of dark green color and white midrib and veins; hence its name, ‘Black cabbage.’”

**2876. BRASSICA OLERACEA.****Cabbage.**

“This is the best cabbage that is raised here. It is curly like the Savoy cabbage, though it is small and does not have any more head than our lettuces. It is called Nanking white cabbage, as the seed was said to have come from there at some time.”

**2877. BRASSICA PETSAL.****Petsai.**

“This is the loose white cabbage grown in many parts of China and figured in Bul. 67, Cornell Agric. Exp. Sta., 1894. It is not grown so much in the winter as the others, but is pickled in the fall and used through the winter. It is, as well as turnips, dried in the fall for winter use.” (See No. 2118, Inventory No. 5.)

**2878. AMARANTHUS.**

“This is a summer vegetable and is cooked like spinach.”

**2879. RAPHANUS SATIVUS.****Radish.**

“This is a very fine, smooth radish; red color; round; large size. It grows about 60 miles from here, but is shipped in in large quantities. The people call it a turnip, and say it is the best one grown in the Yangtze Valley.”

**2880. PYRUS JAPONICA.****Japan quince.**

“A large quince called ‘Mung Kua’ or wood squash. They are said to come from near Ichang, 400 miles farther up the river. They are not eaten here, simply placed in a room for their fragrance.”

**2881. PYRUS SINENSIS.****Pear.**

“A fall pear, which is considered very good. It is said to keep for a long time.”

**2882. DOLICHOS LABLAB.****Bean.**

“This is a very strong grower, with purple or white flowers and a profusion of pods, each containing from two to four beans. They are much eaten as snap beans while the pods are young. They are generally grown along the edges of the fields and allowed to run on the mud walls which serve as fences.”

**2883. ARRACACHA ESCULENTA.****Arracach.**

From Jamaica. Received through Messrs. Lathrop and Fairchild, from the Hope Botanical Gardens, Kingston, through the kindness of Mr. Wm. Fawcett, director.

A carrot-like vegetable much used in tropical and subtropical South America. The roots are propagated by subdivision. (See No. 3511.)

**2884. BETA VULGARIS.****Sugar beet.**

From Germany. Imported by the Division of Chemistry from M. Knauer, Gröbers. Received March, 1899.

*Mangold.*

**2885. BETA VULGARIS.****Sugar beet.**

From Germany. Imported by Hoff Brothers, Chicago, Ill., and presented to the Division of Chemistry. The seed was grown by Carl Braune, of Biendorf, Germany. Received March, 1899.

*Biendorf Elite Klein-Wanzlebener.*

**2886. CITRUS AURANTIUM?****Orange.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild, (No. 108), 1899.

"A variety of orange introduced from Chile into Panama by Mr. Gerardo Lewis. The fruits are exceedingly small, often not more than three-quarters of an inch in diameter. Skin very thin and tender, separating very easily from the flesh, which is very sour and juicy. It is rumored the variety came originally from China. Leaves narrowly lanceolate, obtuse; petiole not winged; spineless." (*D. G. Fairchild.*)

**2887. LINUM USITATISSIMUM.****Flax.**

From Oregon. Donated by Prof. J. Withycombe. Seed raised from Belgian stock at the Experiment Station Farm, Corvallis, Oregon.

A fiber flax.

**2888. ANDROPOGON SORGHUM.****Sorghum.**

From Kansas. Received March, 1899.

A series of miscellaneous lots of individual seed heads from plants showing high sugar content. These were distributed to twenty of the State agricultural experiment stations.

**2889 to 2891. DIOSPYROS KAKI.****Kaki.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.

The following three varieties belong with those listed under Nos. 2726 to 2730 (q. v.). The descriptions are those published by the Japanese Agricultural Society.

**2889.** *Hiyakume.* "Fruit very large, roundish-oblate. Skin vermilion red, and shows black marks on the end when quite ripe; fleshy, few seeds. Flesh rusty brown with many purplish brown dots, juicy, very delicious. Superior to any other variety."

**2890.** *Daidai maru.* "Fruit large, oblate, four-sided. Skin yellowish orange. Flesh pale yellow, juicy, sweet; seeds rare."

**2891.** *Shimomaru.* "Fruit medium, round. Skin yellowish orange. Black cobweb marks appear on the end when quite ripe. Flesh rich in flavor."

**2892. PYRUS SINENSIS.****Pear.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.

"Fruit large, round, and in quality similar to Keifer, but superior. The tree is recommended as very hardy and free from blight. It is the best stock upon which to graft American pears."

**2893 to 2900. PRUNUS.****Plum.**

The following collection of young trees of eight of the best varieties of Japanese plums were received through Prof. S. A. Knapp from Japan early in 1899. They are as follows:

- 2893.** *Yone-momo.*
- 2894.** *Nagate-maru.*
- 2895.** *Haku-botan.*
- 2896.** *Cyca-momo.*
- 2897.** *Oku-botan.*
- 2898.** *Beni-botan.*
- 2899.** *Hatankio.*
- 2900.** *Botankin.*

**2901. CITRUS.****Orange.**

From Mount Ran, Japan. Received through Prof. S. A. Knapp, March, 1899.  
*Ushiu.*

**2902. CITRUS.****Orange.**

From Mount Ran, Japan. Received through Prof. S. A. Knapp, March, 1899.  
*Sa Kurajima.*

**2903 to 2908. BAMBUSA.****Bamboos.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.

"The bamboo in Japan is one of the most useful in daily life of any of the plants. It enters into the construction of almost everything in common use among the people, from simple household utensils, to the peasant's house. Its use for the construction of laborers' homes is especially commended for comfort and economy. It is universally used among the common people for conveying water, for eaves' troughs, light fences, staging poles, rafters, etc. It is a highly ornamental plant. It is the product of a warm climate, and when planted in a rich, moist soil frequently grows 60 feet in one year. Invaluable for various convenient uses about a farm." (*Knapp.*)

- 2903. *Hotei-chokee*, pot-grown plants.
- 2904. *Maso-chookee*, pot-grown plants.
- 2905. *Ma-dake*, pot-grown plants.
- 2906. *Moso-chokee*, roots.
- 2907. *Ma-dake*, roots.
- 2908. *Koro-chokee*.

**2909. CINNAMOMUM CAMPHORA.****Camphor.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.

"This is the tree from which commercial camphor is manufactured in Japan. It becomes as large as the Elm, with a similar top, making an attractive and desirable ornament. For commercial purposes it may be grown in dense forests. It is hardy under considerable frost." (*Knapp.*)

**2910. ERIOBOTRYA JAPONICA.****Loquat.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.  
*Giant Loquat* or *Bira*.

**2911. BROUSSONETIA PAPYRIFERA.****Paper mulberry.**

From Japan. Received through Prof. S. A. Knapp, 1899.

"The fibrous portion of the bark from the limbs makes strong strings, which are used by the farmer and gardener for many purposes. The Japanese make a tough paper, almost equal to cloth, by steeping the bark of this tree in warm water for several days, then adding a small amount of starch and pounding into a pulp; after which add water until of required consistency and manipulate as in hand-made paper." (*Knapp.*)

A medium-sized tree, rather common in the Southeastern United States, from Washington, D. C., southward; often escaped, and growing half wild.

**2912 to 2921.****Lilies.**

From Japan. This is a collection of new Japanese lilies secured through Prof. S. A. Knapp. Received March, 1899. They comprise the following:

- 2912. *Lilium auratum, rubro cittatum.*
- 2913. *Lilium auratum, vitlei.*
- 2914. *Lilium auratum, macranthum.*
- 2915. *Lilium speciosum, album.*
- 2916. *Lilium speciosum, rubrum.*
- 2917. *Lilium hansonii.*
- 2918. *Lilium elegans, incomparable.*
- 2919. *Lilium elegans, flora simple.*
- 2920. *Lilium leightlini.*
- 2921. *Lilium tigrinum.*



**2922. CRYPTOMERIA JAPONICA.****Cryptomeria.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.

“One of the most beautiful and useful evergreens in Japan. It grows to an enormous size. At Nikko trees of this species 7 feet in diameter, and one 300 feet in height, may be seen. In Japan it is extensively planted to reforest the mountains. It is also grown as an ornamental tree. By severe pruning when young it will thrive as a hedge. The wood is about as hard as white pine, but when cut into lumber and polished is beautiful, and is used for finishing the interior of dwellings and public buildings. It is hardy under considerable frost.” (*Knapp.*)

“It is hardy as far north as New York and thrives in sheltered positions, even in New England.” (*Rehders.*)

**2923. LESPEDEZA BICOLOR.****Hagi.**

From Japan. Received through Prof. S. A. Knapp, March, 1899.

“This plant was seen by an agent of the Agricultural Department in the experiment grounds of the Imperial Agricultural College at Tokyo, Japan, where it had been under test for three years, with the most excellent results. It is similar to alfalfa in character and nutritive value, but is more hardy, thrives on poorer soil, and has a more vigorous growth. It should be cut from three to five times a year. If allowed to stand too long it takes on a rank growth (5 to 6 feet high) and becomes woody. Soil, sandy loam.” (*Knapp.*)

**2924. COFFEA ARABICA.****Coffee.**

From Trinidad, British West Indies. Received through Messrs. Lathrop and Fairchild, 1899.

**2925. PASSIFLORA.****Passion fruit.**

From Caracas, Venezuela. Received through Messrs. Lathrop and Fairchild (No. 116), 1899.

“Passion fruits from the market at Caracas. A purple variety with delicious grape-flavored pulp. Species unknown.” (*D. G. Fairchild.*)

**2926. CAPSICUM ANNUM.****Pepper.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 100), 1899.

“Native varieties of Chile peppers from the market. Said to be the hottest known in Panama.” (*D. G. Fairchild.*)

**2927. COFFEA ARABICA.****Coffee.**

From Caracas, Venezuela. Received through Messrs. Lathrop and Fairchild (No. 94), 1899.

“A variety of giant coffee. Seed all from a single tree.” (*D. G. Fairchild.*)

**2928. EUGENIA.****Panama cherry.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 106), 1899.

“The so-called ‘Cherry’ of Panama. Possibly a *Eugenia*. Very sour. Used for preserves and planted by Europeanized Columbians. A small tree, 10 feet high; foliage like that of mandarin orange, but much smaller.” (*D. G. Fairchild.*)

**2929. FRAGARIA VESCA.****Strawberry.**

From Caracas, Venezuela. Received through Messrs. Lathrop and Fairchild (No. 93), 1899.

“The native wild strawberry, bought in the market of Caracas. Highly prized by the Europeans living in Caracas, and of very good flavor. Dr. A. Ernst informs me that they are descendants of strawberries originally introduced by the Spaniards, although now growing wild. From the *Tierra fria* or high (3,000 feet and over) altitudes.” (*D. G. Fairchild.*)

**2930. PHASEOLUS VULGARIS.****Bean.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 109), 1899.

"The so-called *Blanco*, or white bean of Peru. Said to be excellent." (*D. G. Fairchild.*)

**2931. CHENOPODIUM QUINOA.****Quinoa.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild, 1899.

The seeds are much used, being cooked with soups and with fish. "The leaves are eaten like spinach; in Peru the seeds are used in soups, for making cookies, and even for making a sort of beer. It is necessary before using the grain to boil it in water to get rid of an acrid bitter principle, which otherwise will render the taste very disagreeable." (*Vilmorin.*)

In France the Quinoa is sown from the month of April on. It must be abundantly watered during very hot weather. The seed ripens in August or September.

**2932. VIGNA CATJANG.****Cowpea.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 110), 1899.

*Colorado.* "A native variety of bean; the name means simply brown. Details as to culture wanting." (*D. G. Fairchild.*)

**2933. SESAMUM INDICUM.****Sesame.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 107), 1899.

"The seed is used as a medicine. Put in water (soaked eight to ten hours) it becomes mucilaginous, and when sweetened to taste and with a small quantity of lime juice is said to be a more refreshing drink than linseed. It might be used in the harvest field instead of oatmeal and water. Should be tested for invalids. Perhaps it is the same as the Benne seed of India." (*D. G. Fairchild.*)

**2934. VIGNA CATJANG.****Cowpea.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 111), 1899.

*Morado.* "a native bean of the isthmus. Said to be excellent in quality." (*D. G. Fairchild.*)

**2935. CAPSICUM ANNUM.****Pepper.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 96), 1899.

"An indigenous variety of Chile pepper, said to be hot but not so strong as birds-eye pepper. From market of Panama." (*D. G. Fairchild.*)

**2936. BENINCASA CERIFERA.****Wax-gourd.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 99), 1899.

"A curious cucurbit, like a watermelon but pubescent, with long hairs. Flesh said to be palatable raw or cooked. Probably introduced here from China." (*D. G. Fairchild.*)

This plant was introduced into America in 1892, as "Chinese preserving melon." The fruits are said to keep a long time and are recommended by various writers for eating like cucumbers, or cooked liked squash.

Bailey says: "I have been unable to relish the food when uncooked, but made into preserves or sweet pickles it is one of the best of all subjects for the purpose, and it is worthy of general cultivation for such culinary use."

Naudin notes the existence of at least two varieties of this vegetable, one sort with cylindrical fruits, the other with larger oval fruits. It is known to the Chinese as *Zit-kwa*, or *Tung-kwa*.

**2937. RICINUS COMMUNIS.****Castor bean.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 105), 1899.

"An ornamental called Rhubarb tree; small; 3 feet high, with curious swollen trunk like *Boucarnea*. Native, but cultivated in gardens for its bright scarlet flowers and flower stalks. Leaves somewhat like pawpaw or castor bean. May be related to *Ricinus*." (*D. G. Fairchild.*)

**2938. CAPSICUM ANNUM.****Pepper.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 98), 1899.

"Large sweet peppers from Chinese garden in environs of Panama. May possibly have been imported from China, though probably indigenous. No name obtained." (*D. G. Fairchild.*)

**2939. CHRYSOPHYLLUM CAINITO.****Star apple.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 102), 1899.

"Seed from two specimens; 3 inches in diameter; fine flavor." (*D. G. Fairchild.*)

**2940. VIGNA SINENSIS.****Cowpea.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 103), 1899.

"A variety of snap-bean grown by the Chinese near Panama, with unusually long, slender pods; said to be of excellent quality. Possibly introduced from China, although no definite information could be obtained." (*D. G. Fairchild.*)

**2941. EUGENIA JAMBOS.****Rose apple.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 101).

"This fruit, if properly candied, is one of the finest for the purpose. The rose odor and flavor is remarkably pronounced, and it certainly deserves attention." (*D. G. Fairchild.*) The Rose apple is a medium-sized tree, native of India. It is cultivated in southern Florida.

**2942. CAPSICUM ANNUM.****Pepper.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 97), 1899.

"A very hot pepper. Cherry-shaped; orange when ripe." (*D. G. Fairchild.*)

**2943. RHIZOPHORA MANGLE.****Mangle.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 115), 1899.

"The so-called 'Mangle,' a large tree growing abundantly in swamps. Tans a very fine red. The bark has never been exported. Wood used for rafters." (*D. G. Fairchild.*)

**2944. BYRSONIMA?****Nance.**

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 113).

"The *Nance* is a small, slow-growing tree, with hard wood, the very best known in this country for building boat ribs; very tough. The trees are wild in this region. The bark is used for tanning, and I am told is the best tanning material of this region. It tans skins a light yellow. The roots are macerated in cold water and the pulp strained out and a sort of 'chicha,' or drink, is prepared, which is relished by Europeans and natives. An ice is made from this 'chicha,' said to be very good.

The drink is sour, and has in it a large amount of vegetable fat, giving it a peculiar greasy flavor. The bottled fruits keep for months if completely under water, and 'chicha' can be prepared from it at any time. The fresh ones are, however, preferable. No medical properties are ascribed. Should be called to the attention of makers of summer drinks." (*D. G. Fairchild.*)

According to Baillon, the Nance-bark of Mexico is possibly *Byrsonima crassifolia*. Speaking of this genus, which belongs to the *Malpighiaceae* family, Niedenzu says: "The fruit of all the species are probably edible; the Indians of northern Brazil and Guiana use as a stone fruit especially *B. verbascifolia*, *B. crassifolia*, *B. sericea*, *B. intermedia*, *B. pachyphylla*, and *B. spicata*. These fruits are called (probably because of their small nutritive value) *Moro-cy Murecy*, *Murici*, *Murei*, or *Murella*, in French *Mourceller*." Niedenzu also states that some of the species are used for medicinal purposes, tanning, dyeing, and in construction. (See No. 2943.)

#### 2945. ORYZA SATIVA.

Rice.

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 114), 1899.

"Shortest-kerneled variety known here. Said to have been sent to the States for cleaning, but the mills there failed to remove the thin integument close to the kernels." (*D. G. Fairchild.*)

#### 2946. MOMORDICA CHARANTIA.

Balsam apple.

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 104), 1899.

"A curious cucurbit grown by the Chinese near Panama, possibly introduced from China. Flowers three-fourths inch across, lemon yellow; vigorous creeper, trained on trellis; fruit, when young, green, with gray blotches; cucumber-shaped, but tapering to a point; foliage luxuriant, leaves small. Fruit, when ripe, a showy orange, with seeds in bright crimson pulp. Whole rind is soft and sweetish. Eaten raw, and cooked as a vegetable. Fruit opens into three valves like a pod." (*D. G. Fairchild.*)

"This plant is nice as a condiment and an ingredient of curries and other table preparations in the Tropics, especially of the Old World, where it is native. It is also grown as an ornamental vine, and for this purpose is sold by American seedsmen, along with an allied species. *Mormordica balsamina*, or Balsam apple." (*Bailey.*)

This fruit is known to the Chinese as La-kwa, K'u-kwa. Numerous forms are cultivated in India, the rainy-season one being called *Kareili*, and the hot-weather variety *Karela*. Edward Willmott suggests that it may be used in salad, as pickles, or in curry. He further says in India the fruit is sliced, then fried. It is necessary to boil it in water first, in order to remove a bitterness.

#### 2947. CONVULVULUS.

From Panama, Colombia. Received through Messrs. Lathrop and Fairchild (No. 112), 1899.

"Grown as sweet-potatoes are grown, in raised ridges, but producing no enlarged roots and running only scantly. The foliage and tips of the shoots are used as greens; boiled like spinach. The plant was found growing in a Chinese garden near Panama and very little information regarding the method of cutting was obtainable. The plants were attacked by a white rust (*Albugo*), and care should be exercised to prevent this disease from spreading to sweet-potatoes in regions where it does not yet exist. (*D. G. Fairchild.*)

#### 2948. CITRUS LIMETTA.

Lime.

From Colombia, South America. Donated by Mrs. L. N. Webb, Takoma Park, Washington, D. C., through Mr. H. J. Webber; received March, 1899.

#### 2949. ACACIA.

From Colombia, South America. Donated by Mrs. L. N. Webb, Takoma Park, Washington, D. C., through Mr. H. J. Webber; received March, 1899.

**2950. PSIDIUM.****Guava.**

From Colombia, South America. Donated by Mrs. L. N. Webb, Takoma Park, Washington, D. C., through Mr. H. J. Webber; received March, 1899.

**2951. PSIDIUM.****Guava.**

From Colombia, South America. Donated by Mrs. L. N. Webb, Takoma Park, Washington, D. C., through Mr. H. J. Webber; received March, 1899.

**2952. PSIDIUM.****Guava.**

From Colombia, South America. Donated by Mrs. L. N. Webb, Takoma Park, Washington, D. C., through Mr. H. J. Webber; received March, 1899.

**2953. TRITICUM DURUM.****Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Kubanka Spring wheat.* From the Turghai territory in the Kirghiz Steppes, 40 miles southeast of Orenburg. Grown by Mr. Gnyezdilof. Average rainfall for the year, about 15 inches or a little less; for the growing season (May to September, inclusive), about 8 inches. The last season was an unusually dry one. Summer short but very hot. Soil much grayer than the usual black earth, with a greater mixture of clay, and also considerable sand. The common custom is to plow the ground the preceding autumn, and then stir the surface again before sowing in the spring. Period of growth in this region about 100 days. Mean time of harvest, August 10 to 12. The wheat is a *durum*, extremely hard, and of excellent quality. The best bread wheat in the Volga-Ural region, but may be received complainingly by our millers; 10 to 25 per cent of a softer red wheat, however, is mixed with it in grinding. It is very drought resistant, and considerably resistant to orange-leaf rust. Suitable for trial in this country in extreme western Nebraska, Kansas, the Dakotas, east Colorado, Texas Panhandle, and perhaps the Columbia plains and New Mexico. This variety might be transformed into a winter sort in warm latitudes. Amount obtained, 6 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 14.

**2954. TRITICUM DURUM.****Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Pererodka Spring wheat.* From Orsk district, Orenburg government. Average annual rainfall of the region, about 15 inches; for the growing season (May to September, inclusive), about 8 inches. The last season was an unusually dry one. Mean annual temperature, 37.9°. Soil, the usual "black earth" of east Russia, though perhaps not so dark as in the Samara government; similar to western Nebraska or eastern Colorado soil. Should be sown early. Period of growth about 100 days. Harvest time, August 10 to 12. Sown in soil plowed the previous autumn. It is a wheat allied to the Kubanka, and said to be originally identical, but it is a little darker and perhaps softer, and has become changed by transference to darker, richer soils. A hard wheat, making good bread, but hardly so good as Kubanka. It is a very drought-resistant variety. In this country it may well be tried in the Dakotas, Minnesota, Nebraska, Kansas, and perhaps Oklahoma, eastern Colorado, Texas, and Columbia plains. Amount obtained, 6 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 16.

