U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 208.

B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1910:

INVENTORY No. 23; Nos. 27481 TO 28324.

ISSUED APRIL 29, 1911.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1911.

U. S. DEPARTMENT OF AGRICULTURE.
BUREAU OF PLANT INDUSTRY—BULLETIN NO. 208.
B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1910:

INVENTORY No. 23; Nos. 27481 TO 28324.

ISSUED APRIL 29, 1911.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1911.

BUREAU OF PLANT INDUSTRY.

Chief of Bureau, BEVERLY T. GALLOWAY.
Assistant Chief of Bureau, WILLIAM A. TAYLOR
Editor, J. E. ROCKWELL.
Chief Clerk, JAMES E. JONES.

FOREIGN SEED AND PLANT INTRODUCTION.

SCIENTIFIC STAFF.

David Fairchild, *Agricultural Explorer in Charge.*

P. H. Dorsett and Peter Bisset, *Expert Plant Introducers.*
George W. Oliver, *Expert Propagator.*
Frank N. Meyer, *Agricultural Explorer.*
Stephen C. Stuntz, *Botanical Assistant.*
H. C. Skeels and R. A. Young, *Scientific Assistants.*
Henry F. Schultz, *Agent, in Charge of Subtropical Introductions.*
E. C. Green, *Pomologist, in Charge of South Texas Plant Introduction Garden, Brownsville, Tex.*
Robert L. Beagles, *Agent, Acting in Charge of Plant Introduction Garden, Chico, Cal.*
Edward Simmonds, *Gardener, in Charge of Subtropical Plant Introduction Garden, Miami, Fla.*
John M. Rankin, *Expert, in Charge of Yarrow Plant Introduction Garden, Rockville, Md.*
Edward Goucher, John H. Allison, W. H. F. Gomme, and Roy F. Mann, *Experts.*

LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., January 5, 1911.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 208 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from April 1 to June 30, 1910: Inventory No. 23, Nos. 27481 to 28324."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

WM. A. TAYLOR,
Acting Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

CONTENTS.

B. P. I.—541.

SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1910: INVENTORY NO. 23; NOS. 27481 TO 28324.

INTRODUCTORY STATEMENT.

This quarterly inventory, covering the period from April 1 to June 30, 1910, contains the collections of only one agricultural explorer in the field, Mr. Frank N. Meyer, whose collecting during this period was confined to the mountains of the Caucasus, where he went pending permission from the Russian authorities to enter Chinese Turkestan.

Among the 154 introductions which he found worthy of sending in are the Erivan alfalfa (No. 27980), which the agriculturists in that region have found to be longer lived than the Turkestan variety; a perennial Medicago with large leaves, growing at an altitude of 4,000 feet, which promises to be of use in breeding new strains of hardy alfalfa; a collection of hard-fleshed table grapes, some of which have unusual keeping and shipping qualities (Nos. 27538–27540 and 27620–27650); a dry-land Caucasian beech (No. 27662); scions from wild trees of a shrubby species of pear for use as a dwarfing stock (*Pyrus nivalis elaeagrifolia*, No. 27670); a collection of Caucasian peaches (Nos. 27614–27619); and scions of the true Paradise apple (*Malus pumila*, No. 27968) cut from wild trees, for experiments with the crown gall, which was found by Mr. Meyer very prevalent in the French nurseries of dwarfed apples from which importations are made to America.

Of the plants sent in by correspondents, those experimenting with the different materials used in paper making will be interested in the Japanese species *Abelmoschus manihot* (No. 27493), the mucilaginous juice of which is used by the paper makers of Japan as a size for their handmade papers. A new and delicious fruit introduction by Mr. Walter Fischer, of Para, which he thinks will live in the Everglades, is the Rollinia (No. 27579), which grows on the lowlands along the mouth of the Amazon and occurs in Paraguay (Nos. 27609 and 27797). The Korean chestnut (No. 27587) will be of interest to those who are hunting for resistant species which are immune to the chestnut-tree disease, which is doing such widespread damage. Forage-plant specialists of the New England States will probably wish to test

the three selected strains of Norwegian clover, the Molstad, Toten, and Hvinden's, from Roikenvik (Nos. 27600, 27601, and 27602). Fiber experts in Porto Rico, the Philippines, and Hawaii should have their attention called to the Furcraea, from Costa Rica (No. 27777), which is said to have a fiber that is whiter than sisal and is considered of enough importance to be planted on a large scale in Central America. The growing use, especially on the Pacific coast, of the winter muskmelon, or cassaba, makes the introduction of a series of these winter-ripening melons (Nos. 27779–27788) from the Greek islands of Zante and Cephalonia of interest to the melon growers of the Southwest. Although maraschino as a liqueur is well known to Americans, the cherry from which it is made, which is grown on a few small islands in the Adriatic, seems with this introduction to be brought for the first time into America (No. 27791). To those in the Philippines, Hawaii, and Porto Rico who are engaged in the cultivation of rubber trees the introduction of the *Sapium jenmani* of Demerara (No. 27873), from which one of the highest priced rubbers in the world is obtained, can not fail to be of interest. The paint manufacturers, it is learned, import large quantities of euphorbium rosin from Morocco for use in the manufacture of rustless coatings for steel structures, and the introduction of the seed of the euphorbiaceous plant (No. 27955) from the mountain slopes of that country may lead to the creation of a home supply of this material. Seeds have been obtained of the nan mu tree of the Yangtze Valley (No. 28128), which furnishes the most famous of Chinese woods, used in the building of the imperial palaces. As this tree is said to be in danger of extinction and as it will probably grow in our Southern States, the introduction of seeds of it at this time is of special importance. Since the introduction in 1853, from France, of the Chinese sorgo, there seems to have been no reintroduction of that particular strain until this year, when seed of this identical variety (No. 28024) was obtained by correspondence from Tsungming Island, at the mouth of the Yangtze.

Guava cultivation in Florida and Porto Rico for the production of guava jelly has reached a stage when the introduction of a close relative of the guava from Para (*Britoa acida*, No. 28061) will interest a considerable number of people because of its acid fruits. The call on the part of the California growers who supply table grapes to the eastern market for varieties that will better withstand shipment has become insistent and special efforts are being made to meet the demand. A collection of 13 varieties of table grapes from Servia is of interest in this connection (Nos. 27685–27697). For those breeders of the oriental and American persimmon who believe that the cultivation of this fruit plant can be developed into a great orchard industry, a search is being made after all the species of Diospyros which it is

thought can contribute to the production of better persimmons, and this inventory contains species from Mauritius, Bengal, the Caucasus, and Mexico.

The total number of introductions listed, 844, is an average of over 280 a month, or 10 introductions each official day, which is more than 16 per cent above the average for any previous period, notwithstanding the fact that only one explorer has been in the field during this time. This may be taken as an indication of the increase in requests from experimenters for new material and in foreign correspondence which leads to the discovery of valuable foreign plants not heretofore introduced.

Special attention is called to the increasing quantity of technical botanical matter included, particularly the geographic distribution of the rarer species. For this, as well as for the determination of the species, Mr. H. C. Skeels, working under the supervision of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations, is responsible. Miss Mary A. Austin, as heretofore, has had charge of the preparation of the inventory.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., December 17, 1910.

INVENTORY.

27481. MEDICAGO SATIVA L. **Alfalfa.**

From Westbrook, Minn. Obtained from Mr. Gustave Rasche through Mr. Charles J. Brand. Received April 1, 1910.

"This sample of *Grimm* was produced in the fifteenth year from *Grimm* seed taken to Westbrook from Waconia, Carver County, in 1893. The seed crop of 1909 is the tenth taken from the original planting. Mr. Rasche originally seeded 1 acre, using 15 pounds of seed. In 15 years he has sold about 8 bushels of seed and increased his own acreage to 15. In the severe test at Dickinson, N. Dak., during the winter of 1908–9, this race, grown in rows 3 feet apart, proved to be one of the very hardiest." (*Brand.*)

27482. JUGLANS NIGRA L. **Black walnut.**

From Fresno, Cal. Sent by Mr. George C. Roeding, at the request of Mr. William A. Taylor, to the Plant Introduction Garden, Chico, Cal. Received April 1, 1910.

"I would say that the 'Peanut' black walnut is not a hybrid form, but so far as can be determined is merely an unusual form of the native black walnut, *Juglans nigra*.

"The original tree is a seedling, now 70 or 80 years old, on the land of Mr. H. C. Kline, South Salem, Ohio. The attention of our Mr. W. N. Irwin was called to this tree some years ago by the fact that a large proportion, though not all, of the nuts were very slender and pyriform, quite unlike the usual form of the nut of this species. The kernels in these pyriform nuts are almost cylindrical, only one lobe of the kernel filling and maturing. It is not positively known whether these peculiarly formed nuts come from certain branches of the tree or not. The trees sent to Chico were propagated from scions cut from the original tree two years ago. I quote the following characterization of the variety from the report on nut culture published by the Division of Pomology, in 1896: '*Peanut* (pl. 7, fig. 2).—Received from Mr. W. N. Irwin, South Salem, Ohio. It is a rather small, pyriform nut. Its name was given because of the resemblance of its kernel to that of the peanut. The shell is thin and is easily cracked, while the kernel, which is in the larger end of the nut, comes out entire. The peculiar form is apparently due to some defect in the pistil, as but one side of the nut 'fills' and matures. A large proportion, though not all, of the fruit on the tree is of this form each year. The kernel is white and of delicate flavor.'" (*Taylor.*)

27483. ANONA CHERIMOLA Miller. **Cherimoya.**

From Santa Barbara, Cal. Presented by Dr. F. Franceschi. Received April 6, 1910.

"Fruit from the first tree planted in Santa Barbara some 40 years ago. The fruit when received weighed 13½ ounces; its greatest diameter was 4½ inches, and its least diameter was 3½ inches." (*Franceschi and Dorsett.*)

27484. DIOSPYROS TUPRU Hamilton.

From Lal Bagh, Bangalore, Mysore, India. Presented by Mr. G. H. Krumbiegel, economic botanist, superintendent of the Government Botanic Gardens. Received April 18, 1910.

Distribution.—From the western Himalayas to the plains of Behar in the northwestern part of India.

27485. RHEEDIA EDULIS (Seem.) Planch. and Triana. **Sastra.**

From the Province of Chiriqui, Panama. Procured by the provincial engineer, through Hon. Joseph E. Le Fevre, Secretary of Fomento, Panama City, at the request of Mr. H. F. Schultz. Received April 18, 1910.

"A shrublike tree producing an edible fruit, about 1 to 1½ inches in diameter, which the natives describe as a round berry. It has reddish, smooth skin and a pleasantly acid taste. It is not cultivated, but seems to be well known to the natives. I am informed that the fruit is produced in the dry season, January and February. The tree sends out a long tap root, and this fact discredits the statement made to me by natives that the tree is often found on dry places. 'Dry' places in this country are dry, there is no mistake about this, and if on wet locations, like those on which I found the only three trees I saw, it sends its long tap root down to where the ground is water-soaked every day in the year, it becomes very apparent that this long root is not given the tree in order to hold its own against 'northers' in exposed positions, but merely to go down to a perpetual supply of fresh water." (*Schultz.*)

Distribution.—In dense forests in the vicinity of Remedios, Province of Veragua, Panama. (Seeds.)