**2955. TRITICUM VULGARE.****Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Russian Spring wheat.* From the Kirghiz Steppes, in the vicinity of Orenburg. Mean annual rainfall of the region, about 15 inches; for the growing season (May to September, inclusive), about 8 inches. Summers short but very hot. Soil, the rich "black earth" of the Russian plains, but probably not so dark as in Samara government; much like west Dakota soils. Wheat should be sown early. Period of growth about 100 days. Mean harvest time, August 10 to 12. Sown in soil that was plowed the previous autumn. Rather a small-grained, hard, or semihard red wheat. Makes a very good bread itself, but is also used to mix with Kubanka by millers

of the Volga region. Suitable for trial in this country in the Dakotas and Minnesota particularly, but might also be transformed into a good winter wheat in districts farther south. Amount obtained, 6 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 16.

**2956. TRITICUM VULGARE.**

**Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Banatka Winter wheat.* From Kublich, in eastern Podolia, but introduced there originally from the Banat district in Hungary. Mean annual rainfall of the region, about 18 inches; for the growing season (May to September, inclusive), about 10 inches. Mean annual temperature, near 44.6°. The locality is near the edge of the "black earth" belt, and therefore partakes also somewhat of the nature of the soils of the "gray forest lands." The wheat is probably adapted to almost any medium soil of our prairie region, or even of New York. Should be sown early (September 10 to 15). Mean harvest time, July 27. An excellent semihard red wheat, of medium-sized grains. Very popular in Hungary, but made perhaps all the better by acclimation in Russia. Suitable for trial in Michigan, Ohio, New York, Indiana, Illinois, Kansas, and perhaps Nebraska and Iowa. Amount obtained, 9 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 17.

**2957. TRITICUM POLONICUM.**

**Polish wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Polish Spring wheat.* From Glinyanaya, in northern part of Kherson government. Mean annual rainfall of the region, about 20 inches. Mean annual temperature, about 44.6°. Sown in this region about April 15, but the seed time varies exceedingly, depending on the condition of the weather. Period of growth about 115 days. Mean harvest time about August 1. This variety belongs to the species *Triticum polonicum*, and must not be confused with the sort that is most commonly called Polish wheat in Russia, which latter is a variety of *Triticum vulgare* and entirely different. It is the largest-grained wheat known, is extremely hard, and contains a very large per cent of gluten comparatively. It is especially valuable for macaroni production and for certain pastries. It is at first bearded, but loses its beards at harvest time. It seems adapted to a soil not too rich in humus, with considerable clay and some sand, and a rather warm, dry climate. Should be tried in this country in the western portions of Texas, Oklahoma, Kansas, and Nebraska, in eastern Colorado, Arizona, and California, and perhaps in some of the Southern States. It is considerably resistant to orange-leaf rust. Amount obtained, 6 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 18.

**2958. TRITICUM VULGARE.**

**Wheat.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Sandomir Winter wheat.* From the government of Radom, in Poland. Mean annual rainfall, 27 inches; for the growing season (May to September, inclusive), 15.5 inches. Mean annual temperature, about 44.6°. Mean harvest time, August 6. A rather soft, plump, white wheat, quite susceptible to changes of soil and climate. Best grades of the variety to be obtained only in Poland, near the town of Sandomir. Has already been tried in the United States with some success. Might be of especial value for cracker making and for certain breakfast foods. Should be tried on the Columbia plains, in northern California, and in New York. Amount obtained, 3 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 19.

**2959. TRITICUM DICOCCUM.**

**Emmer.**

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Ufa Spring emmer.* From the government of Ufa, about 8 miles from the city of the same name. Mean annual rainfall, 16.6 inches; for the growing season (May to September, inclusive), 10.9 inches. Mean annual temperature, 37.5°; for January, 9.5°; for July, 69.4°. Soil a very rich, deep, black loam, the famous "black earth" of Russia. Should be sown quite early in the spring, drilled in at the rate of 2 to 2½ bushels per acre. Period of growth about the same as for oats. This very hardy

cereal is little known in this country, but is much valued in Russia and Germany. It is used both for stock feed, similarly to oats, and also as human food in the form of gruel. It is very resistant to cold and often to drought also, but may suffer some from rust in warm, wet seasons. It is a variety of *Triticum dicoccum*, correctly called emmer, but also known as Russian spelt. The Russian name is "polba." Is worthy of thorough trial. Admirably adapted for trial in all the extreme Northern States, from Minnesota to Washington, and in Alaska; also in arid districts. Amount obtained, 6 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 26.

## 2960. PANICUM MILIACEUM.

## Broom-corn millet.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Red Orenburg.* From the Turghai territory of the Kirghiz Steppes, about 40 miles southwest of Orenburg. Mean annual rainfall, about 15 inches or less; for the growing season (May to September, inclusive), about 8 inches. Mean annual temperature, about 37.9°. Summers short but very hot. Soil differs from the usual "black earth" in being a rather stronger clay with a considerable mixture of sand, making it also grayer in color—the same sort of soil to which durum wheats are so well adapted. Should be sown probably about May 15 or soon after, though in Russia it is sown about the 25th or later. Period of growth, 110 to 115 days. A red-seeded, paniced millet (*Panicum miliaceum sanguineum*), quite different from the ordinary forage millets of our prairie States. Grown chiefly for the seed, which is not only excellent for stock feeding, but in Russia is most widely used for human food in the form of grits or gruel and with soups. Well adapted for trial in the Dakotas, Nebraska, eastern Colorado, Kansas, and similar cold and arid districts. Amount obtained, 3 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 29.

## 2961. SECALE CEREALE.

## Rye.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Sisolsk Winter rye.* From Ust-Sisolsk, in Vologda government, about 61½° north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall not known, but during one year it was 18 inches. Seed obtained from Mr. A. E. Sukhanof, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow without manure; (2) winter rye; (3) spring barley and oats with manure. Variety grown in that region for many years and therefore thoroughly adapted to extreme cold, and rather drought-resistant. Should be tried in Alaska, and perhaps also in the very coldest districts of the United States proper. Amount obtained, ⅔ bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 24.

## 2962. HORDEUM VULGARE.

## Barley.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Sisolsk Spring barley.* From Ust-Sisolsk, in Vologda government, about 61½° north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall unknown, but during a single year it was 18 inches. Seed obtained from Mr. M. I. Tur, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow without manure; (2) winter rye; (3) spring barley and oats with manure. Should be tried principally in Alaska or other extremely cold districts. Amount obtained, ⅔ bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 23.

## 2963. AVENA SATIVA.

## Oat.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

*Zhelannii oat.* From Ust-Sisolsk, in the Vologda government, about 61½° north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall not known, but during a single year it was 18 inches. Variety grown in the region 12 years; originally obtained from Moscow. Thoroughly acclimated. The grower strongly recommends a two-days' soaking of the seed before sowing in order to hasten germination. Seed obtained from Mr. M. I. Tur, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow

without manure; (2) winter rye; (3) spring barley and oats with manure. Harvested season of 1898. Should be tried in Alaska and the very coldest regions of the United States. Amount obtained,  $\frac{2}{3}$  bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 21.

## 2964. *BROMUS INERMIS.*

## Smooth brome grass.

From France, 1899.

This grass is also known as Austrian brome, Hungarian brome, and awnless brome. Last year the Department of Agriculture imported from Russia and distributed in the Northwest 12 tons of seed. Many favorable reports have been received, indicating that the cultivation of this species is likely to prove one of the most important agricultural resources of the subarid regions of the West. It is extremely resistant alike to cold and to drought, and is a vigorous grower, furnishing both hay and pasturage in abundance, and of a superior quality. Some correspondents have reported that they did not obtain a stand the first season, and have applied for more seed. Attention is accordingly called to the fact that in unfavorable seasons this grass may make very little progress the first summer, but if allowed to remain through the winter such plots not infrequently put forth a vigorous growth the next season.

The South Dakota station has had perhaps the most extended and successful experience with *Bromus inermis*, with the result that Professor Chilcott has been able to prepare the following practical directions for planting and subsequent care:

*Seed bed.*—Prepare the seed bed by plowing to a good depth, using land as free as possible from weeds. Harrow and fine thoroughly.

*Sowing.*—Sow the seed broadcast early in the spring at the rate of from 15 to 20 pounds per acre, and cover with the harrow. In case the ground is liable to blow, sow a thin nurse crop of about one-half bushel of barley or oats.

*After care.*—In case the weeds grow vigorously or a nurse crop is used, mow once or twice in order to prevent smothering the tender plants and robbing them of moisture. If, however, no dry spell is present the nurse crop can be cut for hay, but if a drought does come, mow without delay, and leave the crop to mulch the ground unless it be so heavy that it will smother the young grass. These precautions are given to insure a stand. You must remember you are not trying to raise the nurse crop but to get a stand of this new and valuable grass, which will last you many years. Where the danger of blowing is not great, sow without a nurse crop. It is best not to pasture the first year. If the stand looks thin the first fall, do not plow it up, but leave it a second year.

It will usually furnish a crop of seed and a crop of hay the second year. There is a ready sale for the seed at good prices, but it will be more valuable to you for seeding more ground.

The success of this grass in the Dakota region has been demonstrated, but the extent of its utility remains to be discovered by experiments in other parts of the country. For this purpose packages of 2 pounds of seed, enough to plant an eighth of an acre, are sufficient. Commercial quantities should be secured from the seed dealers, who will probably have an adequate supply available next year.

## 2965. *EUCHLÆNA LUXURIANS.*

## Teosinte.

From Florida. Received March, 1899.

“This plant needs a long season of hot weather, a rich soil, and abundant moisture in order to succeed well, and it is useless to plant it where all these conditions can not be had. It is a remarkably vigorous grower, reaching 10 or 12 feet in height, with an unusually abundant supply of leaves and slender stems, which continue to grow until killed by frosts. If cut when it reaches 4 or 5 feet in height it makes excellent fodder, and will produce a second crop fully as large as the first. If left to grow until September or October it furnishes excellent material for the silo, in greater amount per acre than either corn or sorghum, and we have found no other plant which is its equal for soiling purposes. Its leaves are similar to those of sorghum, but much longer. The stalks contain 8 to 10 per cent of sugar. The plants stool freely, sometimes as many as 50 stalks growing from a single seed. It has done fairly well at the Georgia and Mississippi experiment stations and very fairly in North Carolina, but has made a heavier crop than any other plant which has ever been grown at the Florida and Louisiana stations. In Mississippi the heaviest yield has been 22 tons per acre, while the Louisiana station reports the enormous yield of over 50 tons of green forage per acre. Its value for feeding is apparent from the fact that the entire crop grown at the Louisiana station was sold to local dairymen at the rate of \$2 per



ton while standing in the field. Its season of growth is so long that it seldom matures north of latitude 30° N., but it has ripened well at the Florida and Louisiana stations. The seed, 4 to 5 pounds per acre, should be planted in hills 4 or 5 feet apart each way, about the time when cotton is planted, and the crop cultivated like corn. The greater distance should be given on the richer soils." (*S. M. Tracy.*)

**2966. DIOSCOREA.****Yam.**

From Barbados. Received through Messrs. Lathrop and Fairchild (No. 61), 1899.

*Crop or Hunt.* "The most expensive yam grown in Barbados, selling for \$2 per 100 pounds. They are grown like sweet potatoes, planted as pieces of the root, one in a hill, 3 to 6 feet apart. Each root should be cut into eight pieces. No poles are needed. Planted in April and harvested in December in Barbados. Cook exactly like Irish potatoes. For Florida." (*D. G. Fairchild.*)

**2967. DIOSCOREA.****Yam.**

From Barbados. Received through Messrs. Lathrop and Fairchild (No. 62), 1899.

*Barbados Red.* "This is a quicker starting variety than the 'Crop yam' (No. 2966). Grown like sweet potatoes, although considered an inferior yam as regards quality, selling here (Barbados) for only 80 cents a hundred pounds. It is worthy of trial because it is quicker to start." (*D. G. Fairchild.*)

**2968. DIOSCOREA.****Yam.**

From Barbados. Received through Messrs. Lathrop and Fairchild (No. 63), 1899.

*Lisbon.* "This variety is sold at about \$1 per 100 pounds here (Barbados), and for boiling and roasting is considered to be the best in the island. Grown like Nos. 2966 and 2967, except that it is generally planted in May instead of April." (*D. G. Fairchild.*)

**2969 to 2972. IPOMŒA BATATAS.****Sweet potato.**

From Barbados. Received through Messrs. Lathrop and Fairchild (No. 64), 1899.

"This comprises selected roots of four of the varieties of sweet potatoes which are the best grown in Barbados. The sweet potatoes of Barbados are noted throughout the West Indies, and are worthy a trial in New Jersey and Florida." (*D. G. Fairchild.*)

**2969.** *White Gink.* "The best shipper."

**2970.** *Caroline Lee.* "The sweetest."

**2971.** *White Sealy.* "Has short vines."

**2972.** *Red Sealy.*

**2973. LACTUCA SATIVA.****Lettuce.**

From France. Received April, 1899.

*Laitue blonde d'ete.* *Large, white cabbage lettuce.* *All the year around.* "This lettuce is one of the most generally cultivated, as indicated by the multiplicity of its names. It is very early; is very productive in spite of its small size, because, as the gardeners say, it is all heads. It makes a fine salad, the leaves being tender, crisp, and crinkly. This variety grows on almost all soils, and is cultivated all over the world." (*Vilmorin.*) The seed is white.

**2974. LACTUCA SATIVA.****Lettuce.**

From France. Received April, 1899.

*Algiers.*

**2975. LACTUCA SATIVA.****Lettuce.**

From France. Received April, 1899.

*Laitue gotte lente a monter.* *Cabbage lettuce.* *Tom Thumb.* *Stone tennis ball.* "A rather small and relatively productive variety, which heads well. It is one of the best for spring and summer; tender and of excellent quality." (*Vilmorin.*) The head is compact and well formed when grown outside, but very tender, and keeping a long time even in summer.

**2976. TRIFOLIUM PRATENSE.****Clover.**

From Russia. Received through Prof. N. E. Hanson, February, 1898.

*Russian Red clover.* A strain said to be more hardy than the American-grown sorts.

**2977. CICER ARIETINUM.****Garbanzos.**

From Casa Blanca or Mogador, Morocco. Presented by Captain Coghlan, of the U. S. S. *Raleigh*, through Mr. W. T. Swingle.

"Used for fodder and green manure. The peas are not bad for food if soaked well before boiling." (See No. 2139 in Inventory No. 5.) This was collected about October, 1897, and went through the battle of Manila.

**2978. VICIA FABA.****Horse bean.**

From Casa Blanca or Mogador, Morocco. Donated by Captain Coghlan, of the U. S. S. *Raleigh*, through Mr. W. T. Swingle.

This was collected about October, 1897, and went through the battle of Manila. The "Feverole" of the French. Used for forage and for green manure, while the beans are eaten. Dr. Trabut says the smaller horse beans are the better. Dr. Trabut also says there is a similar sort grown in Kabylia. M. Yahia says that they are used by the Arabs to make goats give more milk. (See No. 2375 in Inventory No. 5.)

**2979. COFFEA.****Coffee.**

From Beagle, French Congo, Africa. Gift of Dr. Trabut, through Mr. W. T. Swingle, April, 1899.

Does well on low, wet lands.

**2980. BRASSICA OLERACEA.****Cabbage.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria, through Mr. W. T. Swingle, April, 1899.

This cabbage, according to Dr. Trabut, grows wild in North Africa. It is a form of the original plant from which the many cultivated races of cabbage have come.

**2981. NOPALIA COCCINELLIFERA.****Prickly pear.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria, through Mr. W. T. Swingle, April, 1899.

This is said by Schumann to be used as a host plant for the cochineal insect. It is supposed to be a native of South America, but is commonly cultivated throughout the Tropics. This number comprises pads having enormous numbers of fruits. Hybridize with edible *Opuntias*.

The genus *Nopalium* differs from *Opuntia*, with which it coincides exactly in habit, only in having longer stamens, and a style which projects far out of the flower. These plants are frequently referred to as species of *Opuntia*.

**2982. SORGHUM HALAPENSE.****Wild sorghum.**

From Algeria. Received through Mr. W. T. Swingle, April, 1899.

Considered by Dr. Trabut to be undoubtedly the wild form of sorghum and Milo-maize. This is probably the same as Johnson grass, and great caution should be exercised in planting it, as the latter is a very bad weed in the South and Southwest.

**2983. SORGHUM VULGARE.****Sorghum.**

From Algeria. Received as a gift from Dr. Trabut through Mr. W. T. Swingle, April, 1899.

*Sorgo vivace* or *Sorgho d'Alep géant*. Perennial sort from Soudan. A remarkable race propagated by cuttings like sugar cane. Yields prodigiously but requires water. Try in the South. Probably will be useful for silage.

**2984. CHAMAEROPS HUMILIS.****Palm.**

From Algeria. Received through Mr. W. T. Swingle, April, 1899.

One of the many ornamental varieties of the European dwarf fan-palm, having deep green, nearly closed leaves (i. e., with a small sinus). An improved ornamental variety. (See Nos. 1931, 1932, 2216, and 2217, Inventory No. 5.)

**2985. EUCALYPTUS RAMELIANA.****Eucalyptus.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria, through Mr. W. T. Swingle, April, 1899.

A hybrid between *E. rostrata* and *E. botryoides*. Dr. Trabut himself planted the seeds from *E. botryoides* and obtained these hybrids. This, as well as *Eucalyptus trolardiana* (No. 2987), is highly recommended by Dr. Trabut for planting in Algeria, because of its great vigor.

**2986. EUCALYPTUS RAMELIANA.****Eucalyptus.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria, through Mr. W. T. Swingle, April, 1899.

Seed from a small tree in the Botanic Gardens at Mustapha. (See No. 2985.)

**2987. EUCALYPTUS TROLARDIANA.****Eucalyptus.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria, through Mr. W. T. Swingle, April, 1899.

Another of Dr. Trabut's hybrids. This is a hybrid of *E. rostrata* and *E. tereticornis*. *E. trolardiana* is also a vigorous grower. Both this hybrid and *E. rameliana* (Nos. 2986 and 2987) are highly recommended by Dr. Trabut, who says they come nearly true to seed.

**2988. EUCALYPTUS GOMPHOCEPHALA.****Touart.**

From Algeria. Received from Mr. W. T. Swingle, April, 1899.

A west Australian tree 100 to 150 feet high, of rapid growth, producing valuable timber. "This wood is of a pale yellowish color, remarkable for strength and hardness, very heavy, of a close, twisted, and curled grain." (*Von Mueller*.) "On account of its great strength it is much used in shipbuilding." (*J. H. Maiden*.) This species has recently been recommended for general culture in Algeria by Dr. Trabut, Government Botanist. It is still rather rare in North Africa, though there is a fine plantation at Morengo, where it is used for making wine casks, etc., by M. de Malglaive.

**2989. EUCALYPTUS CORYNOCALYX.**

From Algeria. Received from Mr. W. T. Swingle, April, 1899.

Resists drought. Eaten by cattle on account of small amount of essence in leaves. A vigorous tree at Algiers. Fruit said to take eighteen months to ripen. "The sweetish foliage is browsed by cattle and sheep." (*J. H. Maiden*.)

**2990. EUCALYPTUS.**

From Mustapha, Algeria. Donated by Dr. Trabut, Government Botanist of Algeria, through Mr. W. T. Swingle, April, 1899.

"A hybrid of at least three species, in which *E. rudis* and *E. rostrata* enter." (*Dr. Trabut*.) Has long weeping branches, very pretty. Flowers for a long period. Possibly *E. Andraena*, Naudin. Should be hybridized with pink-flowered species to obtain forms with ornamental flowers.

**2991. SORGHUM VULGARE.****Sorghum.**

From Tizi Ouzou, Kabylia, Algeria. Received through Mr. W. T. Swingle, April, 1899.

*Bechna*. A variety of sorghum, the grain of which is consumed in large quantities by the natives.

**2992. CICER ARIETINUM.****Garbanzos.**

From Tizi Ouzou, Kabylia, Algeria. Received through Mr. W. T. Swingle, April, 1899.

*S'ben* (Arabic). *Teevcan* (Kabyle). A gray-green mottled chick pea, said to resist drought and yields very well. It has been suspected to cause paralysis of natives who eat it largely, but experiments made on rabbits, pigeons, and goats gave negative results. Probably some lupine is the real cause of the disease. (See Nos. 2139, 2376, in Inventory No. 5; see also No. 2977 above.)

**2993. TRITICUM VULGARE.****Hard wheat.**

From Tizi Ouzou, Kabylia, Algeria. Received through Mr. W. T. Swingle, April, 1899.

The wheats of Algeria are very good and should be tested thoroughly.

**2994. VICIA FABA.****Horse bean.**

From Tizi Ouzou, Kabylia, Algeria. Received through Mr. W. T. Swingle, April, 1899. (See No. 2978.)

**2994a. COFFEA ARABICA.****Coffee.**

From Botanic Gardens, Trinidad. Received through Messrs. Lathrop and Fairchild (No. 95), 1899.

"A giant variety. Said by Director J. H. Hart, of the Jamaica Botanic Gardens, to be the largest variety known to him." (*D. G. Fairchild.*) (See No. 1925.)

**2995. OPUNTIA FICUS-INDICA.****Prickly pear.**

From Tizi Ouzou, Kabylia, Algeria. Received through Mr. W. T. Swingle, April, 1899.