27486. CARICA PAPAYA L. **Papaya.**

From New Orleans, La. Presented by Mr. Sam Marshall, superintendent, Audubon Park. Received April 14, 1910.

"These fruits can be pulled as soon as they show a few yellow spots, and are house ripened. They are very much like a muskmelon, being eaten with salt and pepper. This seed was produced by seedling plants that are 2 years old. They are rapid growers, but will not stand any degree of frost. The fruit grows in clusters and is round to oblong in shape. I think they would stand transportation. Have been told they are often to be had in our 'French market'." (*Marshall.*)

27487 to 27489. SOLANUM sp. **Potato.**

From Reading, England. Presented by Messrs. Sutton & Sons. Received April 1, 1910.

Tubers of seed potatoes as follows:

27487. The Congo.
27488. Small white fir apple.
27489. Large red fir apple.

27490. BAMBOS ARUNDINACEA Retz. **Bamboo.**

From Cochin, British India. Presented by Mr. Jean Houzeau de Lehaie, St. Symphorien, Belgium. Received April 2, 1910.

"This species is easily propagated by cuttings by the method described by Rivière.

"Regarding the climatic conditions which it demands, I may say that it has only been sent to Algeria and to Sukhum-Kale, in the Caucasus. It seems to develop best at Sukhum-Kale, though it is colder there than at Algiers. Why, I have no idea. If I am not mistaken, the lowest temperatures met with at Sukhum-Kale are between −3° and −5° C.; temperatures taken with the thermometer sheltered.

27490—Continued.

"The *B. spinosa* (=*B. arundinacea*) grows (when it is vigorous) in the manner best adapted to protect its young stems from herbivora, Rivière says. The stems branch out from the base, and their spiny branches, overhanging to the ground, prevent animals from approaching the trunk and eating the tender young stems. This makes it difficult to establish hedges, for one has to spare the lateral branches from the base in order to protect the young shoots of the following year, and under these conditions transplantation is painful, or else it is necessary to protect the plants during their first years, which is not practicable." (*De Lehaie.*) (Seed.)

27491 and 27492. PUERARIA spp.

From Darjiling, Bengal, British India. Presented by Mr. G. H. Cave, curator Lloyd Botanic Garden. Received April 6, 1910.

Seeds of the following:

27491. PUERARIA PHASEOLOIDES (Roxb.) Benth.

Distribution.—Common in northern and eastern India, Malacca, and the southern part of China.

27492. PUERARIA sp.

27493. ABELMOSCHUS MANIHOT (L.) Medic.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. at the request of Mr. Charles J. Brand. Received April 6, 1910.

"The root of this plant is used by the Japanese as a size for their handmade papers, which are prepared from the inner bark of *Edgeworthia gardneri* and several varieties of the paper mulberry. The root is macerated in water and added to the paper pulp." (*Fairchild.*)

"The mucilage is obtained from the roots of this plant as follows: Wash off the dirt, soak in fresh water for some hours, and crush them to pieces. The substance thus prepared should then be put in a linen bag and soaked again in water. When the material gets thoroughly soft, the juice comes out of the bag by manipulating in the vat in which pulp has been previously mixed to receive the paste. The bag should be squeezed now and then, as the mucilage does not come out by itself. The paper maker can judge whether sufficient mucilage is in the water or not by its glutinous consistency. This is the best mucilaginous plant extensively used in Japan." (*Yokohama Nursery Co.*) (Seed.)

Distribution.—Scattered throughout the Tropics; naturalized in the southern part of the United States from Florida to Texas.

27494. DIOSPYROS TESSELLARIA Poir.

From Reduit, Mauritius. Presented by Dr. B. Boname, director, Agricultural Station. Received April 6, 1910.

"A tree, or shrub, with alternate, oval, or ovate, glabrous leaves. Flowers densely clustered, sessile, arising from lateral nodules on the young branches. The fruit is edible and is globular or ellipsoidal in form. The wood is valuable." (*Extract from Hiern, Transactions Cambridge Philosophical Society, vol. 12, pt. 1, p. 176.*) (Seed.)

Distribution.—In the forests of the highest parts of the island of Mauritius. Probably produces the ebony of Mauritius; fruits edible.

27495 and 27496.

From Kingston, Jamaica. Presented by Mr. Aston W. Gardner, manager, The Tangley Fruit Co. Received April 7, 1910.

27495 and 27496—Continued.

Cuttings of the following:

27495. MANGIFERA INDICA L. **Mango.**

Mazagon. See No. 7042 for previous introduction.

27496. CITRUS DECUMANA (L.) Murr. **Pomelo.**

Seedless white variety.

27497. JUNIPERUS PACHYPHLOEA Torr.

Collected in the Alamo National Forest, New Mexico. Received through Mr. Raphael Zon, chief of silvics, U. S. Forest Service, April 6, 1910.

See Nos. 24621 and 24624 for previous introductions.

27498 to 27501. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Grown at Arlington Experimental Farm, Virginia, season of 1909. Numbered for convenience in recording distribution, April 14, 1910.

Seeds of the following. Notes by Prof. C. V. Piper:

27498. "Chromium green; late. Grown under temporary number 0867, from seed found in cowpea No. 23307, from Peking, China."

27499. "Straw yellow; very late. Grown under temporary number 0869, from Mr. W. W. Williams, Ingang, Fukien, China."

27500. "Straw yellow; very late. Grown under temporary number 0888, from Rev. J. M. W. Farnham, Shanghai, China."