A spineless cactus growing by the roadside near a Kabyle village.

**2996. FICUS CARICA.****Caprifig.**

From Tizi Ouzou, Kabylia, Algeria. Received through Mr. W. T. Swingle April, 1899.

*Thadukarth tetskarth.* Said to be a very good variety of caprifig. A Kabyle gardener said it was the only kind of caprifig grown in the extensive fig orchards around Tizi Ouzou, and that to find other sorts of caprifigs search must be made in the surrounding mountains.

**2997. FICUS CARICA.****Caprifig.**

From Tizi Ouzou, Algeria. Received through Mr. W. T. Swingle, April, 1899.

*Thadukarth tetskarth.* The same caprifig as No. 2996, but this number comprises cuttings from another tree.

**2998. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, April, 1899.

*Deglet el Beida.* A common dry date (see No. 3201). Sample fruit.

**2999. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, April, 1899.

*M'Kentichi.* A dry date said to be of rather inferior quality, at least in the M'Zab, according to M. Yahia, and presumably different from the *M'Kentichi Degla.* (See No. 3499.) It is considered the best dry date in the oases about Biskra.

**3000. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Donated by M. Yahia Ben Kassem, Orleansville, Algeria. Received through Mr. W. T. Swingle, April, 1899.

*El Horra* (or *El Harra*). A few sample fruits of this variety, which is one of the dry dates grown in the M'Zab country, northern Sahara.

- 3001. PHOENIX DACTYLIFERA. Date.**  
 From Algeria. Donated by M. Yahia Ben Kassem, Orleansville, Algeria. Received through Mr. W. T. Swingle, April, 1899.  
*Tadala.* Sample fruits of this very early variety of soft date, which is the earliest, and one of the best sorts grown in the M'Zab country in northern Sahara. (See more extensive account under No. 3200.)
- 3002. PHOENIX DACTYLIFERA. Date.**  
 From Algeria. Donated by M. Yahia Ben Kassem, Orleansville, Algeria, through Mr. W. T. Swingle, April, 1899.  
*Timdjouert.* (See No. 3274.) Sample fruit.
- 3003. PHOENIX DACTYLIFERA. Date.**  
 From Algeria. Donated by Mr. Yahia Ben Kassem, Orleansville, Algeria, through Mr. W. T. Swingle, April, 1899.  
*Bent kebela.* This number includes a few sample dates of this variety, which is said by Mr. Yahia to be one of the best sorts of soft dates grown in the M'Zab country in northern Sahara. It is considered third in order of merit, ranking after the *Tadala* and *Timdjouert*.
- 3004. BROMUS INERMIS. Smooth brome grass.**  
 From South Dakota. Grown by the United States Experiment Station at Brookings. (See No. 2964.)
- 3005. COULUTEA CRUENTA. Bladder senna.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
*Baguenaudier du Levant.* An ornamental half-hardy leguminous shrub, 5 or 6 feet high, bearing, in June and July, numerous red-purple flowers, with a yellow spot at the base of the standard; pods reddish in color.
- 3006. CAPPARIS INERMIS. Spineless caper.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
*Caprier sans épine.* An improved variety of the caper. The buds are much easier to gather than those of the ordinary spiny sort. This variety is said to come true from seed. For the semiarid regions of the Southwest. See No. 2164, Inventory No. 5, for cultural directions.
- 3007. CEANOTHUS AZUREUS (?). California lilac.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
*Gloire de Versailles.* A low ornamental shrub, possibly a hybrid of *Ceanothus azureus* and *C. americanus*, producing a profusion of large, deep-blue flowers.
- 3008. ELAEAGNUS ANGUSTIFOLIA. Elaeagnus.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
*Chalef argenté* or *Chalef à feuille étroite.* A large shrub or small tree, 15 to 20 feet high, often called wild olive, or oleaster, and sometimes Jerusalem willow. Though a native of the Mediterranean regions, it is said to endure the climate of South Dakota. "The foliage is late in breaking out, so that it escapes late frosts, and the roots go deeply into the earth, thus enabling it to withstand periods when the rainfall is so light that many other sorts fail." (*Davis.*)  
 "The silvery whiteness of the foliage of this tree renders it a most conspicuous object in plantations; and hence, in any landscape where it is wished to attract the eye to a particular point, it may be usefully employed." (*Loudon.*) The red-brown fruits which ripen in autumn lighten the ornamental effect of this plant. The fruit, as well as that of other species, is edible. (See Nos. 1114 and 1158, Inventory No. 2.)

**3009. FRAXINUS DIMORPHA (?)****Ash.**

Received from France. Received through Mr. W. T. Swingle, March, 1899.

*Frêne des montagnes de la Kabylie.* An ash from the mountains of Kabylia, Algeria. "A large and splendid species, very tall and with abundant foliage. It grows in the region of *Abies barboriensis*." (*Vilmorin*.)

**3010. CORYLUS AVELLANA.****Filbert.**

From France. Received through Mr. W. T. Swingle, March, 1899.

*Noisette de bois.* The wild filbert of Europe. Truffles are sometimes cultivated on the roots of this shrub in France.

**3011. PISTACIA LENTISCUS.****Mastic tree.**

From France. Received through Mr. W. T. Swingle, March, 1899.

An evergreen bush or small tree, very abundant on the semiarid hillsides bordering the Mediterranean Sea. A resinous substance called mastic, used for chewing gum by Turkish women, is obtained from an improved form of this tree grown on the island of Chios, just off the coast of Asia Minor. Occasionally used as a stock on which to graft the Pistache, but inferior to the deciduous Turpentine tree (*P. terebinthus*) for this purpose. (See Nos. 3140 and 3654.)

**3012. SKIMMIA JAPONICA.**

From France. Received through Mr. W. T. Swingle, March, 1899.

"A pretty dwarf-growing, holly-like shrub, with dark, shining, evergreen, entire, flat leaves, and clusters of bright red berries which give the plant a very handsome appearance." (*Lindley*.)

**3013. PYRUS AUCUPARIA.****Mountain ash.**

From France. Received through Mr. W. T. Swingle, March, 1899.

*Sorbier des Oiseleurs.* An ornamental tree. (See No. 404, Inventory No. 1.)

**3014. ACACIA ARABICA.****Gum arabic.**

From France. Received through Mr. W. T. Swingle, March, 1899.

This species, a native of Arabia, is usually considered to be the one which yields the gum arabic of commerce. This is the small, spiny tree now cultivated throughout many parts of tropical Africa and India. There are many other trees which yield gum arabic, and it is now considered that this species does not yield the best quality of gum.

**3015. ALBIZZIA MOLLUCANA.****Wattle.**

From France. Received through Mr. W. T. Swingle, March, 1899.

"A beautiful ornamental tree of very rapid growth, useful for shading plantations of tea, coffee, and cacao. The wood is used for fuel and in joinery. It grows on the Molucca islands at an altitude of 4,000 feet; rare." (*Vilmorin*.) Considered by Dr. Treub, director of the Buitenzorg Gardens, Java, to be the most rapidly growing tree in the Tropics, being rivaled only by *Schizolobium excelsum*. At Buitenzorg trees a year and a half after germinating ranged from 9 to 12 feet in height. A tree 3½ years old was 55 feet high and 10 inches in diameter. A tree 11½ years old was 127 feet high and 31 inches in diameter 3 feet from the ground. It is very sensitive to frost.

**3016. CINCHONA CALISAYA.****Peruvian bark.**

From France. Received through Mr. W. T. Swingle, March, 1899.

"A tree 30 to 40 feet high, which occurs in the Andes from Colombia to Chile at altitudes of from 5,000 to 10,000 feet. The bark is richer than that of any other *Cinchona* in quinine. This tree has been successfully introduced into Java and India. It yields the 'yellow bark' and a part of the 'crown bark' of commerce."

- 3017. ACANTHIOPHOENIX RUBRA.** **Palm.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 A fine ornamental palm from Mauritius, having pinnatifid leaves and spiny stems.
- 3018. CHRYSALIDOCARPUS LUTESCENS.** **Palm.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
*Areca lutescens.* An elegant palm native to Mauritius and Bourbon, having very long pinnatifid leaves. The stem is slender, smooth, and swollen at the base. One of the best palms for house and indoor cultivation.
- 3019. CORYLUS AVELLANA.** **Filbert.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 An ornamental purple-leaved filbert.
- 3020. CISTUS MONSPELIENSIS.** **Rock rose.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 A perennial shrub with white flowers, native to the Mediterranean region. This and the following species are the host plants of the edible species of *Terfezia*, a genus of truffle-like subterranean fungi.
- 3021. CISTUS SALVIFOLIUS.** **Rock rose.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 An ornamental white-flowered shrub from the Mediterranean region. Like *Cistus monspeliensis*, it is a host plant for *Terfezia*.
- 3022. ASPARAGUS OFFICINALIS.** **Asparagus.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
*Asperge d'Argenteuil hâtive.* An improved variety of asparagus, originated at Argenteuil, near Paris. Possibly the same as Canover's Colossal. (See No. 2605, Inventory No. 5.)
- 3023. PLANTAGO LANCEOLATA.** **Rib grass.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 Rib grass or ripple grass is a very common garden and field weed in the Eastern United States. It occurs as a bad weed in clover and grass seed and in meadows and grain fields. In England it is much employed for pastures in dry, poor soils.
- 3024. EUCHLAENA LUXURIANS.** **Teosinte.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 A native of Central America. This well-known forage plant is adapted for cultivation on rich bottom lands in the South. The culms stool like winter wheat, as many as 40 or 50 stems often arising from one root. Sow 3 to 5 pounds of seed per acre in drills 5 feet apart, the hills 2 feet apart in the row. Cultivate like corn. The forage may be cut several times during the season.
- 3025. CHAMAEROPS HUMILIS.** **Palm.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 A low fan palm, very common around the Mediterranean. (See Nos. 1931, 1932, 2216, and 2217 in Inventory No. 5.)
- 3026. QUERCUS COCCIFERA.** **Kermes oak.**  
 From France. Received through Mr. W. T. Swingle, March, 1899.  
 This small tree supplies a bark rich in tannin. A red dye is made from the leaf galls. It is often associated with the holly oak *Q. ilex* (No. 3036) in artificial truffle

forests. De Bosredon says of this species: "A variety of evergreen oak which is never more than a bushy tree; it grows on the poorest lime soils and yields excellent and very fragrant truffles, which are, in general, smaller than those produced on the holly oak. The one merit of the Kermes oak is that it yields truffles sooner than the holly oak."

**3027. CELTIS SINENSIS. Nettle tree.**

From France. Received through Mr. W. T. Swingle, March, 1899.

The *Henoki* from China and Japan. It is a tree that bears extreme cold. Wood useful for carpenters' and turners' work. Fruit edible but small." (*Von Mueller.*)

**3028. HOVENIA DULCIS. Raisin tree.**

From France. Received through Mr. W. T. Swingle, March, 1899.

The fruit has the flavor of raisins. These seeds are from a very productive tree. The pulpy fruit stalks are the portion eaten. Fairly hardy. Requires rich, moist soils. May be used in making sweet wine. (See No. 3310.)

**3029. CHAMAEROPS HUMILIS ELEGANS. Palm.**

From France. Received through Mr. W. T. Swingle, March, 1899.

An ornamental variety of the common dwarf palm of the Mediterranean region. (See No. 3025.)

**3030. COCOS INSIGNIS. Palm.**

From France. Received through Mr. W. T. Swingle, March, 1899.

A Brazilian palm cultivated in greenhouses for ornament.

**3031. EUPHORBIA CANARIENSIS. Spurge.**

From France. Received through Mr. W. T. Swingle, March, 1899.

A succulent much-branched spurge from the Canary Islands. Like the cacti, this is grown as a garden curiosity or for ornament. Said to be extremely poisonous. The drug *Euphorbin* is derived from this species. The milky juice coagulates into a sort of rubber.

**3032 to 3034. CAESALPINA CORIARIA. Divi-divi.**

From France. Received through Mr. W. T. Swingle, March, 1899.

A small leguminous tree 20 to 30 feet high, from the West Indies to Brazil. The pods contain a high percentage of tannin and are largely exported to Europe. The tree thrives only on the seashore or in salt marshes. For trial along the Florida coast and in the tropical possessions.

**3035. ILEX PARAGUAYENSIS. Maté.**

From France. Received through Mr. W. T. Swingle, March, 1899.

*Paraguay tea.* The leaves of this shrub or small tree are extensively used in South American countries as a substitute for tea. This is a small tree reaching the height of 15 or 20 feet, which grows all through southern South America. The leaves are prepared by drying and roasting; but instead of being handled separately, as in preparing Chinese tea, large branches are dried by a wood fire and then placed on the hard floor and beaten with sticks until the dry leaves fall off. These leaves are then used in much the same way as ordinary tea. It is used as a beverage by millions of people in South America and is used as medicine to a small extent. The tree is not cultivated in South America, but there are said to be numerous and extensive forests where it is the predominating species.

**3036. QUERCUS ILEX. Holly oak.**

From France. Received through Mr. W. T. Swingle, March, 1899.

The holly oak is one of the species especially planted in France for trufficulture. It grows best on well-drained limestone soils. The trees should be started in nursery beds and transplanted when 3 years old. When transplanted the taproot should be



cut off to force the formation of surface roots, which are desirable for the successful cultivation of the truffles. The holly oak is an evergreen, only adapted for cultivation in California and in the Southern States. (See No. 3026.) (10 pounds.)

**3037. CICHORIUM INTYBUS.****Chicory.**

From France. Received March, 1899.

*Large-rooted Brunswick.* This is the chicory commonly used as a substitute for coffee. This sort is also known as Belgian root. It attains a length of 12 to 14 inches and 2 inches in diameter, just below the crown. It has very deeply cut leaves, divided like those of the dandelion. (For more extended account of this variety, see Bul. 19, Division of Botany.)

**3038. CICHORIUM INTYBUS.****Chicory.**

From France. Received March, 1899.

*Large-rooted or coffee Magdebourg.* The Magdebourg chicory differs from the Brunswick (No. 3037) in having entire leaves which stand upright. It also has larger and heavier roots, which sometimes weigh from 12 to 17 ounces. Both varieties are sometimes used for salads in winter. For this purpose the roots are forced in the dark; they are either planted in soil up to within about one-half inch of the crown, or are inserted through holes into a barrel of earth, the leaves being allowed to expand freely in either case, but being blanched by darkness.

**3039. QUERCUS SUBER.****Cork oak.**

From France. Received through Mr. W. T. Swingle, March, 1899.

"This is an Algerian cork oak which produces cork of excellent quality and of unusual thickness. The cork oak is from 30 to 70 feet in height. It grows especially on sandy soil, is able to thrive where the climate is very dry and where the soil is of the poorest. The trees attain great age. The imports of cork into the United States amounted to over \$1,440,000 in 1898. It is quite possible that the culture of cork oak might be profitable in some parts of California. It should also be tried in the sandy regions of the Southern States. The trees commence to yield in Algeria when they are about 20 years old. When they have attained a diameter of 18 inches they are subjected to an operation called *demuscalage*. The cork is sold when it attains a thickness of from 1 to 1½ inches, which requires from six to fifteen years—about nine years on an average. It is considered the most profitable to remove the bark when about 1 inch thick. The Algerian barks are sold at from 40 to 150 francs per 100 kilos, which is about \$3 to \$10 per 100 pounds. In forests of cork oak a tree is said to yield at the rate of about 2 to 5 cents per year, and the forest should yield about \$2 per year per acre." (*Swingle.*)

**3040. TROPAEOLUM TUBEROSUM.****Ysaño.**

From France. Received through Mr. W. T. Swingle, March, 1899.

A native of the higher mountain ranges of Peru and Bolivia. The tubers are eaten as a vegetable. They are of a yellow color, striped with red. The tubers should be planted in the open ground in April or May, about 20 inches apart in every direction. They are not injured by frost if left in the ground, and should not be dug until late in autumn. They are used extensively for food in Bolivia. The Ysaño tubers are often frozen after being boiled and are then considered delicious. They are sometimes used in France for entrées. For this purpose they are prepared by being cut into extremely thin slices and seasoned with salt, olive oil, vinegar, and mustard. They are also prepared as pickles.

**3041 to 3047. CITRULLUS VULGARIS.****Watermelons.**

From Canada. Grown from Russian seed at the London Insane Asylum, London, Ontario, by Dr. R. M. Bucke, medical superintendent. Received April, 1899.

**3041.** *Yellow flesh.*

**3042.** *First to mature.*

**3043.** *From a melon weighing 33 1-4 pounds.*

**3044.** *Green and white, striped, very sweet.*

**3045.** *Winter melon.*

**3046.** *White flesh.*

**3047.** *Russian.*

**3048. AGARICUS CAMPESTRIS.****Mushroom.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Blanc de Champignon vierge (Virgin spawn)*. "The cultivation of mushrooms is carried on extensively in Paris. The tunnels of the abandoned stone quarries, with which the ground on which the city is built is literally honeycombed, are used for this purpose. The beds used are of composted manure, and are built up into conical ridges 18 inches to 2 feet wide at the base and 18 inches high. There are often from three to ten parallel beds in each tunnel. M. Lecaillon has over 20 miles of these beds, and many other growers have as much space in cultivation. In preparing the beds horse manure, which has been fermented for three weeks, is used. When thoroughly composted the manure has very little odor. It is then very firmly packed into shape in the caves or tunnels by men who tamp it with their hands and knees. When the temperature is right, pieces of spawn the size of one's hand are inserted in the right side of the bed every foot or so. When the spawn has grown through the manure the bed is covered with one-half to three-fourths of an inch of quarry dust. The mushrooms appear in about two months, and the spawn continues to yield for two or three months, depending on the temperature. Cool weather is the best for the growers, because the mushrooms grow slower and more perfectly, and the ventilation is better. In summer, when the air in the tunnels is colder than outside, there is no ventilation except that induced by fires, which are built at the bottom of shafts in order to cause a circulation of air constantly in one direction. Eddies should be avoided. Mushrooms are never allowed to open before being picked—they could not then be sold in the Paris markets.

The spawn soon runs out, and new spawn must repeatedly be obtained. If taken in an early stage the spawn can be propagated, but never after mushrooms have been gathered from it. As a matter of fact, there are considerable variations in mushrooms, and, should a method be found to propagate spawn indefinitely without allowing it to fruit, the industry would be revolutionized. The mushroom growers are continually on the lookout for new spawn, which they usually obtain from the gardeners, who force melons in small hotbeds. The spawn is prepared as rapidly as possible, and a portion of it forced until it produces mushrooms. If these prove to be good, the rest of the spawn is set in the beds and fruited; if not, the whole mess of the spawn is destroyed. Recently Dr. Repin has discovered a method of raising spawn from spores of the best mushrooms, and this is the spawn included under this number. It is claimed not to contain any bacteria or other organism which might cause disease. This virgin spawn is sold in the form of sterilized and compressed slabs of manure, freely permeated by the spawn. These slabs are about 10 inches square and one-half inch thick, and may be planted whole or divided into two 'sets.'" (W. T. Swingle.)

**3049. HELIANTHUS TUBEROSUS.****Jerusalem artichoke.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Topinambour patate*. A tall perennial with annual stems producing underground tubers. Largely cultivated in Europe. The tubers are a violet red, slender at the bottom and swollen in the upper part, where they are about 2 inches in diameter. The tubers form very late in autumn and should not be dug until the stems have nearly ceased growing. The flesh is sweet and very watery. The tubers are planted in March or April, 12 to 14 inches apart in rows 3 feet apart. They require about the same cultivation as corn. This artichoke is commonly grown for food for hogs in America. In Europe they are used for making alcohol, and there are some especially fine varieties which are grown exclusively for the table. These are said to be very fine when baked like sweet potatoes; and they may be cooked in a variety of other ways. This new variety called "Patate" is distinguished from the ordinary Jerusalem artichoke. It is plumper, with angular tubers of a yellow color. It is of equal value for starch and alcohol manufacture, and yields decidedly more than the ordinary sorts. This variety was grown from seed at Verrières, from seed obtained in Corsica. It was first introduced to the trade in 1884.

**3050. SOLANUM TUBEROSUM.****Potato.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Royal ash-leaved kidney*. This and Nos. 3052 and 3054 are the earliest varieties of potatoes used for forcing in the market gardens about Paris. They are usually sprouted before being planted. This is accomplished by placing the tubers in an

upright position, stem end down, in trays. These trays are then set in a room cool enough to prevent spoiling, but warm enough to produce slow growth. At planting time the trays are carried to the field and the tubers planted one in a place, in holes, with the sprouts uppermost. When the plots are prepared in this way a crop is said to yield from ten to twelve days earlier than if planted in the ordinary way. These forcing varieties commonly produce a single sprout. This variety, called the "Royale" in France, is much like the "Marjolin," but its tubers do not grow so close together around the base of the stem, and the foliage is more abundant. These tubers are smooth and of excellent quality.

**3051. ALLIUM ASCALONICUM!****Jersey shallot.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Echallote de Jersey.* "Bulbs short, almost always irregular in shape, but sometimes perfectly rounded and broader than long, when they quite resemble a small onion; skin coppery red, thin, and easily torn. The bulb, when stripped of the dried coats, is entirely violet colored, the tint being somewhat paler than that of the true shallot. The leaves are distinguished by their very peculiar glaucous hue. The bulbs do not keep so well as those of the true shallot, and commence to grow sooner in spring. The Jersey shallot flowers and seeds pretty regularly, the seed exactly resembling onion seed. Indeed, in all the characteristics of its growth the plant is an onion, and has nothing to do with the true shallot." (*Vilmorin.*)

**3052. SOLANUM TUBEROSUM.****Potato.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Victor Extra hative.* (See No. 3050.) This is one of the earliest varieties, being even earlier than the Marjolin. The stems always remain short, which makes it a very good variety to grow under glass, where it is said to form tubers in forty days. The tubers are smooth, flattened-oval in outline. The flesh is yellow.