27501. "Olive yellow; very late. Grown under temporary number 0889, from Rev. J. M. W. Farnham, Shanghai, China."

27502 to 27504. VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Coimbra, Portugal. Presented by the Director, Royal Botanic Garden. Received April 6, 1910.

Seeds of the following:

27502. Small black seeded

27503. Small tan seeded.

27504. Blackeye.

27505. JUNIPERUS PROCERA Hochst. **East African cedar.**

From British East Africa. Procured through Mr. Raphael Zon, chief of silvics, Forest Service, Washington, D. C. Received April 8, 1910.

"East African cedar occurs abundantly in all the drier forests in the mountains of British East Africa at altitudes of from 7,000 to 11,000 feet, and occasionally extending as scattered specimens as low as 5,500 feet. It occurs mainly on the western slopes of the mountains, in what is known as the Kenia Forest, but is entirely absent from the wet southeastern side of the mountains. It appears to attain larger dimensions than any other juniper and often has a tall, straight, mastlike trunk. The largest specimen on record is at an altitude of approximately 9,850 feet, and has a mean diameter of 12 feet 4 inches and contains about 1,546 cubic feet of timber, of which probably about one-third is unsound. The tree has a serviceable bole of 65 feet and a total height of about 110 feet. The trunk forks a short distance from the ground, very likely as the result of fire. The wood is of great value and is scarcely distinguishable from the typical cedar of the familiar lead pencil. It is wonderfully durable in contact with the soil, and old trunks of great age in all stages of slow decay are found throughout the forest. Unfortunately, standing trees are very liable to decay, which detracts considerably from the value of the tree.

27505—Continued.

"The climate of the Kenia Forest varies from wet to very wet. On the south slope the rainfall is estimated at from 80 to 120 inches a year, and on the southeastern side the forest never becomes sufficiently dry to burn. On the western side, where the East African cedar grows, the rainfall is estimated at from 50 to 90 inches a year, the cedar usually being situated in the drier portions of the forest. The temperature, like that of most tropical countries, is comparatively equable with but little difference between mean summer and mean winter temperatures. At altitudes of 6,000 to 8,000 feet the extremes of temperature rarely go below 45° or above 70° F. The region is described as having a typically pleasant and invigorating extratropical climate. There is a rainy season from March to May, during which time it rains heavily, while during the drier season, from December to February, there are usually only occasional showers." (*Compiled from Colonial Report No. 41, East African Protectorate, 1907, by D. E. Hutchins, and the Report on the Forests of British East Africa, 1909, by D. E. Hutchins.*)

"Owing to the climatic conditions under which this tree grows it is doubtful whether it will succeed in this country, except, possibly, in Florida." (*Zon.*)

27506 to 27509. PHASEOLUS LUNATUS L. **Bean.**

From Tamatave, Madagascar. Procured by Mr. William J. Morse, from the Bureau of Manufactures, Department of Commerce and Labor, April 2, 1910.

Seeds of the following:

27506. White.

27507. White with red speck on hilum.

27508. White streaked with red.

27509. White speckled with red.

27510. GARCINIA MANGOSTANA L. **Mangosteen.**

From Buitenzorg, Java. Presented by the Director, Department of Agriculture. Received April 9, 1910.

See No. 25887 for description. (Seed.)

27511. AMYGDALUS PERSICA L. **Peach.**

From Kwangning, Manchuria. Procured by Mr. Edward C. Parker, Bureau of Agriculture, Industry and Commerce, Mukden, Manchuria, from a peach tree in the gardens of Rev. William Hunter. Received April 9, 1910.

27512 to 27517.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 6, 1910.

Seeds of the following:

27512. DIOSPYROS LOTUS L.

From Batum, Caucasus, Russia. "(No. 1258a, February 24, 1910.) A wild persimmon growing all through the Crimea and the Caucasus, where the countries border the Black Sea. The small, black fruits are called '*Churma*' and are sold everywhere to the native population as sweetmeats. The Russians in the Caucasus utilize this persimmon as a stock for *D. kaki*, but claim that the grafting or budding is rather difficult. As this species is extremely drought and heat resistant, it is highly recommended as a stock for large-fruited persimmons in regions of the United States where the winters are mild and the summers dry and hot.

27512 to 27517—Continued.

"The trees themselves are ornamental, but the fruits are too small to be ever used by the white races as a dessert." (*Meyer.*)

See also S. P. I. Nos. 17173, 17905 to 17907, 18266, 18599, 19395, 22370, and 22599 for previous introductions.

Distribution.—Southern Europe and Asia; native from the Caucasus region eastward through northern India and central China to Japan; naturalized in the European countries bordering on the Mediterranean.

27513. CICER ARIETINUM L. **Chick-pea.**

From Batum, Caucasus, Russia. "(No. 1259a, February 24, 1910.) These chickpeas are locally called '*Arnout*' and are said to come from the vicinity of Anapa, Northern Caucasus. They are much eaten here by the natives and the Russians, generally boiled in soups or served with meat stews, also roasted and sugared and eaten as a sweetmeat. To be tested especially in the semiarid sections of the United States." (*Meyer.*)

27514. TRITICUM DURUM Desf. **Wheat.**

From Batum, Caucasus, Russia. "(No. 1260a, February 25, 1910.) A winter wheat of first quality, called '*Kriek Bogda;*' said to come from Samsun, Asia Minor; costs 3 rubles per pood in Batum. To be tested in mild-wintered semiarid sections of the United States." (*Meyer.*)

27515. TRITICUM DURUM Desf. **Wheat.**

From Batum, Caucasus, Russia. "(No. 1261a, February 25, 1910.) A winter wheat of second quality, coming from the same locality as the preceding (S. P. I. No. 27514); costs 2.80 rubles per pood in Batum. Recommended for the same localities as the preceding." (*Meyer.*)

27516. GLEDITSIA CASPICA Desf.

From Livadia, Crimea, Russia. "(No. 1262a, January 25, 1910.) A honey locust growing to be a tall tree, found along roads and in thickets, perhaps escaped. A good shade tree for the semiarid sections of the United States where mild winters prevail." (*Meyer.*)

27517. GLEDITSIA CASPICA Desf.

From Nikita, Crimea, Russia. "(No. 1263a, January 24, 1910.) Collected from a tall tree in the Botanical Garden at Nikita. Recommended for the same localities as the preceding number (S. P. I. No. 27516)." (*Meyer.*)

27518. ALEURITES FORDII Hemsl. **China wood-oil tree.**

From China. Purchased from Messrs. L. C. Gillespie & Sons, New York, N. Y. Received April 7, 1910.

See S. P. I. No. 25081 for description.

27519. GREWIA CANA Sond. **"Kafir raisin."**

From Bloemhof District, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, Government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received April 9, 1910.

"This is a common bush of the southwestern Transvaal, about 4,000 feet altitude, subject to light frosts, growing to a height of 4 to 5 feet. It is generally found on outcrops of the dolomite limestone in districts having a rainfall of 20 inches in summer and with a winter drought lasting about six months. The berries are small, but produced in quantity; each contains a large stone, and the percentage of flesh

27519—Continued.

is small. The flesh is sweet, and the berries are eaten by Kafirs and white children. It is possible that the fruit might be improved under cultivation." (*Davy.*) (Seed.)

Distribution.—A branching shrub growing on the mountains in the southwestern part of Transvaal Colony and the northwestern part of Orange River Colony.

27520. CERVICINA UNDULATA (L. f.) Skeels.

(*Campanula undulata* L. f. Suppl. 142. 1781.)
(*Wahlenbergia undulata* DC. Monog. Campan. 148. 1830.)

The genus Cervicina was established by Delile (Fl. d'Egypte, vol. 6, pl. 5) in 1813, the type and only species being *Cervicina campanuloides* Delile. The name Wahlenbergia was apparently first used by Schrader (Cat. Hort. Goetting.), in 1814. This catalogue, which it has not been possible to consult, appears to have contained a mere list of botanical names not accompanied by descriptions, and Wahlenbergia was not, therefore, technically published in that place. The next use of Wahlenbergia is by Roth (Nov. Sp. Ind. Orient. 399), in 1821, where *Wahlenbergia elongata* of Schrader's catalogue is cited and described, and *Campanula capensis* L. cited as a synonym, making it the type of the genus Wahlenbergia. While *Cervicina campanuloides* Delile and *Campanula capensis* L. are very different plants, they are considered by all recent botanical writers to be congeneric, and the name Cervicina, being older, has been used in place of Wahlenbergia by various authors, including Druce (Fl. Berkshire 324. 1897), Hiern (Cat. Welw. Afr. Pl. 1: 631, 1898), and Moore (Journ. Bot. 41: 402. 1903), a precedent which is here followed.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, Government agrostologist and botanist, Transvaal Department of Agriculture. Received April 9, 1910.

"This plant is said to be much eaten by ostriches, as well as by other stock, including horses. One farmer claims that it is preferred to lucern, and that it keeps green and grows through the dry winter. It is a perennial, and prefers freshly turned, rather moist, sandy soil. It is widely distributed over the eastern Transvaal, from Pretoria eastward, at an altitude of 4,700 to 5,500 feet, with a rainfall of 26 to 33 inches, falling only in summer." (*Davy.*)

Distribution.—Linnæus gives the habitat of *Campanula undulata* as Cape of Good Hope, without locality. The species is found in the coast region of South Africa, extending from the vicinity of Tulbagh, in the southwestern part of Cape Colony, through Uitenhage, the Albany district, and Caffraria, northeastward to the Albert district in Orange River Colony, and to Port Natal in Natal.

27531 to 27537.

From San Giovanni a Teduccio, near Naples, Italy. Purchased from Messrs. Dammann & Co. Received April 11, 1910.

Seeds of the following:

27531 to 27533. DOLICHOS LABLAB L. **Bonavist bean.**

27531. Variety *albus.*

27532. Variety *atropurpureus.*

27533. Variety *sudanensis.*

27534. DOLICHOS LIGNOSUS L.

27535. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Brown.

27531 to 27537—Continued.

27536. CAPSICUM ANNUUM L. **Pepper.**

Sweet Spanish. "A medium-sized, somewhat elongated, nonpungent, sweet form of red pepper, having a highly developed red color and characteristic aroma. It is grown especially in Spain and is ground to form a sort of paprika marked by high color, sweet taste, and lack of pungency. It is hoped that this pepper will do well in this country and that its production may become a small industry here." (*R. H. True.*)

27537. CAPSICUM ANNUUM L. **Pepper.**

Szegedin Rose paprika or *Hungarian paprika.*

"This form of red pepper belongs to the group of medium-sized, somewhat elongated forms represented by a number of cultivated varieties. Its rather mild pungency, its very deep red color, and rather characteristic aroma combine to produce the commercial article known to the spice trade as *Hungarian* or *Szegedin paprika.* It is prepared for the market in different ways and with different degrees of care and yields paprika differing in quality according as the whole pod, the pod less the seeds, or the mere wall less the seeds and placentae are ground.

"This crop is grown commercially in the neighborhood of Szegedin and Kalocsa, in Hungary. It is ground in Hungary or in Austria and enters foreign commerce chiefly as a powder.