**3053. SOLANUM TUBEROSUM.****Potato.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Belle de Fontenay.* "One of the best varieties; stems short; the tubers yellow, smooth, oblong; flesh yellow; very early and of good quality." (*Vilmorin.*)

**3054. SOLANUM TUBEROSUM.****Potato.**

From France. Received through Mr. W. T. Swingle, April, 1899.

*Marjolin.* The Marjolin is one of the best known of the early potatoes used for forcing. It is called in England the "Ash-leaf Kidney." It is one of the very earliest, and, if planted in the open ground in April, ripens its crop in June. This variety sprouts with difficulty if planted in the field as usual. It is, therefore, nearly always started in frames as described for No. 3050.

**3055. EUCHLAENA LUXURIANS.****Teosinte.**

From France. Received through Mr. W. T. Swingle, April, 1899. (See No. 2965.)

**3056. BETA VULGARIS.****Beet.**

From Germany. Received April, 1899. Presented by Kraus & Stettin, of New York. Grown near Magdeburg, Germany.

*Kleinranzlebener original.*

**3057. BETA VULGARIS.****Sugar beet.**

From Germany. Presented to the Department of Agriculture by R. Weichsel & Co., Magdeburg, April, 1899.

*Pitzschke Elite.* Grown by F. Pitzschke, Sandersleben, Germany.

**3058. CYPHOMANDRA BETACEA.****Tomato tree.**

From Cape Colony, South Africa. Received through Messrs. Lathrop and Fairchild, April, 1899. (See No. 1977.)

A shrub or small tree, 9 to 12 feet high, native of Central and South America from Mexico to Peru, now cultivated throughout the more elevated portions of South America and in the West Indies. The tomato tree is cultivated for its fruit, which has a very agreeable, sweetish, acid flavor. The fruits, peeled and the seeds removed, may be used in the same manner as the tomato. Dr. Morris reports that it is impossible to cultivate this tree in Jamaica below 2,000 feet altitude. Its cultivation is easy in subtropical regions. The tree has been introduced into southern France and northern Africa.

**3059. CASSIA OCCIDENTALIS.****Mexican coffee.**

From Florida. Received through George H. Wright, Orlando, Fla., April, 1889.

This is also called the Espinoza bean. It is a perennial legume and one of the commonest weeds of the Southern States from Arkansas to Texas and Florida. It is cultivated in Mexico and also in Florida, the beans being used in the manufacture of a coffee substitute. Cases of poisoning have been reported from the use of the unroasted seeds, and the roots are said to be poisonous to hogs and other animals which eat them.

**3060. FICUS CARICA.****Caprifig.**

From Italy. Received through Mr. W. T. Swingle, April, 1899.

*Torre del Greco.* This, as well as Nos. 3061, 3062, 3064, and 3066, are caprifigs from southern Italy. They have been imported for trial and with the hope of finding a superior sort better adapted to harbor the fig insect than any now growing in California. This number, as the name indicates, is from Torre del Greco, a city on the southwestern slope of Vesuvius.

**3061. FICUS CARICA.****Caprifig.**

From Italy. Received through Mr. W. T. Swingle, April, 1899.

*Calabria.* From the province of Calabria, in southern Italy. (See No. 3060.)

**3062. FICUS CARICA.****Caprifig.**

From Italy. Received through Mr. W. T. Swingle, April, 1899.

*Portici.* From the western slope of Mount Vesuvius. (See No. 3060.)

**3063. VITIS VINIFERA.****Grape.**

From Hope Botanic Gardens, Kingston, Jamaica. Received through Messrs. Lathrop and Fairchild (No. 59), August 4, 1899.

*Muscat.* A variety found on the race course or Liguana plain, at Kingston. The grapes ripen about the end of May. The vines are, however, subject to pruning.

"Said by Professor Fawcett to be the most productive of all the European grapes grown in Jamaica. Specially suited to experiments in California." (*D. G. Fairchild.*)

**3064. FICUS CARICA.****Caprifig.**

From Italy. Received through Mr. W. T. Swingle, April, 1899.

*Vesuvio.* From the slopes of Mount Vesuvius. (See No. 3060.)

**3065. FICUS CARICA.****Caprifig.**

From Italy. Received through Mr. W. T. Swingle, April, 1899.

*Somma.* Presumably from the slopes of Monte Somma, the older portion of Mount Vesuvius. (See No. 3060.)

**3066. FICUS CARICA.****Caprifig.**

From Italy. Received through Mr. W. T. Swingle, April, 1899. (See No. 3060.)

**3067. ZEA MAYS. Corn.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 117), May, 1899.

*Morado.* "This variety of indian corn furnishes a coloring matter which is used by the Peruvians to color their drink called *Chicha Morado*. The shelled corn is mixed with ordinary corn, a bit of cinnamon bark, a piece of pineapple (proportions of each according to taste). It is then boiled, thoroughly strained, and cooled, after which it is sweetened to taste. It is drunk either fresh or after standing a day or two." (*D. G. Fairchild.*)

**3068. CUCURBITA MAXIMA. Squash.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 118), May, 1899.

*Avinca.* "Seeds from a good specimen. This is the dearest and most highly esteemed squash in Lima. The pulp is dried, then powdered and mixed with alum, and put in hot water and used as a yellow dye. The dish '*Locro*' is made from it about Lima." (*D. G. Fairchild.*)

**3069. CAPSICUM ANNUM. Pepper.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 119), May, 1899.

*Pimiento de Castilla.* Seeds of a large Spanish pepper, 3 inches long, almost cylindrical, 1½ inches in diameter.

**3070. PHYSALIS PERUVIANA. Ground cherry.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 120), May, 1899.

*Semilla de Capuli.* "A shrub grown about Lima for its edible, very fragrant fruits, which are eaten raw. They are made up into bouquets of a dozen or so, attached to the end of a stick, and decorated with a bow of white, fringed paper and a sprig of cedar. The envelopes of the fruit are turned back to expose the light greenish-yellow berries. They have a refreshing, tomato-like taste." (*D. G. Fairchild.*)

**3071. SOLANUM TUBEROSUM. Potato**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 122), May, 1899.

"Highly prized by the Peruvians. This is a sticky, solid, bright yellow-fleshed sort with prominent, irregular knobs. Used in salads they are excellent. They should be tested in the South, and an attempt made to find a special market for them. May prove of value for breeding purposes." (*D. G. Fairchild.*)

**3072. LUCUMA MAMMOSA. Lucuma.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 123), May, 1899.

"There are two edible species in Peru, according to Martinet. The large sapotaceous one-seeded fruit is composed of a thin, brown rind and a mass of very mealy, bright ochre-yellow pulp of a characteristic sweet taste. Lucuma ices are sold in the cafés of Lima and are very good. Plant in rich soil in southern California and Florida. Thrives about Lima. A large tree." (*D. G. Fairchild.*)

**3073. CHENOPODIUM QUINOA. Quinoa.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 124), May, 1899.

*Blanco.* "This variety is used especially for cooking purposes. This seed came from Gauco, in the cordillera region, at an altitude of several thousand feet. They should be planted like alfalfa, 15 pounds to the acre, and require high altitude here. In America should be tested in the South and the mountain regions of Colorado and

Arizona. It forms an important food all over Chile and Peru. The plant is an annual and should mature in five or six months at most. Plants in the Botanic Garden of New York failed to seed. I believe for lack of altitude.

"Several dishes are prepared and are relished by Europeans as well as Peruvians. A drink called "chicha" is made from the ground seeds. This variety is not supposed to possess any medicinal properties." (*D. G. Fairchild.*) (See No. 2931.)

**3074. CHENOPODIUM QUINOA.**

**Quinoa.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 125), May, 1899.

*Quinoa amarga.* "The bitter quinoa is used as a medicine. Taken in doses of 100 grams two or three times a day, in capsules, as a remedy against catarrh. May prove useful for crossing." (*D. G. Fairchild.*)

**3075. MEDICAGO SATIVA.**

**Alfalfa.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 126), May, 1899.

*Omas.* "This variety is said to be one of the best in Peru, and superior to any of the Chilean sorts tested in comparison with it in Peru. It is longer lived than Chilean. If cut seven times a year it will live five years, while Chilean dies within three. Grown by irrigation here; matures for a new cutting in sixty days after mowing. Try in California and Arizona. The California alfalfa came from Chilean seed." (*D. G. Fairchild.*)

**3076. CAPSICUM ANNUM.**

**Pepper.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 121), May, 1899.

*Mirasol* (Sunflower) Chile pepper.

**3077. JUGLANS NIGRA?**

**Walnut.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 127), May, 1899. (25 seeds.)

*Nuez de nogal.* "This is said to be *Juglans nigra* by Raimondi, but from the shape of the nut I judge it to be quite a different species. It is a very large tree, and is found near Lima. (At Surco, for example.) The leaves are made into a tea and used as a tonic. The outer rind boiled in water is made into a hair lotion to prevent the hair from falling out. For dyeing the rind is mixed with alum. The strong extract is used with alum." (*D. G. Fairchild.*)

**3078. PROSOPIS HORRIDA.**

**Algaroba.**

From Païta, Peru. Received through Messrs. Lathrop and Fairchild (No. 128), May, 1899.

"A fodder tree of great value in Peru, growing in regions where it rains only once in seven years. Tender; should be planted in Arizona and in southern California." (*D. G. Fairchild.*)

"The tree producing these beans is of the locust family, grows to a height of 50 to 60 feet, and from 1 to 4 feet in diameter at base. It is *the* forest tree of this department of Piura and grows from the coast to an altitude of 2,000 feet. In good soil, not lacking root humidity, it produces two crops a year, the beans falling to the ground when ripe or yellow. As a food for mules and asses it is superior to corn. Cargo mules working the year round will eat 25 pounds daily and keep in good condition; asses half that quantity. It is also fed to horses, but with grass, as it is a very strong food.

"The people on this hacienda are paid 5 cents (2½ cents, gold) for gathering 25 pounds. We store it in adobe houses, which, when filled, are hermetically closed, so that not a particle of air can get in, for if this occurs it soon 'picars' (is eaten by worms). After the harvest, and when there is a scarcity of forage, the algaroba is sold at from 20 to 50 cents, gold, per arroba, depending on supply and demand.

"To plant the seed it is simply a matter of covering the bean with earth and seeing that it does not lack humidity. The tree has a tap root. The natives say the root is as long as the top. This is the case with small trees. In land which lacks

humidity the tap root goes down, seeking moisture. Due to this, trees flourish on high lands from one year of rains to another, this interval being in this department seven years." (*Edouardo Fowkes.*)

### 3079. MALPIGHIA SETOSA.

### Cherry.

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 129), June, 1899.

*Cerezo.* "A small fruit, the size of Murillo cherry, with refreshing acid flavor, highly appreciated as a table fruit. For sale everywhere in Lima markets. A fruit worthy of cultivation in Florida and California. Frost shy; irrigated." (*D. G. Fairchild.*)

### 3080. SPONDIAS.

From Lima, Peru. Received from E. B. Cisneros through Messrs. Lathrop and Fairchild (No. 130), March, 1899.

*Cruelas.* "A species of fruit worthy serious attention in subtropical regions. Fruit the size of green gage, with pleasant acid, aromatic flavor and very juicy. Would be immediately appreciated and could probably be shipped. (Grown about Lima, where regular southern California climate is found." (*D. G. Fairchild.*)

### 3081 to 3088. PHASEOLUS VULGARIS.

### Bean.

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 131), May, 1899.

This is a collection of beans commonly grown in Peru. Bought in a market in Lima. They are as follows:

- 3081. *Blancos.*
- 3082. *Panamitos.*
- 3083. *Carachos.*
- 3084. *Negros.*
- 3085. *Cuballeros.*
- 3086. *Barros.*
- 3087. *Bayos.*
- 3088. *Cumarios.*

### 3089. CICER ARIETINUM.

### Garbanzos.

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 139), March, 1899.

*Garbanzos.* "Used largely as a vegetable; prepared similarly to peas. Will grow anywhere in the United States, but will probably prove different from variety known there." (*D. G. Fairchild.*)

### 3090 to 3095. CAPSICUM ANNUUM.

### Pepper.

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (Nos. 140-145), May, 1899.

A collection of red peppers from the markets in Lima. They are as follows:

- 3090. *Panca. Semilla de Aji.*
- 3091. *Limita.* A small lemon-colored variety, very ornamental and much sought after.
- 3092. *Aji comun.*
- 3093. *Aji cereza.*
- 3094. *Aji Rocoto.* A large, beautiful, rich red variety. A great favorite in southern Peru.
- 3095. *Aji morado, Tucute.*

### 3096. CYCLANTHERA PEDATA.

### Caigue.

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 146), May, 1899.

"The Caigue is cultivated like other squashes and melons; can even be grown in a pot. The fruit resembles in shape the pods of a milkweed (*Asclepias*). These fruits are cooked only slightly by putting them in the dish a few minutes before serving. Indigenous to Mexico." (*D. G. Fairchild.*)

**3097. CUCURBITA MAXIMA.****Squash.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 147), May, 1899.

*Zapillo Fuge.* "A melon, with snow-white flesh and squash flavor; 2 feet by 1 foot; looks just like a watermelon. Possibly of use to plant breeders." (*D. G. Fairchild.*)

**3098. ULLUCUS TUBEROSUS.****Ulluco.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild (No. 148), May, 1899.

"Sample of tubers of the so-called Ullucos of the Peruvians. These tubers should be planted just like potatoes. They are from the Sierra, 1,000 meters (3,000 feet) altitude. They are considered very nutritious by the common people and are eaten by them mixed with salt meat. Prepare just like potatoes." (*D. G. Fairchild.*)

The Ulluco is related to the Malabar nightshade but has tubers as large as a hazelnut which are borne under ground like those of the potato.

**3099. PASSIFLORA QUADRANGULARIS.****Granadillo.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild, March 16, 1899.

*Granadillo.* "The fruit is an oblong gourd-like fruit, with an abundance of refreshing sweet pulp surrounding the seeds. Sold everywhere and seen on every hotel and club table. A favorite fruit. Propagated generally by cuttings." (*D. G. Fairchild.*)

**3100. ESCOBEDIA SCABRIFOLIA.****Palillo.**

From Lima, Peru. Received through Messrs. Lathrop and Fairchild, April, 1899.

"The roots are called Palillo. They are used in place of saffron as a coloring matter for soups and other dishes. A small quantity of the root is powdered and put in the soups." (*D. G. Fairchild.*)

It belongs to the family Scrophulariaceae and "is an upright herb, covered with rough hairs, with entire leaves, and large, white flowers in few flowered terminal racemes." (*Wettstein.*)

**3101 to 3111. FRAGARIA sp.****Strawberries.**

From France. Received through Mr. W. T. Swingle, April, 1899.

"The culture of ever-bearing strawberries has been given some impetus of late years in France by the origination of several very new varieties by Abbé Thivolet, a country curate in Saone et Loire, east central France. For many years he has been occupied in sowing the seeds of various strawberries, and finally, in 1896, obtained the variety known as St. Joseph, and in 1898 the St. Antoine de Padone. These two varieties were obtained, and at the same time the other French ever-bearing strawberries were secured for comparison. Upon arrival the plants were turned over to the Division of Pomology to be distributed to their correspondents for trial. The collection comprised the following varieties:

- 3101.** *Red Alpine Strawberry.* (*Fraisier des quatre saisons.*) This, as well as the four following numbers, is a cultivated form of *Fragaria alpina*. These species are like the English wood strawberry, but bear very early and continue to produce throughout the entire summer. This variety reproduces rapidly from seed, which should be sown in spring under glass. The young plants should be transplanted in June and again in August, this time 8 inches apart, being put out finally in place late in September or early in October, being careful to transplant after a rain. This time they should be spaced about 10 inches each way. The following year the plants should produce an abundant crop. When once a plantation is obtained, the plants may be propagated by runners, the same as other strawberries. This variety has red fruits and is the most common form of the Alpine strawberry in cultivation.



- 3102.** *White Alpine Strawberry.* This differs from the ordinary kind in the color of the fruit and in being not quite so acid. This plant is an equally continuous bearer.
- 3103.** *Improved Red Alpine Strawberry.* Also called *Améliorée Duru.* 'This is distinguished from the other varieties by the peculiar shape of the fruit, which is very long and slender.' (*Vilmorin.*)
- 3104.** *Red Bush Alpine Strawberry.* (*Fraisier des Alpes sans filets.*) 'This very distinct variety has the advantage of growing without producing any runners, which often render it troublesome to keep strawberry beds in order, and on this account it is peculiarly adapted for planting as edgings.' (*Vilmorin.*)
- 3105.** *White Bush Alpine Strawberry.* Variety exactly like the preceding one, except in color and fruit.
- 3106.** *St. Joseph (Saint-Joseph).* This is the first variety originated by the Abbé Thivolet. This is said to be the first truly ever-bearing, large-fruited strawberry ever obtained, and it had a great success in France, where it received the highest premium from the National Society of Horticulture. This variety produces fruits from May until the end of October in the latitude of Paris. The fruits are frequently an inch in diameter, and sometimes an inch and one-half, of a deep-red color with an equally red pulp, very firm in texture, juicy, and of the first quality. More fruit will be produced if the runners are carefully cut away during the summer. These runners may be planted at once and often fruit the first year. (*Vilmorin.*)
- 3107.** *St. Anthony (St. Antoine de Padoue).* This variety, which was sent out in 1898 by the Abbé Thivolet, was obtained by crossing the St. Joseph with the large-fruited English Royal Sovereign. The fruits of this sort are larger than those of the St. Joseph, are firm, good keepers, and have an excellent flavor. The fruit clusters are erect and do not require support, as do those of St. Joseph. This is the newest and most remarkable of the large-fruited, ever-bearing strawberries.
- 3108.** (*Louis Gauthier.*) This is not truly an ever-bearing strawberry, but the runners produce fruits after those in the parent plant have ripened, and by means of a succession of runners fruits may be obtained until late in autumn.
- 3109.** *Belle de Meaux Alpine Strawberry.* This is a seedling of the ordinary Alpine strawberry, distinguished by the red coloration of its fruits, which is indeed so deep that they appear almost black. When ripe the stem and runners are a reddish brown and the flowers are often tinted with red. Like the other Alpine strawberries, this variety reproduces from seed.
- 3110.** *The Janus Alpine Strawberry (Janus améliorée).* A very fine variety, characterized by the fruit being conical, large, and well shaped, and becoming almost blackish when ripe. It is a very productive and continuous bearer, and highly worthy of recommendation in every respect. The variety comes very true from seed. (*Vilmorin.*)
- 3111.** *Leo XIII.* A new ever-bearing French strawberry, with large fruit. The oldest of the large ever-bearing strawberry.' (*Swingle.*)

**3112. CERATONIA SILIQUA.****Carob tree.**

From France. Received through Mr. W. T. Swingle, April, 1899.

"The carob tree or St. John's bread is a handsome leguminous tree with evergreen, glossy, dark-green pinnate leaves. It grows well in the semiarid hills all around the Mediterranean. It prefers limestone soils. It is sensitive to the cold and does not succeed north of the regions where oranges grow. It grows slowly, makes a round top, and attains a great size. It bears in great abundance large pods, chocolate colored when ripe, which contains an abundance of saccharine matter between the hard

and indigestible seeds. Italian analyses show the pods to contain over 40 per cent of sugar and some 8 per cent of protein. Over 75 per cent of the total weight is digestible.

Carobs may be grown from seed, but improved varieties are best propagated by grafting or budding. This is best done in spring, but dormant buds may be made in autumn. The trees are difficult to transplant, and it is usually best to raise seedlings and graft them where the tree is to stand. The beans should be soaked for four days before sowing, and are best planted from 20 to 45 feet apart. If not sown in position, they had best be potted at the end of the first year, and ultimately the pots can be set where desired without danger of loss. If planted on a hillside, it is usually necessary to build a rampart of stones in the shape of a crescent in the lower side of the hill, to prevent them from being washed away.

In Italy it is claimed best to allow the plants to attain a strong growth before attempting to graft them, this being done usually in the third year from seed. The carob bears the staminate and pistillate flowers on different trees, and it is necessary in order to insure a crop of pods to have a considerable proportion of staminate trees in the plantation. Another method of securing fertilization of the flowers is to graft branches of the male tree in the ordinary carob. The trees begin to produce three years after being grafted, and in six years should produce from about 100 pounds of pods to the tree. When in full bearing each tree produces from 400 to 600 pounds. The unusually large trees may reach a height of 60 feet, having a crown 75 feet in diameter, and may produce as high as 3,000 pounds of pods. The great carob-growing regions of the Old World are along the Adriatic coast of southern Italy, the island of Sicily, the southern half of Sardinia, and the island of Cypress. They are, however, produced all along the Mediterranean Sea. The single province of Syracuse exports no less than 25,000 tons annually, worth more than \$250,000, while the total production for the island of Sicily averages about 90,000 tons a year. The carob is a concentrated food for horses, milch cows, and for fattening stock. To a certain extent it replaces oats for horse feed. It must always be fed with some more bulky fodder. It has been suggested that it is very useful in some arid regions to feed along with the thornless cactus. Sirups and various sweetmeats are sometimes prepared from carob pods, and the pods are sometimes offered for sale in America, to be eaten from the hand.