"It has been introduced into South Carolina, where, under the guidance of the Bureau of Plant Industry, U. S. Dept. of Agriculture, a small industry has been established. The yield for 1909 was about 45,000 pounds of dried pods. Owing to the limited demand for the product, this industry is likely to remain a small one, limited to the localities most favored in the matter of soil, climatic and labor conditions:" (*R. H. True.*)

27538 to 27540. VITIS VINIFERA L. **Grape.**

From Quirili, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 8, 1910.

Cuttings of the following:

27538. From Quirili, Caucasus, Russia.

"(No. 469, March 1, 1910.) A fine table grape bearing heavy bunches of blue-black fruits. It is of local Caucasian origin and is called '*Dondrelabi*,' much forced in greenhouses in England under the name '*Gros Colmant de Caucase.*' Obtained from the experimental station near Quirili." (*Meyer.*)

27539. From Quirili, Caucasus, Russia.

"(No. 470, March 1, 1910.) A native Crimean variety of table grape, ripening *very* early. It bears the name of '*Schaus.*' The individual berries are of small size, but form long bunches; color, pale yellow; taste, very sweet; a popular variety and much exported. Obtained from the experiment station near Quirili." (*Meyer.*)

27540. From Quirili, Caucasus, Russia.

"(No. 471, March 1, 1910.) A native Caucasian table grape, called '*Kundza.*' Berries and bunches are medium large; color, white; of fresh, sweet taste; stands shipping very well. Recommended as an export table grape for California. Obtained from the experiment station near Quirili." (*Meyer.*)

27541. ELAEAGNUS ANGUSTIFOLIA L.

From Mamuret-ul-Aziz (Kharput), Turkey. Presented by Mr. William W. Masterson, American consul. Received April 8, 1910.

"These are cuttings of the small-seeded variety which over here seem to be more inclined to bush and spread, while those of the larger kind are inclined to go into a heavier growth." (*Masterson.*)

See Nos. 26594 and 26595 for description.

27553 to 27558.

From Choon Chun, Korea. Presented by Mr. J. Robert Moose. Received April 4, 1910.

Seeds of the following:

27553 to 27555. ANDROPOGON SORGHUM (L.) Brot.

27553. **Kowliang.**

Blackhull. "Apparently typical of the variety." (*Carleton R. Ball.*)

27554. **Kowliang.**

Brown. "Seeds rather large; glumes short, transversely shouldered, greenish to reddish brown, glabrous; perhaps a dwarf variety." (*Carleton R. Ball.*)

27555. **Kowliang.**

Brown. "Seeds large; spikelets large, obovate; glumes vary from deep straw color to light brown." (*Carleton R. Ball.*)

27556. CHAETOCHLOA ITALICA (L.) Scribn. **Millet.**

"This millet is the finest variety I have ever seen. It makes fine hay, but is grown here because of its value as a foodstuff for the people; in many parts of the country it is the staple food the year around; it is boiled and eaten instead of rice, and makes an excellent breakfast food. There is big money for the man who will introduce it in the United States, properly prepared as a breakfast food." (*Moose.*)

27557. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Yellow seeded.

27558. PERILLA FRUTESCENS (L.) Britt.

See No. 22419 for previous introduction.

27559 to 27564.

From Togo, German East Africa. Presented by Mr. G. H. Pape, through Mr. A. B. Conner. Received April 4, 1910.

Seeds of the following:

27559. CANAVALI OBTUSIFOLIUM (Lam.) DC.

27560. CASSIA OCCIDENTALIS L.

27561. CROTALARIA sp.

27562. INDIGOFERA sp.

27563. LOTUS sp.

27564. LOTUS sp.

27566. CITRUS sp.

From Kiaying, China. Presented by Mr. George Campbell. Received April 14, 1910.

"Cuttings of the great Chinese lemon. I saw a specimen which sprawled over a wide space and was said to yield about 150 pounds of fruit every year, mainly used for preserves, or rather, candying, like citron." (*Campbell.*)

27567. ANONA CHERIMOLA Miller. **Cherimoya.**

From Chile. Presented by Mr. Hervey Gulick, Gatico, Chile. Received April 15, 1910.

"This seed is from a tree that I have not seen. The fruit is pear shaped and the size of a large orange, occasionally reaching 6 inches in diameter. The flavor is a little pitchy or piney, but very good. The tree grows in the central part of Chile, also in Peru, semitropical climates. Central California should be suitable for its growth." (*Gulick.*)

27568 to 27570.

From Ceylon, India. Procured by Mr. Albert J. Perkins. Received April 11, 1910.

Seeds of the following:

27568. BOMBAX MALABARICUM DC.

"A large tree with a buttressed base like southern cypress; large maroon flowers, and pods which contain a cotton that is used in making fabrics." (*Perkins.*)

27569. CANAVALI GLADIATUM (Jacq.) DC.

White seeded.

27570. PONGAM PINNATA (L.) W. F. Wight.

Distribution.—A tall, erect tree or climber with glabrous branches and leaves, found in India from the central Himalayas to Ceylon and Malacca, and throughout the Malayan islands to the northern part of Australia.

27571 and 27572.

From Ancon, Canal Zone, Panama. Presented by Mr. N. E. Coffey, quartermaster, Ancon Hospital, at the request of Mr. H. F. Schultz. Received April 18, 1910.

Seeds of the following:

27571. CARYOPHYLLUS JAMBOS (L.) Stokes. **Rose-apple.**

See No. 2941 for description.

Distribution.—Probably native of India; cultivated and naturalized from India to Australia.