Dr. Franceschi, Santa Barbara, Cal., writes that the carob tree has been introduced into southern California many years ago. He says specimens are to be seen in different places growing much more rapidly than in their native habitat, and some of them bearing very profusely. He adds that it is the first tree to get established on the lava about Vesuvius and Etna, after the American cactus *Opuntia ficus indica* has first broken the way. It should be remembered that this tree belongs to the Leguminosae, and, like the clovers, vetches, and other plants of this family, is able to draw its nitrogen largely from the air through the bacteria which grow in little tubercles on the roots. It should certainly be tested in all parts of the Southwest where the mesquite is of importance as food for cattle, since the carob belongs to the same family and produces pods containing much more digestible material.<sup>27</sup> (Swingle.)

### 3113 to 3116. CYNARA SCOLYMUS.

### Artichoke.

From France. Received through Mr. W. T. Swingle, April, 1899.

These four numbers, as well as Nos. 3118 and 3119, are some of the best varieties of artichoke grown in France. The varieties grown in America have almost, if not quite all, originated from seed. By this importation it is hoped to obtain the very best sorts now grown in Europe. A special circular giving methods of culture and other information about artichoke has been issued by this office and published as No. 22 of the Division of Botany.

- 3113.** *Large green Paris artichoke.* (*Gros vert de Laon.*) This variety is one of the most extensively cultivated in the neighborhood of Paris. It yields regularly and abundantly and has larger heads than any other variety. It has the great advantage of reproducing itself from seed. The scaly leaves composing the head are reflexed, forming an open burr looking very different from the smooth "green lobe" commonly grown in England and America.
- 3114.** *Green Provence.* This variety, which is extensively grown in the south of France, is particularly esteemed for eating raw with pepper sauce. If grown from seed this variety always yields a large number of spiny plants. (*Vilmorin.*)

- 3115.** *Flat-headed Brittany.* (*Camus de Bretagne.*) A very tall variety, often 4 feet high, with luxuriant leaves and large, broad, globular heads, flattened on top. This variety is very extensively cultivated in Anjou and Brittany, from which provinces large quantities are sent in May to the central market in Paris.
- 3116.** *Perpetual (Remontante).* See also Nos. 3118 and 3119.
- 3117.** **COCHELEARIA ARMORACIA.** **Horseradish.**  
From France. Received through Mr. W. T. Swingle, April, 1899.  
*Bohemian horseradish.* Distributed.
- 3118, 3119.** **CYNARA SCOLYMUS.** **Artichoke.**  
See Note under No. 3113.
- 3118.** *Violet quarantain de Provence.* Probably the same as the violet quarantain or canargue, which is a medium-sized annual variety, bearing rather small heads with round, dark scales tinted with violet.
- 3119.** *Blanc quarantain de Provence.*
- 3120.** **PHOENIX MARIPOSAE.** **Palm.**  
From France. Received through Mr. W. T. Swingle, April, 1899.  
"This palm, which has been called *Phoenix melanospema* by Naudin, is probably a hybrid of the ordinary date palm and the Canary palm (*P. canariensis*). This palm originated from seed sown in 1875 by Madame B. Hall, then owner of the Villa Mariposa. There is a fine specimen in the Villa Victor de Cessole at Nice, but whether this is the same palm as the original one grown by Madame Hall is not known. Among the thousands of date palms growing along the northern shore of the Mediterranean, this is the only one which produces edible fruits of good quality. Unlike the ordinary date palm, which flowers in spring and ripens its fruit in autumn, this date flowers in autumn. The unripe fruits hang on the trees through the winter, ripening early the next summer. The fruits are small, about an inch to an inch and one-fourth long, and have a rather thin pulp, which is said to be delicious. The remarkable fact about this date is that the sugar contained in the fruits is not cane sugar, as in the ordinary date, but grape sugar. It being impossible to obtain suckers from this tree, young plants, grown from seed from the best one of the group at the Villa, were obtained and were included in the shipment. It is, of course, not certain as to what the quality of the fruits of these seedlings will be. It is hoped, however, that some of them may, like the parent tree, ripen fruit in humid regions near the sea. This palm should produce fruit abundantly along the coast of California as far north as San Francisco, where the ordinary date does not mature its fruits, because of the insufficient heat of the summer. The stem of the best palm at the Villa de Cessote is much more slender than the stem of the Canary Island palm. The leaf-stalks and fruit stems, however, are usually of a yellow coloration, unlike the ordinary forms of the true date palm, and much like the Canary Island palm." (*Swingle.*)
- 3121.** **LESPEDEZA SERICEA.** **Hagi.**  
From Japan. Received through Prof. S. A. Knapp from Japan, May, 1899.  
A perennial Japanese legume, valuable for forage.
- 3122.** **FATSIA JAPONICA.** **Fatsia.**  
From France. Received through Mr. W. T. Swingle, May, 1899.  
An ornamental Araliaceous shrub, with large evergreen leaves; said to stand a temperature of 7° F. Said to be more handsome than *Fatsia papyrifera*, the rice-paper tree, to which it is closely related. The seeds ripen in April in France, and must be planted at once, as they speedily lose their vitality.
- 3123.** **FATSIA JAPONICA.** **Fatsia.**  
From France. Received through Mr. W. T. Swingle, May, 1899.  
*Moseri.* A sort having a more stocky habit of growth and much larger leaves than the parent species. (See No. 3122.)

**3124. EUCALYPTUS PLATYPUS. Eucalyptus.**

From France. Received through Mr. W. T. Swingle, May, 1899.

"A very curious small shrub, which merits planting in clumps in the parks of southern France. The rose-colored or carmine-red stamens which appear after the operculum of the flower bud falls are very decorative. Its small size permits its being grown in a box. It is injured by humidity." (*Vilmorin.*)

**3125. ABIES NOBILIS ROBUSTA. Fir.**

From France. Received through Mr. W. T. Swingle, May, 1899.

An improved form of this beautiful Californian fir, said to be much more vigorous than the parent species and also more easily grown.

**3126. CYCAS NEO-CALEDONICA. Cycad.**

From France. Received through Mr. W. T. Swingle, May, 1899.

A very ornamental palm-like plant, of a different species from the cycad ordinarily grown.

**3127. BETA VULGARIS. Sugar beet.**

From Russian Poland. Presented to the Division of Chemistry by S. Rykowski, of Krzynowloga-Wielka, near Chorzele.

**3128 to 3131. GOSSYPITIUM HERBACEUM. Cotton.**

Donated by the Seed Division, United States Department of Agriculture.

A small quantity of each of the following varieties of American cottons were distributed by this office during 1899:

**3128.** *Texas Storm-proof.*

**3129.** *Hawkin's Prolific.*

**3130.** *Drake's Cluster.*

**3131.** *Cook's Improved long-staple.*

**3132. CUCURBITA PEPO. Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Geneva.* "An extremely distinct variety. Stems not running, very thick and short, producing numerous leaves of a dark-green color, very large and very deeply cut into five or six lobes, which are also more or less notched. The luxuriant foliage forms a regular bush. Fruit very much elongated, being 20 inches or more in length, with a diameter of 3 to 4 inches, furrowed by five ribs, which are most prominent on the part next the stalk, where the fruit is also narrowest. Skin very smooth, dark green, marbled with yellow or with paler green. All through Italy, where this vegetable is very commonly grown, the fruit is eaten when it is hardly the size of a small cucumber, sometimes even before the flower has opened, when the ovary, which is scarcely as long or as thick as the finger, is gathered for use. The plants which are thus deprived of their undeveloped fruits continue to flower for several months most profusely, each producing a great number of young gourds, which, gathered in that state, are exceedingly tender and delicately flavored." (*Vilmorin.*)

The following numbers are different varieties of vegetable marrow: 3133, 3136, 3137, 3141, 3145, 3148, 3152, 3155, 3166, 3168, 3171, and 3172. The method for cultivation is the same as for the summer squash, which this new vegetable somewhat resembles.

**3133. CUCURBITA PEPO. Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Tripoli (new).* A vegetable marrow with straight, rather short, thick fruits. (See No. 3132.)

**3134. CUCURBITA PEPO. Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Tripoli, White.* (See No. 3132.)

**3135. PISTACIA VERA.****Pistache.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

"The pistache is a small tree, native of eastern Mediterranean countries, and is said to have been introduced into Italy by Vitellinus, the governor of Syria, during the reign of the Emperor Tiberius. It is now cultivated in all of the warmer regions about the Mediterranean. The deciduous leaves are usually composed of five leaflets. It bears the staminate and pistillate flowers on different trees. The fruits, which are first green, then reddish, and finally almost black, are about the size of olives and contain a nut of delicious flavor, much like the almond. The shell of the pistache nut is easily opened by the fingers, exposing the greenish meat, which is usually covered with a yellow or reddish pellicle. These nuts are employed by confectioners and are used in making ice cream. They are delicious to eat, roasted. The tree will grow in almost any warm country, but does not produce an abundance of good fruit except on dry hills having a deep soil and an exposure to the south. It is much injured by standing water, and is said to be difficult to irrigate. It resists drought very well, however, and will doubtless succeed in many parts of California without irrigation. In order for the fruit to be of the best quality the plant needs plenty of sunlight. Seeds may be sown in February. In order to preserve the seeds for sowing, the ripe fruits are stratified in pots during the autumn and winter and finally planted in February. The young plants have a strongly developed tap root, which necessitates their being transplanted if possible during the first year and at least by the end of the second season. The best varieties can be propagated only by grafting, or better by making dormant buds in late summer. In southern France and in Greece the pistache is commonly grafted on the terebinth (*Pistacia terebinthus*). (See No. 3149.) One tree in five, or at least one of eight, should be male, or else branches of the male tree should be grafted on the bearing pistache. The trees attain great age, especially when grafted on the terebinth. They should be planted about 20 feet apart. The tree grows slowly and begins to bear within two or three years from grafting, and within eight or ten years from seed. The fruit is picked when fully ripe and laid away to dry on trays in the shade. They are kept in a dry place. In order to introduce this valuable nut tree into America it will first be necessary to plant seed both of the pistache and of the terebinth to serve as stocks on which to graft the improved varieties. This shipment consists of seeds of Sicilian pistaches." (*Swingle*.)

**3136. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella, snow-white of Belmonte.* A dwarf vegetable marrow, with long, curved, white fruits; said to be very fine. (See No. 3132.)

**3137. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Long green bush or Neapolitan Cocozzella.* (See No. 3132.)

**3138. ANGELICA SYLVESTRIS.****Angelica.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

Received as *Angelica anomala*. Said to have much more fleshy leaf and stalk than the ordinary *Angelica (Archangelica officinalis)*. Of this latter plant *Vilmorin* says: "The stems and leaf stalks are eaten preserved with sugar. The leaves are also used as a vegetable in some parts of Europe. The root, which is splendidly shaped, is employed in medicine. It is sometimes called 'The Root of the Holy Ghost.' The seeds enter into the composition of various liqueurs."

**3139. RHUS CORIARIA.****Tanner's sumac.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

"The leaves of this shrub, dried and ground, form the commercial sumac which is used for tanning. It requires well-drained calcareous soils. The percentage of tannin in the leaves is higher in dry than in humid climates. This bushy small tree sometimes attains a height of 10 feet. It is cultivated in Italy and Spain, but more especially in Sicily. It prefers a hot climate, and a dry soil frequently yields the best product. The plant is usually propagated by planting the stolons in ditches in

late autumn. It is probable that in the United States the cost of gathering the sumac would prevent successful introduction of this culture. Plantations of sumac yield from \$30 to \$40 worth of leaves per acre, and in addition about three-fourths of a ton of fagots." (*Swingle*.)

**3140. PISTACIA LENTISCUS.****Mastic.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

An evergreen shrub or small tree which grows abundantly about the Mediterranean. An improved form yields a resinous substance called mastic on the island of Chios, and is sometimes used as a stock on which to graft the pistache. In Algeria this plant, there called *lentisque*, is used as a substitute for tanner's sumac (No. 3139), to which it is somewhat related. The leaves contain 11 per cent of tannin, or only half as much as those of sumac. (See Nos. 3111 and 3135.)

**3141. CUCURBITA MOSCHATA.****Summer squash.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Charles Naudin.* "A beautiful sort, slightly climbing, with round, white-striped, white-fleshed fruits and large silvery seeds." (*Dammann*.)

**3142. CICHORIUM INTYBUS.****Chicory.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Asparagus chicory.* "An excellent Italian variety, quite different from any other. Leaves and stalks give a most wholesome and refreshing salad when cooked and served cold." (*Dammann*.)

**3143. CUCUMIS MELO.****Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cecola.* "Oval, dark green, strongly netted, flesh white, sweet, and of fine flavor. The fruits grow up to 8 to 10 pounds weight." (*Dammann*.)

**3144. SOLANUM MELONGENA.****Eggplant.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Black Prince.* "Pear-shaped, very early." (*Dammann*.)

**3145. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Neapolitan Portucalean green.* (See No. 3132.)

**3146. FENICULUM VULGARE.****Fennel.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Morasin.* A new variety of sweet fennel, said to be the largest, finest, and sweetest; very thick. Plant with fleshy overlapping leafstalks forming a kind of head, which is bleached by being kept covered with earth. These plants and stalks have a very pleasant, sweetish, aromatic taste, and are eaten raw for dessert in Italy. The seed is usually sown in spring for a summer crop, and late in summer for the autumn crop. It should be sown in rows 16 to 20 inches apart. Seedlings should be thinned at the leafing of the plants to 5 or 6 inches apart in the row. As the plants grow they must be earthed up to keep the stalks blanched.

**3147. LYCOPERSICUM ESCULENTUM.****Tomato.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*King Humbert red.* This is a well-known variety of tomato grown about Naples, Italy. The fruits are bright red, about 1½ inches thick by 1 inch wide, and are especially valued because of their high flavor. They are used in making various sauces and dressings for macaroni and for meats.

**3148. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Molfetta.* "Dwarf with long, yellowish-white fruits; very fine." (*Dammann.*) (See No. 3132.)

**3149. PISTACIA TEREBINTHUS.****Turpentine pistache.**

"This is a small tree with deciduous leaves, native in the Mediterranean regions. It is usually employed as a stock on which to graft the pistache, to which it is closely related, being considered by some to be the parent. By making incisions in the bark the turpentine is obtained, sometimes called Chian or Cyprian turpentine, used in medicine. "The principal product of this tree is the galls which are produced on the branches, flower stem, and leaves. These galls, known as *Gallac terebinthi*, or *Carobe di giuda*, are roundish, or pod-like, in shape, and in the Orient are an important article of commerce, since they are used for coloring silk and for coloring wine." (*Engler.*) The trees should be planted in the Southwest as stock on which to graft the pistache, when important varieties of the latter are obtained." (*Swingle.*) (See Nos. 2185 and 3135.)

**3150. LYCOPERSICUM ESCULENTUM.****Tomato.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*King Humbert golden yellow.* "The finest of all yellow sorts." (*Dammann.*)

**3151. LYCOPERSICUM ESCULENTUM.****Tomato.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*King Humbert white.* "Very prolific and of fine flavor." (*Dammann.*)

**3152. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Scarlet Chinese sugar.* "Fruits round, with scarlet rind; flesh very solid and sweet." (*Dammann.*) (See No. 3132.)

**3153. LYCOPERSICUM ESCULENTUM.****Tomato.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Picarazzi.* The earliest of all Italian tomatoes.

**3154. FENICULUM VULGARE.****Fennel.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Sweet Bolognese.* (See No. 3146.)

**3155. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Tripoli.* (See No. 3132.)

**3156. CYNARA SCOLYMUS.****Artichoke.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Artichoke of Nodica.*

**3157. CUCUMIS MELO.****Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Giant of Porto.* "Very large, attaining a weight of about 15 pounds; slightly netted, juicy, and of fine flavor." (*Dammann.*)

**3158. LYCOPERSICUM ESCULENTUM.****Tomato.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Semperfructifera.* "Enormously prolific, bearing large clusters of plum-shaped scarlet fruits (often 50 to one cluster). The first fruits are ready in May, and the plants continually produce them almost until Christmas. They are not very large, but solid and of fine flavor." (*Dammann.*)

**3159. FENICULUM VULGARE.****Sweet fennel.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Largest sweet of Sicily.* The seeds of this sweet fennel are about twice the size of those of the common strain. (See No. 3146.)

**3160. CYNARA SCOLYMUS.****Artichoke.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Artichoke of Terranova.* Very early and fine flavored.

**3161. CUCUMIS MELO.****Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Portoghese.* "Oval, yellow, dark-green spotted; flesh white, tender, of the best flavor; contains but few seeds." (*Dammann.*)

**3162. CUCUMIS MELO.****Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Large Spanish.* "Very large, yellow, much netted; flesh yellowish red, juicy, and of an exquisite flavor." (*Dammann.*)

**3163. CUCUMIS MELO.****Winter muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Neapolitan Winter.* Said to keep very well.

**3164. CUCUMIS MELO.****Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Galata.* "Fruit large, oval, about 16 inches long, yellow, dark-green marbled; flesh greenish white, very juicy and sweet." (*Dammann.*)

**3165. FENICULUM VULGARE.****Fennel.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Prince Bismarck.* A very large sort. (See No. 3146.)

**3166. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Snow-white Belmonte.* The same seed as No. 3136.

**3167. ASPARAGUS ACUTIFOLIUS.****Asparagus.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Ivory.* "New; very tender, remaining white even if shot up very high above the ground." (*Dammann.*)

**3168. CUCURBITA PEPO.****Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Tripoli, white.* (See No. 3132.)



**3169. CYNARA SCOLYMUS. Artichoke.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Remontant.* "One of the finest; large, dark green, without any spines; bears twice with us, i. e., in spring and autumn." (*Dammann.*)

**3170. CUCUMIS MELO. Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Turkish Giant.* "Fruits large, orange yellow, smooth, weighing up to 11 pounds; flesh glaucous, very sweet and juicy." (*Dammann.*)

**3171. LAGENARIA. Gourd.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Neapolitan longest green running.* (See No. 3132.) Received as "*Lagenaria leucantha longissima;*" at Naples, Italy, called "*Cocozzella da pergola.*" "When young, this sort furnishes an excellent dish; cut into pieces about 3 inches long, take out the seeds, fill it up again with a stuffing of meat, etc., boil and serve with tomato sauce." (*Dammann.*) (See No. 3299.)

**3172. CUCURBITA PEPO. Vegetable marrow.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cocozzella of Molfetta.* Same seed as No. 3148.

**3173. CUCUMIS MELO. Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Iberia.* "Of medium size, green-fleshed, of best flavor." (*Dammann.*)

**3174. OPUNTIA FICUS-INDICA. Prickly pear.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

**3175. EUGENIA UGNI. Chilean guava.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

A half-hardy shrub with edible berries about three-eighths to one-half an inch in diameter, having a sweet and aromatic flavor; much esteemed in Chile.

**3176. EUGENIA.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

Received as *E. pitanga*, a name not to be found in Kew Index.

**3177. PSIDIUM GRANDIFOLIUM. Guava.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

A Peruvian guava, received as *P. albidum*. This and the two following numbers should be tested in the South in comparison with the guavas now grown.

**3178. PSIDIUM ARAÇA. Guava.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

A small tree growing on the high, arid plains of Brazil. The greenish-yellow fruits have a very fine flavor.

**3179. PSIDIUM. Guava.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

Received as *P. rhea*, possibly a misprint for *P. thea*, an Argentina species.

**3180. JACARANDA OVALIFOLIA. Jacaranda.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

A Brazilian tree, with beautiful and fragrant bluish-red wood streaked with black (palessandre-wood). It is a highly ornamental tree, related to the Catalpa, suitable for frostless regions. "The top is dense and rounded; the twice-pinnate leaves have all the lightness and grace of the foliage of an *Acacia*; the flowers, of a blue color, tinted with violet, form extremely graceful panicles." (*Bon Jardinier*.) "Frequently planted in Southern California, where it is quite hardy." (*Francoeschi*.)

**3181. JACARANDA CHELONIA.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

A species from Argentina.

**3182. LAURUS CANARIENSIS. Laurel.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

**3183. PARKINSONIA ACULEATA. Parkinsonia.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

A handsome, thorny, leguminous tree, native of tropical America. Valuable as an ornamental in warm climates. This is recommended by Dr. Trabut, Government Botanist of Algeria, as a hardy plant. It grows rapidly and attains a height of 6 to 8 feet. On good soils it may be sown any place, as the young plants are easy to transplant. In order to insure quick germination, Dr. Trabut recommends treating the seed with boiling water for five minutes.

**3184. CUCUMIS MELO. Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Abundantia.*

**3185. CUCUMIS MELO. Muskmelon.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Cilento.*

**3186. OPUNTIA FICUS-INDICA. Prickly pear.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Yellow.*

**3187. OPUNTIA FICUS-INDICA. Prickly pear.**

From Naples, Italy. Received through Mr. W. T. Swingle, May, 1899.

*Red.*

**3188. OPUNTIA FICUS-INDICA. Prickly pear.**

From the Botanic Garden, Catania, Italy. Received through Mr. W. T. Swingle, 1899.

**3189. OPUNTIA FICUS-INDICA. Prickly pear.**

From the Botanic Garden, Catania, Italy. Received through Mr. W. T. Swingle, 1899.