27572. CHRYSOPHYLLUM CAINITO L. **Star-apple.**

"One of the most common fruit trees indigenous to the Canal Zone and frequently cultivated in the native (Panama) and West Indian settlements. The trees attain a height of from 25 to 75 feet and are characterized by their magnificent evergreen foliage, dark green above, and aureate, sometimes glaucous, beneath. The fruit is highly prized by the natives, but, on account of the milky and gluelike juice it contains, it is not in as general favor among Americans as its otherwise pleasant taste would indicate. It has the size and appearance of a small apple, globose and regularly 6 to 10 celled, so that, when halved, the inside of the fruit presents a star-shaped formation, each segment containing one seed, rarely, through abortion, none.

"The color of the berry is pale green, blue, or purple; in the case of this introduction the fruit is purple, but it is not supposed to come true to form through seeds. The pulp has a jelly-like consistency and, when fully ripe, a rich yet delicate flavor." (*Schultz.*)

Distribution.—Cultivated and probably native in Panama, Colombia, Peru, Guiana, and the West Indies.

27574. DATURA sp.

From Monterey, Cal. Presented by Mr. H. A. Greene, through Mr. Peter Bisset. Received April 26, 1910.

A supposedly red-flowered variety.

27575. CARICA PAPAYA L. **Papaya.**

From Dongola, Ill. Purchased from the Rose Valley Nurseries, Martin Lewis Benson, proprietor. Received April 23, 1910.

"The female plants of this variety bear a fruit the size of a large muskmelon and are as easily fruited under glass as the tomato. The male plants produce in long racemes and in large clusters enormous quantities of beautiful, waxlike, star-shaped flowers." (*Rose Valley Nurseries.*) (Seed.)

27576 to 27579.

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received April 25, 1910.

Seeds of the following:

27576. PASPALUM MARITIMUM Trin.

"This grass is the first to take possession of clearings, and is much relished by cattle, and consequently highly valued by the natives. It grows with astonishing rapidity, throwing out runners 20 to 30 feet in length in a very short time. Its height when in flower is 2 to 3 feet. It has a rather thick rhizome, which does not dry out easily, and consequently makes the grass very hard to exterminate when once established. For Florida it would probably make an excellent sand binder and pasture. This grass, according to Dr. Huber, here, has never been named, and it is not known whether it is indigenous or introduced. From its behavior it would appear to be introduced." (*Fischer.*)

Distribution.—In the Provinces of Bahia and Para, in Brazil, and in the Guianas.

27577. AMBELANIA TENUIFLORA Muell. Arg.

"This is called here *Pepino do mato*, i. e., *cucumber of the woods*, or *wood cucumber*. It is a yellow fruit about the size and shape of a small cacao fruit. It contains two seed cavities surrounded by a white flesh of rather firm consistency containing an abundant supply of latex. It is not a fruit that I could recommend very highly. I have not been able to eat it, although it is eaten by the natives." (*Fischer.*)

Distribution.—In the primeval woods along the banks of the Amazon in the Province of Para, Brazil.

27578. RHEEDIA MACROPHYLLA (Mart.) Planch. & Triana.

"*Bacury pary* (pronounced *Bah-coo-reé pah-reé*). This is a yellow or orange-yellow fruit the size of an egg, with a very pronounced beak at the calyx end and filled with four seeds, each surrounded by a very small quantity of agreeable-tasting and refreshing acidulous pulp. This tree is said to be quite common about Para, but as yet I have not seen one, having purchased the fruits on the market. The basketful as I purchased it smelled exactly like a basketful of gooseberries." (*Fischer.*)

Distribution.—French and Dutch Guiana and the valley of the Amazon in the Province of Para, Brazil.

27579. ROLLINIA ORTHOPETALA A. DC.

"This is, as Prof. Baker wrote, the finest anonaceous fruit in tropical America. It is the only one of those which I have tasted that I liked, and on first trial

27576 to 27579—Continued.

I immediately pronounced it delicious. The seeds are enveloped in a large quantity of pulp, which is of a custard-like consistency and of a very agreeable acidulous taste. I do not know what fruit it resembles most in taste. It would undoubtedly do to try in the Everglades, as it grows here in localities which are often flooded for some time during the rainy season." (*Fischer.*)

Distribution.—Paraguay and the adjacent parts of Brazil and Argentina.

27580. SESBAN GRANDIFLORUM (L.) Poir.

From Poona, India. Received through Mr. P. S. Kanetkar, director, Empress Botanic Gardens, April 27, 1910.

"A small tree of very rapid growth, with large flowers and short life. It thrives in any irrigated soil. The flowers and young pods are a favorite vegetable." (*Woodrow's Gardening in India, p. 279.*)

Preparation of *Sesban grandiflorum* as a vegetable: The parts used are: (1) The tender shoots, (2) the fresh flowers, (3) the pods in a tender state, (4) the seeds in tough pods.

The tender shoots are chopped fine, boiled, and the boiled water is thrown away. Salt, chili powder, and "masala," or condiment powder, are added for flavor. Boiling sweet oil (one-half ounce to the pound of vegetable), to which is added asafetida and whole mustard and cumin seeds, is poured on the boiled vegetable. The oil is mixed with the vegetable, which is now kept on a slow fire for seasoning, the pot being covered to condense the steam.

The flowers are washed clean and the standard petal and pistil are taken out of each flower (it is not understood why these are rejected). The chopped flowers are subjected to a slight steaming in a vessel. Afterwards salt, chili powder, and condiment powder are added. From this preparation three different dishes can be made:

(*a*) A sour dish, which is obtained by adding curds and pouring boiled oil (one-half ounce to the pound of vegetable) or ghee, preferably the latter, to which mustard (one thirty-second to one-half ounce of oil), asafetida (5 grains to one-half ounce of oil), and cumin seeds (one thirty-second to one-half ounce of oil) are always added while boiling.