**3190. OPUNTIA FICUS-INDICA. Prickly pear.**

From the Botanic Garden, Catania, Italy. Received through Mr. W. T. Swingle, 1899.

*Sanguinea.* A variety of prickly pear with red fruit and red pulp. They ripen later than the white and yellow prickly pears grown in Sicily; sometimes so late that they do not mature well, about Palermo at least.

**3191. OPUNTIA FICUS-INDICA.****Prickly pear.**

From Taormina, Sicily. Received through Mr. W. T. Swingle, 1899.

This and Nos. 3192 and 3193 are varieties growing along the roadside on Taormina. The plants are nearly spineless, but nothing could be determined as to the character of the fruit.

**3192. OPUNTIA FICUS-INDICA.****Prickly pear.**

From Taormina, Sicily. Received through Mr. W. T. Swingle, 1899. (See No. 3191.)

**3193. OPUNTIA FICUS-INDICA.****Prickly pear.**

From Taormina, Sicily. Received through Mr. W. T. Swingle, 1899. (See No. 3191.)

**3194. OPUNTIA FICUS-INDICA.****Prickly pear.**

From the Botanic Gardens, Catania, Italy. Received through Mr. W. T. Swingle, 1899.

This and the following number are specimens of the spineless cactus growing near Bronte, on the western slopes of Mount Ætna. Nothing could be determined as to the character of the fruit.

**3195. OPUNTIA FICUS-INDICA.****Prickly pear.**

From the Botanic Gardens, Catania, Italy. Received through Mr. W. T. Swingle, 1899.

The same as No. 3194.

**3196. OPUNTIA FICUS-INDICA.****Prickly pear.**

From the Aternó, Sicily. Received through Mr. W. T. Swingle, 1899. (See No. 3194.)

**3197. ZEA MAYS.****Corn.**

From Norfolk, Va. Received through Capt. John Wallace, May, 1899.

*Virginia horse tooth.* "The home of this kind of corn seems to be the district of seacoast from the capes of Virginia to Hatteras, N. C., and running west not over 40 or 50 miles. Whether the soil and climate of other sections suit it as well I can not say from experience. By far the greater part that is raised to sell is shipped to Europe, mainly to Germany. It is used there for ensilage, and so is not allowed to come to maturity, even if the seasons would permit. It probably requires too long a season for their climate, and would for our Western corn States, but for ensilage it might do, it would seem, for any section of our country. The stalk is large and the blades heavy. It grows very tall, 10 to 15 feet, and generally with but one ear, though we are getting two ears by selection. Both stalk and grain contain more saccharine than in any other kind, except sugar corn, of course, and the ensilage is said to be more nutritious than that made from common yellow and white Western corn.

"Well-drained black land, on which the growth was large black gum, cypress, and poplar, is the best suited for horse tooth corn. This land will bring 60 to 80 bushels to the acre when first cleared, and when well limed will keep up to 50 bushels, but finally settles to from 30 to 40 bushels per acre, though it would easily run up to 60 to 80 bushels again if grass and potatoes were rotated and the manure which should come from feeding stock was used.

"We cultivate in the drill rows 4 to 4½ feet apart and the stalks 20 to 30 inches apart in the rows. We have to use the plow in cultivation and weed with hoes, because the grass grows so fast that the Western plan of using the harrow and cultivator would not keep down the weeds. It might be planted in squares and this flat cultivation used as well as with other corn, but two stalks left to the hill instead of three or four would be better.

"This should certainly make good corn for canning in the roasting-ear stage. The ears are large and the grains so long that it would yield so much more than ordinary corn. Its flavor is excellent, and a little sugar added when eaten would make it equal to the best sugar corn." (*John Wallace.*)

**3198 to 3203. PHOENIX DACTYLIFERA.****Date palm.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

"This collection of date palms was obtained from Mr. Yahia Ben Kassem, of Orleansville, Algeria. Orleansville is north of the coast region, not far from the coast of the Mediterranean, and only a slight elevation above the sea. It is outside of the region where the date palm usually matures its fruit, but Mr. Yahia has succeeded in finding a very early species which has ripened in his garden. These plants were dug up, placed in tubs, and shipped to America in March, 1899. They were forwarded upon receipt to the experiment station of Arizona, to be planted in the palm garden at Tempe, where they are now growing.

- 3198.** *Tadala* (also called *Tadala*). This very early sort, brought into general notice by Mr. Yahia, was originally introduced into Orleansville from the M'Zab region in North Sahara, where it is one of the most highly esteemed varieties. The dates are very long and slender, sometimes reaching 3 inches in length, and said to be of good flavor and to keep very well. The palm is of very vigorous growth and has very long leaves and thick stem. This plant is a sucker brought from the M'Zab in the spring of 1898. It was then planted in Mr. Yahia's garden at Orleansville, where it grew for a year, being dug up and put in a tub for shipment to America in March, 1899.
- 3199.** *Timdjonbert*. This is another variety introduced from the M'Zab country by Mr. Yahia. It is a short, thick date of good flavor. This plant was also brought from the M'Zab as a sucker in the spring of 1898 and was grown a year in Mr. Yahia's garden.
- 3200.** *Tadala*. The same variety as No. 3198. This plant was a large sucker cut from a bearing tree in Mr. Yahia's garden in Orleansville. It was removed from a tree early in March, 1899.
- 3201.** *Deglet nour*. This is a famous "light date" from the Algerian Sahara. It is the best-known African date, being sold in great quantity in the Paris and London markets. It is of medium size, amber colored, of exceedingly good quality. This plant was brought from Biskra and planted in Mr. Yahia's garden in 1897, where it remained two years, being dug up for shipment early in March, 1899. This plant produced a few flowers early in 1898.
- 3202.** *Deglet el beida*. This is one of the so-called dry dates, unlike the ordinary "soft dates," which remain attached to the fruit stalk. These fall to the ground when ripe. They are very firm in texture and are perfectly dry; they keep indefinitely and are consumed in enormous quantities by the Arabs, who prefer them to the soft dates for a regular diet. This is one of the best varieties of dry dates all through the northern Sahara. This plant is from Mr. Yahia's garden at Orleansville. Its origin was not learned.
- 3203.** *Rhars* or *G'hars*, sometimes spelled *R'ars*. This is a standard variety of early soft dates in all parts of the northern Sahara. It is much preferred by the Arabs on account of its keeping qualities. It is commonly offered for sale in tight sheepskins. It is of good flavor but has a very large pit. The plant shipped under this number was brought from the M'Zab country in the spring of 1898 and was grown one year in Mr. Yahia's garden at Orleansville; was dug up and shipped early in March, 1899." (*Swingle*.)

**3204. MACHILUS TOMENTOSA?****Anis wood.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

It should be tried as a stock for the Avocado pear. This species, received as *M. tomentosa* (a name that could not be traced), was introduced into the Jardin d'Essai at Algiers in 1875. It is now a fine pyramidal tree, 40 or 50 feet high. It bears violet-colored fruits the size of a hen's egg, which have the flavor of the Avocado pear, to which this plant is closely allied. The tree is said to be more hardy than the Avocado pear, and it fruits even in Italy. It has been suggested as a stock on which to graft Avocado pear. It furnishes the Anis wood of cabinetmakers. This may be the *Machilus macrantha* of the East Indies. Dr. Trabut thinks it may be a species of *Persea* from western South America.

**3205. CASMIROA EDULIS.****Zapote blanco.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

"This tree, a native of Mexico, belongs to the family *Rutaceae* and is distantly related to the orange. It forms a large, round-topped tree, sometimes 40 or 50 feet high. The leaves are trifoliolate and evergreen. The fruit varies considerably in size, being 1 to 4 inches in diameter. It is pale yellow when ripe, and has a rich subacid flavor somewhat like that of the peach. The tree has been introduced into Algeria and southern France, but does not fruit well in the latter country. There is a fine specimen over 75 years old in Santa Barbara, Cal. In the statistics published by the Mexican Government relative to fruit production in the Republic, issued in 1895, the *Zapote blanco* is given as an important fruit, the annual value of the crop amounting to \$100 or more in a great many municipalities, and in Nogales, in the Canton of Orizaba, State of Vera Cruz, a crop worth \$2,000 (Mexican) is said to be produced, the valuation being 25 cents (Mexican money) per hundred, while in Mantehaula, State of San Luis Potosi, the annual value of the crop is \$1,200 (Mexican). The leaves are said to be used in medicine in Mexico. Efforts made in California to propagate from cuttings proved unsuccessful." (*Swingle.*)

**3206. ELAEAGNUS UMBELLATA.****Goumi.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from Jardin d'Essai, Mustapha.

This shrub or small tree was recently introduced into Europe from Japan. It is perfectly hardy in France, grows in all kinds of soil, and produces an abundance of subacid fruits which make excellent tarts and preserves. It has also been used for making a sort of kirsch. It has fine evergreen foliage, and may be used for hedges. These Japanese gomis have been suggested as useful in planting in game preserves to furnish food for game birds. It is readily reproduced by cuttings, and fruits in three years.

**3207. PRUNUS PERSICA.****Peach.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

This is a seedling peach, originated by M. Fontaine at Blidah. Said by M. Fontaine to be the earliest peach he knows. It is of the type of the *Amignon*, and is a freestone. This number includes one seedling tree.

**3208. EUGENIA GUABIJU.**

From Algeria. Received through Mr. W. T. Swingle, from the Jardin d'Essai, Mustapha.

This species is a native of Argentina, and is said by Dr. Trabut to produce good fruit.

**3209. MACHILUS TOMENTOSA?**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha. (See No. 3204.)

**3210. PUNICA GRANATA.****Pomegranate.**

From Algeria. Donated by Dr. Trabut, director of the experiment station at Rouïba.

*Grenadier sans pepins.* This is a seedless pomegranate, said to be one of the best sorts.

**3211. MURRAYA EXOTICA.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

This shrub, belonging to the orange family, is spread throughout tropical Asia, the East Indies, and as far as New Zealand. It has beautiful evergreen foliage and fragrant white flowers. The leaves said to be used in the East as an ingredient of curry powders.

**3212. SÖPHORA SECUNDIFLORA.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

An evergreen shrub, native in Texas and Mexico. It produces numerous fragrant racemes of blue flowers in spring. Its seeds are very poisonous. It can be grown only in regions where the orange is hardy.

**3213. FICUS NITIDA.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

A favorite shade tree for planting along streets and roadsides in Algeria. It has glossy evergreen leaves much like those of the india-rubber tree, but very much smaller, being only 2 or 3 inches long. This species, if correctly named, is a native of the East Indies. (See No. 3220.)

**3214. EUCALYPTUS TROLARDIANA.****Eucalyptus.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

This Eucalyptus is a hybrid of *Eucalyptus rostrata* and *E. tereticornis*. It is a very handsome and vigorous form of *Eucalyptus*, which is recommended by Dr. Trabut for general planting. (See No. 2987.)

**3215. CARICA.****Pawpaw.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

This species is called *Carica gracilis* at the Jardin d'Essai, Algeria, but this name could not be traced.

**3216. GLYCOSMIS TRIFOLIATA.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

A Japanese species somewhat related to the orange, but bearing small berries. The plant is evergreen and bears small white flowers.

**3217. VITIS ACIDA.****Grape.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

A very pretty evergreen climbing vine; foliage free from disease; a native of the Southeastern United States. (See No. 3303.)

**3218. COCCOLOBA LATIFOLIA.****Sea grape.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

A tree from tropical South America; should be tested in Florida for fruit in comparison with the native sea grapes and pigeon plums belonging to this same genus of plants.

**3219. MUSA PARADISIACA.****Banana.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

*Ilamma.* "This banana was introduced into Algeria some years ago from Brazil. It is the only one out of the considerable collection of varieties which proved sufficiently hardy and vigorous to stand the climate at the Jardin d'Essai. The plant is said to be very large and to produce small, perfumed, fleshy fruits, of salmon color and high flavor." (*Swingle.*)

**3220. FICUS LAEVIGATA.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

This tree, together with No. 3213, is commonly used as a shade and avenue tree along the roadsides. It somewhat resembles the india-rubber tree, but has much smaller leaves, larger, however, than those of *Ficus nitida*, to which it is said to be superior as a shade tree.

**3221. ADENOCALYMNA.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

This vine was received as "*Adenocalymna emarginata*," a name which can not be traced, possibly a misprint of *A. marginata*. It produces abundant yellow flowers in summer and autumn. It is a native of tropical South America and belongs to the *Bignoniaceae*.

**3222. PHYLOSTACHYS AUREA.****Bamboo.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

This small bamboo, a native of China and Japan, is hardy in France.

**3223. ARUNDINARIA SIMONI.****Bamboo.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

This small Chinese bamboo is perfectly hardy in the latitude of Paris. It reaches a height of from 12 to 15 feet. It has the drawback of spreading through the ground rapidly by means of suckers. This, however, becomes a useful property if the plant be used to protect embankments from erosion.

**3224. FICUS CARICA.****Caprifig.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

Cuttings of caprifigs which bore the winter generation of fruits. These were cut from several different trees growing about Algiers.

**3225. FICUS CARICA.****Caprifig.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

Cuttings from a caprifig tree growing in Mustapha, near Algiers, which bore a heavy crop of caprifigs in 1898, which sold for 35 francs. This may prove a valuable variety.

**3226. TAMARIX AFRICANA.****Tamarix.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

A species of Tamarix, native in Algeria and Tunis. It is not so valuable as *Tamarix arborescens* (No. 3343), but should, nevertheless, be tested along with this in the arid Southwest. *Tamarix gallica*, a beautiful ornamental from the Mediterranean region, is hardy south of the latitude of Washington, D. C.

**3227. CITRUS AURANTIUM.****Blood orange.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

A seedling blood-red orange, said by M. Fontaine to be of superior quality. There are many in Algeria which reproduce themselves by seed, and this may prove to be one of them.

**3228. PHYLOSTACHYS NANA.****Bamboo.**

From Algeria. Received through Mr. W. T. Swingle, 1899, from the Jardin d'Essai, Mustapha.

An ornamental bamboo.

**3229. ACACIA ARMATA.****Kangaroo thorn.**

From Algeria. Received through Mr. W. T. Swingle, 1899.

This acacia is a shrub or small tree, 10 to 20 feet high, from tropical and subtropical Australia; is much grown for hedges, though less manageable than various other hedge plants; more important for covering coast sand with an unapproachable prickly vegetation. (*Von Mueller.*)

It is said to be well adapted to the coast region of California, where it forms impenetrable hedges.

**3230. ABERIA CAFFRA.****Kei apple.**

From South Africa. Received April, 1899.

A hedge plant with edible fruits. This evergreen shrub or small tree belongs to the family of *Biraceae*. It is a native of the Cape, and is used especially in Natal for making hedges, for which its long thorns render it suitable. The fruit, said to resemble a small apple, is called Kei apple or Kafir apple. This fruit is very seedy and is best used for preserves. The staminate and pistillate flowers grow on different plants, and unless both are planted in proximity no fruit is produced. This is said to stand some frost in California, but to succumb at 16° F.

**3231 to 3240. VITIS VINIFERA.****Grape.**

From Algeria. Received through Mr. W. T. Swingle, 1899. Donated by Dr. Trabut, Algiers.

This collection of cuttings of varieties of the grape are mostly indigenous to North Africa. Was donated by Dr. Trabut, director of the experiment station at Rouïba. The Mohammedans do not drink wine, and consequently have devoted special attention to the production of table grapes. It is believed that some of these will prove valuable in the warmer parts of the United States. The collection comprises the following sorts:

- 3231.** *Cherchel.* Native in Algeria. It is a black variety, used both as a wine grape and for the table. (4 cuttings.)
- 3232.** *Blanc de Dellys.* This is a seedling grape with loose bunches, originated by Dr. Trabut. It is of good quality. (4 cuttings.)
- 3233.** *Chavenich-Chaouch* (?) This is presumably the well-known Persian variety of white table grape. (4 cuttings.)
- 3234.** *Aïn el Seba.* A variety indigenous to North Africa. (4 cuttings.)
- 3235.** *Ribier du Maroc.* From Morocco. "Bunch above medium, a little cylindro-conic, sometimes close and sometimes rather loose, occasionally branched, on a rather stout, short stalk; berry rather large, olive-shaped, on a long and stout pedicel; flesh firm, crisp, sweet, and high flavored; skin somewhat thick, resistant, turning to a violet black when ripe; 3d epoch." (*Pulliat.*) (4 cuttings.)
- 3236.** *Aïn Kelb* (meaning literally dog's eye). Native in Algeria. It is a very good table variety, having exceedingly sweet berries. Sometimes they are so sweet that the juice is thick and is difficult to press out. It makes good sweet wine.
- 3237.** *Sultanic de la Carabarnose.* This is said to be one of the best varieties of seedless grapes from Smyrna. It is used in making the highest grade of seedless raisins. (4 cuttings.)
- 3238.** *Aïn Reba.* This is an indigenous North African variety. (3 cuttings.)
- 3239.** *Aïn Beugra.* This indigenous North African variety makes a very dark wine of second quality. The berries are of large size. (4 cuttings.) "The *Aïn Beugra* is one of the indigenous varieties of grapes which merits cultivation for the production of red wine. The wine obtained is not of fine quality, but is rich in color and in extractive materials, making it very useful for mixing. It is fruitful, ripens rather late, and keeps its leaves green and intact very late in the season. It does not suffer from the sirocco." Pom. 17455.
- 3240.** *Sultanic.* Presumably the Turkish variety of this name. (4 cuttings.)



**3241. DIOSCOREA SATIVA.****Yam.**

From Hawaii. Donated by Her Majesty ex-Queen Liliuokalani, March, 1899.

*Hoi*, pronounced "Ho-ye." A vine; tubers used for food in times of drought. It is first baked underground, then the skin is scraped off, and afterwards pounded to the consistency of poi and eaten with fish.

"The Yam, common in the forests of the lower zone, was cultivated for the supply of ships before the introduction of the potato, particularly on Kauai and Niihau. The species ranges westward over all the regions lying between the Hawaiian Islands and Africa, and its native name 'Hoi' follows it to Sumatra. The axillary bulbs are called 'alaala.'" (*Hillebrand.*) There is much confusion in reference to the systematic position of *Dioscorea sativa*. It is said to have been grown by Linnæus from seeds received from America, but he also said that it grew in India. Bailey (*Cyclopedia*) recommends that the name be dropped, but for the present we have followed Hillebrand in retaining the name *sativa*. (3 tubers.)

**3242. DIOSCOREA SATIVA.****Yam.**

From Hawaii. Donated by Her Majesty, ex-Queen Liliuokalani, March, 1899.

"*Uhi*, or yam, pronounced 'u-hee,' a vine. The root of this plant is eaten. It is either found round, as a melon, or long, measuring 3 feet in length. The seeds may also be eaten, but both have to be cooked." (6 tubers.)

**3243 to 3249. FICUS CARICA.****Caprifig.**

From Algeria. A collection of cuttings of caprifigs from the vicinity of Algiers secured by Mr. W. T. Swingle.

These male figs do not produce edible fruit. They supply homes for the fig insect, however, and are introduced with the view of providing trees which will harbor the various generations of insects in the Californian climate.

**3243.****3244.** *Red caprifig.***3245.****3246.****3247.** *Egg fig.***3248.****3249.****3250 to 3268, and 3317, 3318. EUCALYPTUS.****Eucalyptus.**

From Algeria. Received through Mr. W. T. Swingle. March, 1899.

"The 21 numbers from 3250 to 3268, and 3317 and 3318 include a collection of seeds of *Eucalypti* from the plantation of M. Cordier, growing at Maison Carrée, Algeria. Through the kindness of the late M. Cordier's nephew, who is now in charge of the plantation, I was given permission to collect branches and seeds of any of the trees on the plantation. The present collection consists of a selection made from the row planted along the west side of the vineyard south of M. Cordier's house, which in his original notes is recorded as the plantation 'près du chemin des bestaux.'" (*Swingle.*)

The numbers given below as those of M. Cordier are those of his original record, and are serial, beginning at the north end of the row and running south. This row includes a large number of species which were planted in March, 1878, mostly from seeds obtained from Vilmorin in the autumn of 1877. Only trees showing unusual vigor, or interesting for some other reason, as, for instance, having large or showy flowers, were collected. In every case the circumference of the tree was measured at 1 meter (39 inches) from the ground, the circumference being given in centimeters. Mr. J. Burt Davy has been kind enough to look over the collection and determine the species, the original labels being in many cases obviously wrong. Nos. 3262 and 3268 were identified by Dr. Trabut; all of the others were determined by Mr. Davy.

**3250.** *Eucalyptus cornuta.* (Cordier, No. 51.) (Circum., 164 cm.)**3251.** *Eucalyptus teretecornis.* (Cordier, No. 28.) (Circum., 118 cm.)**3252.** *Eucalyptus saligna.* (Cordier, No. 16.) (Circum., 153 cm.)**3253.** *Eucalyptus stuartiana.* (Cordier, No. 2.) "*Illawarra box.*" (Cordier.) (Circum., 130 cm.)

- 3254.** *Eucalyptus stricta* (?) (Cordier, No. 10.) (Circum., 97 cm.) "Not unlike some forms of *Eucalyptus acmenoides*." (Dary.)
- 3255.** *Eucalyptus resinifera* (?) (Cordier, No. 11.) "Off type. Perhaps *E. resinifera* × *Botryoides*." (Dary.) Labeled "Wolly bui (?) [=Wooly butt?] Ramel" in Cordier's list. (Circum., 103 cm.)
- 3256.** *Eucalyptus tereticornis*. (Cordier, No. 13.) (Circum., 92 cm.)
- 3257.** *Eucalyptus stricta* (?) (Cordier, No. 14.) "White iron bark." "Bark like that of cork oak." (Swingle.) "Determination doubtful because of absence of flowers." (Dary.) (Circum., 63 cm.)
- 3258.** *Eucalyptus tereticornis, brachycoris*. (Cordier, No. 22.) (Circum., 117 cm.)
- 3259.** *Eucalyptus leucocylon, siderocylon*. (Cordier, No. 25.) "Same as *E. siderocylon rosea*." (Dary.) (Circum., 109 cm.) "The pink flowers are large, abundant, and very pretty; much frequented by bees. The only species I saw so frequented. It differs from No. 3265 in having larger, brighter-colored flowers, and in being a much larger tree." (Swingle.)
- 3260.** *Eucalyptus leucocylon*. (Cordier, No. 29.) "Bark thick, like *E. leucocylon, siderocylon*." (Swingle.) (Circum., 126 cm.)
- 3261.** *Eucalyptus rostrata*. (Cordier, No. 32.) "Branches pendant." (Cordier.) (Circum., 117 cm.)
- 3262.** *Eucalyptus riminalis*. (Cordier, No. 34.) Identified by Dr. Trabut. (Circum., 91 cm.)
- 3263.** *Eucalyptus calophylla*. (Cordier, No. 39.) (Circum., 54 cm.)
- 3264.** *Eucalyptus leucocylon*. (Cordier, No. 43.) (Circum., 117 cm.)
- 3265.** *Eucalyptus leucocylon, siderocylon*. (Cordier, No. 46.) "*E. siderocylon* var. *rosea*. Small-fruited form." (Dary.) "Differs from No. 3259 in having lighter-colored flowers, not so frequented by bees." (Swingle.) (Circum., 59 cm.)
- 3266.** *Eucalyptus melliodora*. (Cordier, No. 47.) J. B. D. (Circum., 103 cm.)
- 3267.** *Eucalyptus rudis* var. (Cordier, No. 5.) J. B. D. "Perhaps *E. rudis* × *rostrata*." (Dary.) "Possibly *E. rudis* × *E. tereticornis*." (Dr. Trabut.) (Circum., 60 cm.)
- 3268.** *Eucalyptus rostrata*. (Cordier, No. 52.) "Red gum." (Cordier.) "Fruits small." (Trabut.) (Circum., 105 cm.)
- 3317.** *Eucalyptus rudis*. (Cordier, No. 45.) Broad-leaved form. (Dary.) (Circum., 118 cm.)
- 3318.** *Eucalyptus polyanthema*. (Cordier, No. 15.) (Circum., 108 cm.)

**3269. IPOMOEA BATATAS.****Sweet potato.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

*Quillet*. Bears tubers near surface of ground. A new variety, originated from seed by M. Fontaine, at Blidah.

**3270. PINUS PINEA.****Stone pine.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

*Pignon*. "The seeds are eaten. The cones are put for a few minutes in a fire, which causes them to open and allow the seeds to drop out. This pine, known in French as the Parasol pine, grows all about the Mediterranean. It has a dense, round top, and the tree is given a striking appearance by cutting away the lower branches for fuel, a procedure almost universal about the Mediterranean. This leaves a dense, umbrella-like top at the end of the slender, straight stem. The nuts are said to be used in certain nut foods and resemble in flavor the piñons of the Southwest. The tree is said to thrive best in deep, sandy, dry soil. When the seeds are desired for sowing, the cones are thrown into hot water, which causes them to open without risk of endangering the seed. The young seedlings are tender, but after four or five years are said to stand the climate of London and Paris without any protection. In the northern latitudes they are best grown in pots until four or five years old to avoid transplanting." (Swingle.)

**3271. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Mr. Yahia Ben Kassam.

*Deglet el Beida*. A dry date. (See No. 3329.)

**3272. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Purchased in the market at Algiers.

*M' Kentichi.* A small but good dry date. In the city of Algiers the *M' Kentichi* date is preferred to the *Deglet el Beida* (see No. 3329), which, though larger, is not so sweet. At Orleansville Mr. Yahia prefers the latter.

**3273. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Purchased in the market at Algiers.

*Deglet Nour.* This is the standard date grown for export to Europe.

**3274. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Mr. Yahia Ben Kassen.

*Timdjouert.* A red date of good quality, rarely seen by Europeans. (See No. 3002.)

**3275. PHOENIX DACTYLIFERA.****Date.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Mr. Yahia Ben Kassen.

*Bent Akbela.* A date rarely seen by Europeans. Mr. Yahia considers this one of the best of the *M'Zab* dates.

**3276. FICUS CARICA.****Fig.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by M. Jules Borgeaud, Swiss consul at Algiers.

This sample pack of figs is from Kabylia. Figs come packed in small sacks made of braided leaves of the dwarf palm. In 1899 the trade in these figs was very good, owing to the scarcity of Smyrna figs. These figs contain ripe seeds, and consequently have been caprifigged. Seeds should be planted in the hope of obtaining new varieties of figs and caprifigs.

**3277. OPUNTIA ROBUSTA.****Prickly pear.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

The large, round, gray pads of this are very ornamental. This cactus is one of the most ornamental species grown in the gardens in southern France and in Algiers. It has very thick, circular pads, about a foot in diameter, grayish green in color. The plant attains a height of from 15 to 20 feet, and is strikingly ornamental. It is commonly called *Opuntia Piccolominiana*, but is referred to *O. robusta* by Schumann.

**3278. OPUNTIA CRASSISSIMA.****Prickly pear.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

A spineless cactus, of possible value for forage. The fruit is said to be edible.

**3279. OPUNTIA FICUS-INDICA INERMIS.****Prickly pear.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

A spineless cactus of great importance as a forage plant in arid countries. There are extensive plantations of it in Tunis and Algeria.

**3280. OPUNTIA ACIDA.****Prickly pear.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

An acid-fruited cactus, used for making cooling summer drinks.

**3281. COFFEA.****Coffee.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

A coffee from Angola, said to be the best species for wet lands.

**3282. ANANAS SATIVA.****Pineapple.**

From Blidah, Algeria. Received through Mr. W. T. Swingle, March, 1899.

*Trinité.* A hardy pineapple. Will stand the rather cold winters of Blidah, Algeria.

**3283. PASSIFLORA.****Passion fruit.**

From Blidah, Algeria. Received through Mr. W. T. Swingle, March, 1899.

An edible passion fruit from an old garden at Ruisseau des Singes, near Blidah.

**3284. CEREUS.****Cactus.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

*Cierge à fruits comestible.* An edible cactus, probably introduced from Mexico.

**3285. ASPARAGUS ACUTIFOLIUS.****Asparagus.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

A wild asparagus, growing at Maison Carrée. This species is edible, but not commonly used because the shoots are too small. May be useful in hybridizing with other species of asparagus.

**3286. DOLICHOS LABLAB.****Madagascar bean.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

*Chinese White flowered No. 1.* A valuable bean for hot countries, with edible pods.

**3287. DOLICHOS LABLAB.****Madagascar bean.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

*Chinese White No. 2.* A very valuable bean with edible pods; for hot countries.

**3288. DOLICHOS LABLAB.****Madagascar bean.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

*Chinese White No. 4.* A valuable bean with edible pods; for hot countries.

**3289. LATHYRUS TINGITANUS.****Chicharaca.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

This annual forage plant is native in Algeria and Morocco, and is cultivated on the Canary Islands under the name of *Chicharaca*. Animals are said to eat this forage, which does not seem to contain the more or less poisonous properties which are contained by other species of this genus. It is a typical winter forage plant, being sown in Algeria in October and cut for the first time in February. It is frequently cut the second or sometimes even the third time. It is said to grow so rapidly and so vigorously that it destroys all the weeds, and when allowed to grow wild and cut late it has yielded, in Dr. Trabut's experimental station at Rouïba, as much as 6 tons per acre of hay. It is said to be hardy in the south of France, where it is exposed to winter temperatures of 26° F.

**3290 to 3297. HIBISCUS ESCULENTUS.****Okra.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

Dr. Trabut has made an extensive trial of a large number of named varieties of *okra*. This vegetable is of great importance in the eastern and northern Mediterranean regions. The varieties should be carefully tested in the South in comparison with the best American varieties.

**3290.****3291.** *Blanc Louisiana.* White Louisiana.**3292.** *Gombo a gros fruits.* Large fruited okra.**3293.** *Gombo nain vert hatif.* Dwarf early green okra.**3294.** *Sultan Giant de Roumaine.***3295.** *Gombo d'Egypte.* Egyptian gumbo.**3296.** *Gombo nain amelioré.***3297.** *Gombo a fruit rouge.***3298. HEDERA HELIX AFRICANA.****Ivy.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899, from the Jardin d'Essai, Mustapha.

A variety of the English ivy, for warm countries.

**3299. LAGENARIA.****Gourd.**

From Algeria. Given Mr. W. T. Swingle by an Arab proprietor at Blidah.

*Karet-el-Ithalm.* A gourd attaining a length of 2 to 4 feet. The fruits are said to be very good if cooked when from 8 to 10 inches long. (See No. 3171.)

**3300. IPOMOEA BATATAS.****Sweet potato.**

From Blidah, Algeria. Received through Mr. W. T. Swingle, March, 1899.

A new variety of sweet potato, originated from seed by M. Fontaine. This sort is remarkable in having flesh which turns red when cooked. It is said to be of a superior flavor.

**3300a. FICUS CARICA.****Caprifig.**

From Algeria. Received through Mr. W. T. Swingle, April, 1899. Imported in cooperation with the Division of Entomology.

This number comprises several shipments of the winter generation of fruits (mamme) of the caprifig, collected from the foothills of the mountains in Kabylia, near Algiers. Care was taken to secure caprifigs which were matured and yet still firm. Each caprifig was wrapped separately in tin foil, and then small packages were made up and sent to Washington by mail. A number of different shipments were made. As in the case of the trial shipments made in the spring of 1898 from Naples to New York, it was found that caprifigs packed in this way arrived in America in good condition, provided they were firm when picked. These caprifigs, upon their receipt, were turned over to the Division of Entomology, and forwarded by the latter to Mr. George C. Roeding, of Fresno, Cal., who received them in April, 1899, "the first shipment of forty figs arriving April 6. The fruits received were cut down, placed in open fruit jars, and these hung in a caprifig tree growing in the orchard, the tree having been previously prepared for the insects by covering with sheeting. Five other shipments were received between the date named and April 15, the greater part of the fruits being handled in the manner described." (Roeding.)

As a result of this importation, the caprifig insect (*Blastophaga*) became established in caprifig trees in Mr. Roeding's orchard. As has been demonstrated by Mr. Roeding and Dr. Eisen, the presence of this insect is absolutely necessary to carry on the culture of Smyrna figs on a commercial scale, since Smyrna figs require pollination in order to set their fruit. Hand pollination, which has been practiced to some extent in California by Mr. Roeding and Dr. Eisen, is altogether too expensive to be feasible in commercial plantations. In the fig-producing regions of southern Italy, Sicily, north Africa, Greece, and Asia Minor this pollination of the figs used for drying is accomplished through the agency of the *Blastophaga*, which lives in the caprifigs.

Caprifigs from which the insects are about to escape are tied upon rushes, or threaded on a string, and are thrown up into the branches of the fig trees. The insects, upon leaving the caprifigs, become dusted with pollen from a row of stamens which grow just inside the mouth of the caprifig. They then enter the young figs on the tree in which the chaplet of caprifigs has been hung, and in so doing carry in pollen and fertilize the numerous flowers inside these young figs, thereby causing the crop to set. The insect lives, however, only in the caprifig, and in order to carry on successfully the culture of drying figs it is necessary to have an orchard containing varieties of the caprifig in which the insect can live throughout the year. These varieties of caprifigs must furnish a succession of fruits all through the year, since if the caprifig trees fail to produce fruits at any time of the year the *Blastophaga* dies for want of a suitable breeding place. The Section of Seed and Plant Introduction is accordingly making efforts to secure as many varieties of caprifigs as possible, so that the maintenance of the fig insect in California and other regions suitable for growing Smyrna figs may be rendered certain.

**3301. FREYLLINIA CESTROIDES.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899; from the Jardin d'Essai, Mustapha.

An ornamental vine from tropical Africa.

**3302. HAEMATOXYLON (?)**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

A shade tree growing in the park at Blidah, Algeria.

**3303. VITIS ACIDA.**

**Grape.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

A fine evergreen vine. Usually free from disease. Foliage of a rich green color; ornamental. (See No. 3217.)

**3304. CUCUMIS MELO.**

**Muskmelon.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

*Olive.*

**3305. CUCUMIS MELO.**

**Muskmelon.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

This melon is from Tizi-Ouzou, in Kabilya.

**3306. RUBUS ROSIFOLIUS.**

**Raspberry.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

This raspberry, said to be a native of the subtropical regions of Africa and Asia, bears abundant, rather large fruits, which ripen early. Should be tried in the Southern States and in California.

**3307. ASPARAGUS ALTISSIMUS.**

**Asparagus.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

A Moroccan species, of little or no food value.

**3308. SCHINUS TEREBINTHIFOLIUS.**

**Pepper tree.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

This Brazilian tree is much used for street planting in Tunis. It is said to be much superior to the ordinary pepper tree (*Schinus molle*) for this purpose. The branches are much stiffer than in the latter species and the leaves are larger and darker green. Should be tried in the South and in California.

**3309. JUNIPERUS OXYCEDRUS.****Cedar.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Trabut, Government Botanist of Algeria.

A splendid ornamental cedar.

**3310. HOVENIA DULCIS.****Raisin tree.**

From Blidah, Algeria. Donated by M. Pelletier, through Mr. W. T. Swingle. Received March, 1899.

A small tree with spreading branches and deciduous foliage. The fruit stalks enlarge and become fleshy, and at the time the seeds are ripe are extremely sweet, resembling raisins in taste. These seeds were collected near Blidah from a very large tree which bore enormous quantities of fruit. The fruits are used for making wine. It has been recommended that the small pedicels be mixed with white grapes, pressed, and the juice allowed to ferment completely, making a heavy wine of from 13 to 16 degrees. This tree seemed much more fertile than those commonly grown in the United States. It is a native of China and is hardy in the latitude of Washington, D. C. It can be reproduced by cuttings. It is probable that by selection a valuable fruit may be developed from this species. (See No. 3028.)

**3311. ANANAS SATIVUS.****Pineapple.**

From Blidah, Algeria. Received through Mr. W. T. Swingle, March, 1899.

*Martinique.* Very spiny; hardy; will stand cool winters with some frost.

**3312. DAUCUS CAROTA.****Wild carrot.**

From Reghaia, Algeria. Received through Mr. W. T. Swingle, March, 1899.

A sport with nodding pedicels; of botanical interest only.

**3313. CLITORIA.****Clitoria.**

From Reghaia, Algeria. Received through Mr. W. T. Swingle, March, 1899. Donated by Dr. Bourlier.

A black and yellow flowered, ornamental, leguminous vine. It yields no seeds, but is propagated by cuttings.

**3314. IRIS SISYRINCHIUM.****Iris.**

From Reghaia, Algeria. Received through Mr. W. T. Swingle, March, 1899.

A very pretty, small, Algerian iris.

**3315. CONVULVULUS DURANDI.****Convolvulus.**

From Reghaia, Algeria. Received through Mr. W. T. Swingle, March, 1899.

A rare Algerian species. Dr. Trabut thinks that this vine may yield medicinal scammony.

**3316. ROMULEA BULBOCODIUM.**

From Reghaia, Algeria. Received through Mr. W. T. Swingle, March, 1899.

The plants are dioecious (i. e., male and female flowers on separate plants), and the male flowers are the larger. An ornamental perennial flowering herb related to the blue flag.

**3317. EUCALYPTUS RUDIS.****Red gum.**

From Maison Carée, Algeria, (Cordier's No. 45). Received through Mr. W. T. Swingle, March, 1899.

*Broad-leaved form* (Davy). (See No. 3250.) (Circum., 118 cm.)

**3318. EUCALYPTUS POLYANTHEMA. Red box.**

From Maison Carée, Algeria, (Cordier's plantation No. 15.)

Received through Mr. W. T. Swingle, March, 1899. (See No. 3250.) (Circum., 108 cm.)

**3319. ASPARAGUS ALBUS. Asparagus.**

From Reghaia, Algeria. Received through Mr. W. T. Swingle, March, 1899.

Growing along the roadside. This is a double, wild species of asparagus. The shoots are slender, and have the drawback of rapidly becoming bitter after being gathered.

**3320. CRATAEGUS OXYACANTHA MONOGYNA. Thorn.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

Growing wild in a ravine at Reghaia. Dr. Trabut says that there are races with much larger fruit. May be useful for stocks.

**3321. PHOENIX DACTYLIFERA. Date.**

From Algeria. Purchased in the Arab market by Mr. W. T. Swingle, March, 1899.

*Ghers.* The dates were tightly packed in goatskins to prevent their drying out. (See No. 3203).

**3322.**

From Reghaia, Algeria. Donated by Dr. Bourlier. Received through Mr. W. T. Swingle, March, 1899.

An unknown leguminous forage plant from Madagascar. It is a shrub.

**3323. ACACIA ARABICA. Acacia.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria. Received through Mr. W. T. Swingle, March, 1899.

This small spiny tree occurs from India to the Western Sahara in arid situations. It is used for hedges, and yields an inferior grade of gum arabic (the true gum arabic is produced by *Acacia senegal*). The pods are sometimes used for tanning, and in some parts of India the lac insect is reared on the branches, though the lac produced on this tree is inferior to that on the *Kusum* tree (*Schleichera trijuga*, *Sapindaceae*), the *dkak* (*Butea frondosa*, *Leguminosae*), or the *pipal* (*Ficus religiosa*, *Urticaceae*). The *Acacia arabica* yields lac in dry regions, however, where some of the above species would not thrive. The wood is hard and durable.

**3324. CASSIA LAEVIGATA.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

A shrub growing in the Botanic Garden of the School of Medicine, Mustapha. It is a native of many tropical regions and is sometimes grown for ornament.

**3325. LIVISTONA AUSTRALIS. Palm.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

"*Livistona australis* is one of the most southern palms of the Australian continent, reaching the Snowy Range in latitude 37° 45' S." (*Hooker.*) It is one of the most hardy and most beautiful fan palms. It is extensively planted in southern France and in California. It is often grown as a house palm and is frequently incorrectly called *Corypha australis*.

**3326. CAESALPINIA. Acacia.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

A handsome evergreen shade tree from the Jardin d'Essai, Algiers. Should be tried as a shade tree in the South.



**3327. ZIZYPHIUS SATIVA(?)****Jujube.**

From Blidah, Algeria. Purchased in the Arab market. Received through Mr. W. T. Swingle, March, 1899.

The scarlet dried fruits called "Haneb" are sold in every Arab market in North Africa.

**3328. DIOSPYROS LOTUS.****Trebizond date.**

From Blidah, Algeria. Received through Mr. W. T. Swingle, March, 1899.

Considered to be the best stock on which to graft Japanese persimmons. The roots spread horizontally, and there is no such pronounced tap root as has the American persimmon (*Diospyros virginica*). Transplanting of the young trees is much facilitated by this mode of root growth.

**3329. PHOENIX DACTYLIFERA.****Date.**

From Blidah, Algeria. Purchased in the Arab market. Received through Mr. W. T. Swingle, March, 1899.

*Dehlt el Beida.* A large date; not so sweet as M'Kentichi, the other common dry date. (See No. 3202.)

**3330. ACACIA HORRIDA(?)****Acacia.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

This South African shrub, which has numerous long white thorns, is often used for hedges in North Africa. It is the "Doorboom" of the Dutch settlers in South Africa, and is said to grow well in California.

**3330a. ACACIA EBURNEA OR A. HORRIDA.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

**3331. PELARGONIUM CAPITATUM.****Geranium.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria. Received through Mr. W. T. Swingle, March, 1899.

This is the "*Geranium rosat*" of the perfumery industry. It is, according to Dr. Trabut, a sterile hybrid of *P. radula* and *P. odoratissimum*, and can only be propagated by slips or cuttings. The essence obtained from the leaves of this plant is used for adulterating attar of roses, the latter being valued at its weight in gold. It is sprinkled on the roses before they are distilled. The plants are set about 3 feet from each other, and are said to prefer rich clay soils. It is cut three times a year. From 700 to 1,500 pounds of leaves are said to be necessary to produce 1 pound of oil. The plantations last about ten years, and are said to yield a net profit of about \$75 per acre.

**3332. CATHA EDULIS.****Kât.**

From Algeria. Received through Mr. W. T. Swingle, March, 1899.

"A shrub or small tree which is native from southern Africa to Arabia. The slopes of Mount Saber are terraced and devoted to the culture of this shrub. It is said to be a much more profitable culture in Yaman, Afghanistan, than that of coffee. It is used by everybody and is expensive. If the best quality is consumed, it is easy to eat a dollar's worth per day. The leaves are the part eaten. The 3-year-old plants are first defoliated and only a few buds left on the twigs. From these, bushy young shoots are gathered and sold as *Kât mombarréh*. The following year leaves of an inferior quality are produced, called *Kât methani*. The trees are then left three years before being again defoliated, and then treated as before mentioned. Buds and young leaves are eaten without any preparation. Paul Emile Boutta, who traveled in Arabia in about 1835, says these leaves produce a slight exudation which the inhabitants like very much. I myself have found its effect to be very agreeable. According to Boutta the leaves are picked from it and sent wrapped up in banana leaves as far as Mocha. According to some authors, the dried leaves are also used by the Arabs, being either chewed or prepared like tea. It is not impossible that this plant may some time come into use among European peoples, since it is esteemed by the Arabs even more than coffee." (*Swingle.*)

**3333. STIPA TENACISSIMA.****Esparto.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

"This grass, called Halfa by the Arabs, and Esparto by the Spaniards, grows on the arid and high plateaus of northern Africa and to some extent in Spain and southern France. It is extensively collected for use in making high grade book paper in England. The leaves are 18 inches to 2 feet long, wiry, and almost cylindrical. They have the peculiarity of breaking off at the base where they articulate with the sheath. This enables the collectors to grasp the bundle of leaves and detach them from the plant by exerting a steady pull. These leaves are then grouped according to their color and length, tied in bundles, and exported. Much esparto is used in North Africa for the manufacture of cordage and baskets, while a small amount of the very best quality is shipped to Italy and Austria for use in manufacturing cigars, a bit of the leaf being placed in the middle of each cigar to facilitate manufacture. This plant grows at high altitudes in Algeria where the winters are cold and where it is exceedingly dry in summer. About a million dollars' worth of esparto is exported from Algeria annually. In 1885 the exports from Algeria amounted to 95,000 tons; from Tripoli 62,000 tons; from Spain 44,000; from Tunis 20,000; from Morocco 3,000. It is estimated that out of 225,000 tons a year, considered to be the average amount exported, 210,000 tons are used for making paper. About 200,000 of the 225,000 tons are consumed in England. In Spain this grass has been cultivated for many years. If grown from seed, the latter are collected from May to July, according to the locality, and are sown in September. Care must be taken to collect the heads as soon as they are ripe, otherwise the seeds are carried away by the wind. It takes ten years for the plant to become large enough to yield a quantity of leaves sufficient to repay the labor of gathering. The more common method of planting is to divide the tufts into four or more pieces, which are planted in September. The leaves of such plants are harvested within seven or eight years after planting. An acre contains from 1,200 to 2,000 tufts and should yield from 500 to 1,000 pounds of dry leaves. It is not impossible that the esparto grass may be grown profitably in some parts of the Southwest. It is probable, however, that the hand labor of gathering leaves will seriously interfere with the profitableness of such industry. It would probably succeed as far as climate is concerned throughout western Texas, New Mexico, and southern California. It should be noted that the esparto grass does not succeed on alkali soils. It prefers the drier elevations to the more moist and more alkaline depressions. *Albardine* or *Sennerah* (No. 3334), on the other hand, is able to withstand alkali, and grows in the depressions in preference to the elevations. The esparto grass yields a fresh crop of leaves every year." (*Swingle.*)

**3334. LYGEUM SPARTUM.****Albardine.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

Also called *Sennerah*. Albardine grows in depressions, while Halfa (No. 3333) grows on the hilltops. This grass, often confused in books with esparto grass, is totally different from it, and is never confounded by those who collect or use the leaves. The leaves do not contain nearly as much fiber as do those of esparto. In paper making the waste is greater in using albardine, but the fibers are said to be fully equal to those of the esparto. The leaves sell for the same price. While the esparto grows all over the high plateaux of North Africa attaining an altitude of 6,000 feet, the albardine does not grow at above 3,000 feet. As mentioned under No. 3333, this grass is able to withstand considerable amounts of alkali. It is easily propagated from the seed. It is a perennial, and like the esparto furnishes new crops of leaves every year.

**3335. POPULUS ALBA INTEGRIFOLIA.****Poplar.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A most valuable native poplar grown from cuttings in Algeria. Should be tested in the Southwest in comparison with the poplars already grown there along the irrigating ditches. (See Nos. 3344 and 2700.)

**3336. ASPARAGUS ALBUS.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

An edible wild species. The shoots quickly become bitter after being gathered.  
(See No. 3319.)

**3337. RUBUS ATLANTICUS.****Raspberry.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A native of Algeria. This species was found by Dr. Trabut growing wild in the mountains. The fruit is edible.

**3338. PANICUM PARLATOREI.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A perennial grass from the Sahara desert. Possibly of value for forage in arid regions.

**3339. SACCHARUM SPONTANEUM.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A wild grass from the savannas of tropical Africa.

**3340. PYRUS LONGIPES.****Pear.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A rare Algerian wild pear of considerable botanical interest. It forms a tall tree, having some spiny branches. The fruits are small, being about the size of a cherry, and have a stalk three times their length.

**3341. BESCHORNERIA.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

An ornamental plant resembling an agave, or century plant, but more graceful. It is probably a native of Mexico.

**3342. EUPHORBIA ABYSSINICA.****Spurge.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A large ornamental species native in Abyssinia.

**3343. TAMARIX ARTICULATA.****Tamarix.**

From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
Received through Mr. W. T. Swingle, March, 1899.

A valuable tree, growing to great size even in the desert. This tree, called *Ethel* by the Arabs, is the most important and largest tree in the interior of the Sahara. It frequently attains 6 feet in circumference and sometimes as much as 17 feet. It is used, especially by the Touaregs, for lumber, boards, furniture, utensils, and for constructing saddle-trees. One species of the Tamarix has already escaped and grows in a half wild condition in Arizona, and it is probable that this species would thrive in the warmer desert regions all through the Southwest.

- 3344. POPULUS EUPIRATICA.** **Poplar.**  
 From Algeria. Donated by Dr. Trabut, Government Botanist of Algeria.  
 Received through Mr. W. T. Swingle, March, 1899.  
 A drought resistant poplar from the semiarid Euphrates valley. It also grows in Morocco. This is a medium-sized poplar, with spreading branches. The leaves vary in shape from nearly round to almost linear. It has been said of this tree that it presents a very curious appearance, having two sorts of branches. One would never believe that both belonged to the same tree unless one saw them connected. The young shoots have leaves like willow, while the older branches have leaves like aspen. It should be tested along with No. 3335 for planting along irrigating ditches in the Southwest. This tree was introduced into Louisiana a number of years ago.
- 3345. GOSSYPIUM BARBADENSE.** **Egyptian cotton.**  
 Donated by Mr. Alfred Dale, Mansourah, Egypt. Received, 1899.  
*Ajji.* From the estate of Prince Kamildo, Pasha Kamil.
- 3346. GOSSYPIUM BARBADENSE.** **Egyptian cotton.**  
 Donated by Mr. Alfred Dale, Mansourah, Egypt. Received, 1899.  
*Abbasi.* From the estate of Prince Hussein.
- 3347. GOSSYPIUM BARBADENSE.** **Egyptian cotton.**  
 Donated by Mr. Alfred Dale, Mansourah, Egypt. Received, 1899.  
*Ashmouni.* From upper Egypt.
- 3348. CUPRESSUS SEMPERVIRENS HORIZONTALIS.** **Cypress.**  
 From Algeria. Received through Mr. W. T. Swingle, March, 1899.  
 This form of the cypress sometimes called *C. horizontalis* is very much employed in Algeria in forming wind brakes and hedges about orange groves and other plantations of fruit trees. The wind brake thus formed is very dense and protects the oranges from the cold winds blowing in from the sea in winter. The pyramidal form of this species, No. 3414, is also used for the same purpose.
- 3349. ACACIA FARNESIANA.** **Cassie.**  
 From Algeria. Received through Mr. W. T. Swingle, March, 1899.  
 This spiny shrub or small tree, native of tropical America, Mexico, and the Southwestern United States, produces, all winter long, little heads of very fragrant yellow flowers much employed in perfumery. At Boufarik, Algeria, the perfumery factory is said to use over 20 tons a year of these flowers. About 9 cents a pound is paid for collecting them. It is said to form thickets in southern California, and does well at Santa Barbara and San Francisco. (See No. 3528.)
- 3350. PHOENIX DACTYLIFERA.** **Date.**  
 From Algeria. Donated by Mr. Yahia Ben Kassem.  
*El Horra.* A variety of dry date commonly grown in the Zibon region of the northern Sahara. Samples of fruit.
- 3351. PHOENIX DACTYLIFERA.** **Date.**  
 From Algeria. Received through Mr. W. T. Swingle, March, 1899.  
*Ghars* or *R'hars.* A variety much esteemed by the Arabs. It will keep for years. The Arabs pack the dates in goat or kid skins. These dates were bought in the Arab market at Algiers at a price of 45 centimes per kilo, or about 4 cents a pound. (See No. 3203.)

**3352. JUBAEA SPECTABILIS.****Palm.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild, June, 1899.

"This is the palm from which the palm honey of Chile is made. This sirup is the most delicious of any I have ever tasted. It is superior, in my estimation, to maple sirup, being milder and not cloying the palate as the latter does. In forty years the trees will be ready to tap for the sap from which this sirup is made. It is a very ornamental palm, but a slow grower. It thrives on poor, very dry soil, and requires very little water. The palm-honey business here has paid very well indeed. Hitherto the palms have been felled, but they can be tapped, I am assured, just as maple trees are tapped." (*D. G. Fairchild.*)

**3353. CRYPTOCARYA PEUMUS.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 154), July, 1899.

"One of the handsomest shade trees of Chile. Recommended as an avenue tree. Grows well on stony, dry soil. The fruits, as large as small plums, are cooked like chestnuts and eaten. They have an oily, peculiar taste, disagreeable to some, but highly esteemed by others. The tree will stand light frosts and should be placed in California, Arizona, and Florida." (*D. G. Fairchild.*)

**3354. TRICUSPIDARIA DEPENDENS.****Patagua.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 153), July, 1899.

"A large, ornamental shade tree, suitable for avenues, with large, bell-shaped flowers. Hardy in Santiago, where light frosts occur; requires a wet soil; is called 'Patagua' in Chile." (*D. G. Fairchild.*) For Florida and California.

**3355. CHUSQUEA QUILA.****Bamboo.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 150), July, 1899.

"The so-called 'Quila' of Chile, a species of bamboo, whose solid stems are used in furniture making and whose leaves furnish the principal fodder for large herds of cattle fattened in southern Chile. The canes grow often 30 feet high in good soil, and branch abundantly. In dry soil they are stunted. In both forms the leaves are greedily eaten by cattle. Some varieties coming from the Cordillera are hardy. These are from Santiago, where it sometimes snows and is often below freezing.

"The plants should be started in good, rich bottom land in Florida and southern California. It is a plant suited to waste land, as its forage is of too low a quality to recommend it for general culture. Its tendency to spread and become a nuisance is not considered objectionable here. In dry soil the leaves become spiny and it is doubtful if the cattle will take to it at first." (*D. G. Fairchild.*)

**3356. OPUNTIA STRICTA.****Airampo.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 160), July, 1899.

"The *Airampo* of Peru. Brought by Mr. J. Soehrens from near Arequipa, on Lake Titiaca. Hardy to frost; grows in very dry region; 3 feet high; bushy habit; no long spines; flowers yellow; fruit the size of an English walnut. Flesh wine-red acid, used for coloring wines and for making refreshing drinks. Will live in Arizona. No care in planting is required. It thrives best on dry, stony soils." (*D. G. Fairchild.*)

**3357. ARISTOTELIA MACQUI.****Maqui.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 170), July, 1899.

The *Maqui* of commerce, with which most of the Chilean red wines and some French wines are colored. The seeds should be started in a seed bed. The plant is a rapidly growing shrub, with handsome foliage. Will stand slight frosts and poor

soil. The bark is of great value for binding twine and grafting purposes. It belongs to the family *Elaeocarpaceae*; by some it has been referred to the *Tiliaceae* or basswood family.

**3358. CUCURBITA MAXIMA.**

**Squash.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 186), June, 1899.

*Habits.* The native squashes are quite mixed as to varieties. Many sorts are of superior quality, often being used for fritters, etc. The following numbers, 3369 to 3372, are different varieties without native names.

**3359. OPUNTIA GEISSEL.**

**Prickly pear.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 169), July, 1899.

"It often does not rain for a whole year where this plant grows, at an altitude of 6,000 to 10,000 feet. The plants are about 6 feet high; flowers yellow; fruit 2 to 4 inches long, oval, yellow when ripe; the flesh wine colored; very juicy; used for lemonades, being quite sour. Plants very productive, habit bushy; fruits closely resemble the joints. Grows where heavy snows fall in winter. A new species, not yet known in Europe. For Arizona and California." (*D. G. Fairchild.*)

**3360. QUILLAJA SAPONARIA.**

**Soapbark.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 166), July, 1899.

"A rosaceous tree, native of Chile. The bark is used as a soap for washing woollens. It is unsuited for cottons, as it turns them yellow. In 1895, the export of the Quillaja or 'Casaca de Quillaja,' as it is called, amounted to 53,478 pesos; in 1896, 43,996 pesos worth were exported. The average price is 5 Chilean centavos per kilo (2.2 pounds) of bark.

"The inner bark contains a saponaceous substance. The bark is broken into pieces, dropped in boiling water and stirred, when it gives up its soap. This soapy water after cooling is rubbed on the grease spot with a brush. It is not necessary to wash out the Quillaja afterwards, as it leaves no spot. This bark is the favorite grease remover in Chile, both among Chileans and Europeans. As a hair wash it is said to be excellent. It is highly prized by wool manufacturers. Of late years the demand has become so great that the trees are being rapidly destroyed. This plant is worthy serious attention. Small forests of soap bark should be started in southern California. The seed must be sown in seed beds, or better, in shallow boxes. It grows rapidly." (*D. G. Fairchild.*)

**3361. GREIGIA SPHACELATA.**

**Chupon.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 168), June, 1899.

"Leaves used in the manufacture of *Chupagos*, or native hats. Bases of flowers edible, sweet, and very juicy. A species little known outside of botanic gardens in Europe. Flowers showy. Valuable for breeding purposes. Seeds should be sown and cared for just like those of pineapple." (*D. G. Fairchild.*)

**3362. GOMORTIGA NITIDA.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 167), July, 1899.

"A laurel, with fruits as large as a plum, used in Chile for preserves. The nuts must be soaked for several weeks before planting, as they germinate with difficulty. Should be planted in Florida and Louisiana. A good soil is necessary. Light frosts do not injure it." (*D. G. Fairchild.*)

**3363 to 3366. CUCUMIS MELO.**

**Muskmelon.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (Nos. 182 to 185), June, 1899.

"The following four numbers were grown by Mr. Izquierdo, who has tested various European and American sorts of muskmelons here and found the above sorts of

Chilean origination better. They are very large and uninviting looking, squash-like in appearance. Many are deliciously sweet." (*D. G. Fairchild.*)

**3363.** Selected, but not named. (L. & F., No. 185.)

**3364.** *Escríta.* (L. & F., No. 182.)

**3365.** *Tuna.* (L. & F., No. 183.)

**3366.** *Muscatel.* (L. & F., No. 184.)

**3367. CITRULLUS VULGARIS.**

**Watermelon.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 180), July, 1899.

*Pepa negra* (black-seeded). "The watermelons of Chile are said to be better than those of North America. Mr. S. Izquierdo tested in Santiago 30 varieties of the North American and European sorts of melons and found them inferior to the Chilean." (*D. G. Fairchild.*)

**3368. CITRULLUS VULGARIS.**

**Watermelon.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 181), July, 1899.

*Pepa mija*, or light-seeded. The light-seeded melons are considered the best in Chile. (See No. 3367.)

**3369. CUCURBITA MAXIMA.**

**Squash.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 188), June, 1899. (See No. 3358.)

**3370. CUCURBITA MAXIMA.**

**Squash.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 190), June, 1899. (See No. 3358.)

**3371. CUCURBITA MAXIMA.**

**Squash.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 191), June, 1899. (See No. 3358.)

**3372. CUCURBITA MAXIMA.**

**Squash.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 189), June, 1899. (See No. 3358.)

**3373. CITRULLUS VULGARIS.**

**Watermelon.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 192), July, 1899.

Selected by J. Soehrens for its superior sweetness. No varietal name is known.

**3374. CAESALPINIA BREVIFOLIA.**

**Algarobillo.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 165), July, 1899.

"The so-called *Algarobillo* of commerce, a desert shrub from the region about Huasco, growing where no rains fall, often for a whole year. The shrub produces an abundance of small pods which are remarkably rich in tannin. The industry of their export has been a very profitable one in Huasco, and the proposition has been made of cultivating the shrub in other sections of Chile. At present only wild plants furnish the pods of commerce. This is a shrub eminently suited to Californian desert conditions, and should be tested in Arizona as well. It may be expected to bear fruit in four years. The seed should be taken from the pods and carefully sown in the open ground, covered with about three-fourths inch of soil. Care should be exercised to give them only a little water. The plants could be potted and transplanted, but the better way would be to try a few in the open ground. This is a most promising plant for desert plantings (providing the market for the tanning material has not disappeared), and is worthy serious attention. The amount of tannin borne by the pods is very great, and it is said that they contain a valuable coloring matter as well." (*D. G. Fairchild.*)

**3375 to 3383. PHASEOLUS VULGARIS.****Bean.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 172), July, 1899.

"The Chilean beans are the best South American frijoles. They are certainly superior to many of our own, and ought to be tested in comparison with them." They are as follows:

- 3375. *Burros.*
- 3376. *Gansos.*
- 3377. *Mantecas.*
- 3378. *Caballeros.*
- 3379. *Bayos grandes.*
- 3380. *Bayos chicos.*
- 3381. *Cascarones.*
- 3382. *Triguitos.*
- 3383. *Huerteros.*

**3384. JUGLANS NIGRA BOLIVIENSIS.****Walnut.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 163), July, 1899.

"A shade and nut-bearing tree often planted in Santiago. Thought to be quite a different species from the North American black walnut, and the same as the walnut sold in Peru as coming from Bolivia. For the Southern States." (*D. G. Fairchild.*)

**3385. BELOTIA MIERSII.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 164), July, 1899.

See No. 4392 for description.

**3386. BERBERIS ACTINACANTHA.****Barberry.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 158), July, 1899.

"A handsome Chilean barberry. All Chilean species have showy blue berries. Suitable for California especially." (*D. G. Fairchild.*)

**3387. POPULUS PYRAMIDALIS SEMPERVIRENS.****Poplar.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 161), July, 1899.

An evergreen lombardy poplar which originated in Chile. It looks like any other variety, except that it does not shed its leaves in the winter. Desirable for any of the frost-free regions of Florida, California, and Arizona.

**3388. NICOTIANA TABACUM.****Tobacco.**

From Florida. Received July, 1899.

The first generation from imported Sumatra seed.

**3389. ZEA MAYS.****Corn.**

From Virginia. Grown by Mr. Anatol, Rockcastle, Va. Received, 1899.

*Cook's Prolific.*

**3390. PERSEA GRATISSIMA.****Avocado pear.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 193), June, 1899.

"Said to be very hardy, standing a temperature of  $-5^{\circ}$  C. Even snows have not injured it. By some it is said to be indigenous to Chile, but it is certain that until 1874 it was quite unknown as a fruit here. This is a black-fruited, hardy variety. Some of the fruits are stringy, while others are of fine quality. Scions of this variety sell in France for from \$1 to \$1.25 each." (*D. G. Fairchild.*)



**3391. QUILLAJA SAPONARIA.****Soapbark.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 156), July, 1899.

For description see No. 3360.

**3392. BELOTIA MIERSII.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 162), July, 1899.

"A very beautiful shade tree for avenues, with shining dark-green leaves. Requires a good soil. Not a desert plant. Hardy in Santiago, where the temperature falls to  $-5^{\circ}$  C. Should be planted in California and Florida." (*D. G. Fairchild.*) (See No. 3385.)

**3393. PERSEA LINGUE.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 152), July, 1899.

"A rapidly growing, frost-hardy street tree of great beauty. Suited to moist, even-temperate climates, and good strong soils. The bark is used for tanning purposes and said to be of superior quality. Large, spiny, dark leaves and clean, green-gray bark." (*D. G. Fairchild.*) For California, Florida, and Louisiana.

**3394. MAYTENUS BOARIA.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 155), July, 1899.

"An ornamental, Celastraceous tree with weeping habit, small gray-green leaves, and orange fruits. Resembles the pepper tree (*Schinus molle*) superficially. It thrives well as far north as San Francisco and should be exploited as a shade tree for dry regions. The young branches are much relished by cattle." (*D. G. Fairchild.*)

**3395. BERBERIS BUXIFOLIA.****Barberry.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 159), July, 1899.

"A very pretty Chilean species of barberry, suitable for California. The berries are blue instead of red." (*D. G. Fairchild.*)

**3396. EUGENIA APICULATA.**

From Santiago, Chile. Received through Messrs. Lathrop and Fairchild (No. 157), July, 1899.

"A shrub bearing small fruits (one-fifth inch in diameter) of a refreshing taste. Suitable for any strong soil. Stands slight frosts. Should be planted in Florida and southern California." (*D. G. Fairchild.*)

**3397.**

From Peru. Received through Messrs. Lathrop and Fairchild, July, 1899.

A grass, without name or data.

**3398.**

From Peru. Received through Messrs. Lathrop and Fairchild, 1899. Donated by Mr. Edouardo Fowkes, Païta, Peru.

A grass, without name or data.

**3399. MEDICAGO SATIVA.****Alfalfa.**

From Peru. Received through Messrs. Lathrop and Fairchild, July, 1899.

**3400. CERATONIA SILIQUA.****Carob bean.**

From Peru. Received through Messrs. Lathrop and Fairchild, July, 1899.

Pods, without data.



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