(*b*) Curry can be made from the stuff by adding water, proportionate salt, chili powder, turmeric powder, and a little gram pulse flour to give it consistency. The curry must be well boiled—one-eighth of the water should steam out. Then boiling oil, to which mustard, asafetida, and cumin seeds are added, is poured into the curry. After a little further boiling the curry is ready for use.

(*c*) To the steamed preparation gram pulse flour is added sufficient to make it thick; salt, chili powder, and condiment powder are added and the whole is placed in a vessel on a slow fire to dry off.

The tender pods are cut up into half-inch and inch bits and boiled and then either made into curry like (*b*) or a solid vegetable like (*c*). When made into curry, gram pulse about one-fourth the volume of the bits of pods is boiled with them. A sour dish can also be made from the boiled pod bits like (*a*).

The seeds, before they get tough, are usually mixed with the pod bits when made into curry. No special dish is made from the seeds.

The "masala" (this is a Bombay word) or condiment powder referred to above is made up of the following, fried in sweet oil—2 ounces asafetida, 2 ounces cloves, 2 ounces cinnamon leaves, 2 ounces cinnamon bark, 4 ounces turmeric, 2 pounds coriander, 2 ounces cumin seed, 2 ounces *Carum nigrum*, 2 ounces coconut kernel, 4 ounces sesame.

27580—Continued.

The whole plant has mild purgative properties and the vegetable preparations above described are not much indulged in. (*Kanetkar.*)

Distribution.—Plains of the western peninsula of India and from the island of Mauritius eastward to the northern part of Australia.

27586. VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Honolulu, Hawaii. Presented by Mr. F. G. Krauss, agronomist, Hawaii Experiment Station. Received April 20, 1910.

"*Wilcox.* A cowpea which, so far as I have been able to determine, originated in our trials of 1907, either as a mutant or rogue. As it does not resemble any of the half dozen varieties we have been growing in recent years, I do not think it is a hybrid. It is far ahead of anything we have grown in cowpeas. In the fully developed form, before drying, the pods are a beautiful deep crimson." (*Krauss.*)

27587. CASTANEA sp. **Chestnut.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received April 11, 1910.

Korean.

27598 and 27599. ZEA MAYS L. **Corn.**

From Mexico. Procured by Mr. Sam E. Magill, American consul, from José Maria M. Sotomayor. Received April 13, 1910.

Seeds of the following:

27598. "*Apepitillado*" produced near Ocatlan.

27599. "*Apepitillado*" produced near Ocatlan by Vidal Gutierrez.

NOTE.—These packages were broken open and the seed probably mixed.

27600 to 27602. TRIFOLIUM PRATENSE L. **Red clover.**

From Roikenvik, Norway. Presented by Mr. Lars Hvinden. Received April 13, 1910.

Seeds of the following:

27600. *Molstad.* **27601.** *Toten.*

"These two clovers are late varieties and should not be grown on marshy soil, but they stand the severest cold for three and four years in Norway." (*Hvinden.*)

27602. *Hvinden's.* "A red clover which I by chance have discovered. It has grown on my farm for years and gave the richest crops I ever saw. It is earlier than *Molstad* and *Toten* clover and can be cut twice in the summer." (*Hvinden.*)

27603 to 27608. MELILOTUS spp.

From St. Petersburg, Russia. Presented by Dr. A. Fischer v. Waldheim, director, Royal Botanic Gardens. Received April 4, 1910.

Seed of the following:

27603. MELILOTUS DENTATA (Waldst. & Kit.) Pers.

27604 to 27606. MELILOTUS INDICA (L.) All.

27607. MELILOTUS ITALICA (L.) Lam.

27608. MELILOTUS MESSANENSIS (L.) All.

27609 and 27610. ROLLINIA spp.

From Horqueta, Paraguay, South America. Presented by Mr. T. R. Gwynn. Received April 20, 1910.

Seeds of the following; notes by Mr. Gwynn:

27609. ROLLINIA ORTHOPETALA A. DC.

"*Aratecuý Yvirá mató.* A good-sized tree, as large as the orange; is handsome and has splendid foliage. The fruits are small."

Distribution.—Paraguay and the adjacent parts of Brazil and Argentina.

27610. ROLLINIA EMARGINATA Schlecht.

"*Aratacu-quatu.* This is a small bush growing here in the open camp in almost any soil. The fruit is large and the best class of all according to my thinking."

See No. 25528 for previous introduction.

27611 to 27650.

From Erivan, Caucasus, Russia, close to the frontiers of Persia and of Asia Minor. Received through Mr. Frank N. Meyer, agricultural explorer, who obtained them from the Government Experimental Fruit Garden at Erivan, March 28, 1910. Received April 14 and 30, 1910.

"Erivan is situated at an elevation of 3,229 feet above sea level. The climate is decidedly semiarid with even a slight degree of aridness. The winters are cold with very little snow, the summers hot and dry; there are heavy rains at intervals in the spring and fall. The climate as a whole seems to resemble very much that of the southern Rocky Mountain region. All the crops are irrigated in summer."

Cuttings of the following:

27611. ELAEAGNUS ANGUSTIFOLIA L.

"(No. 711.) A local variety called '*Matna-pshat.*' See note on No. 709 (S. P. I. No. 27775), which is the same. The dried fruits of these 'Russian olives' (as they are called here) are to be found in the native fruit stalls nearly the year round. The trees are mostly seen planted around the fields as windbreaks, the distance between the trees varying from 5 to 15 feet." (*Meyer.*)

27612. ELAEAGNUS ANGUSTIFOLIA L.

"(No. 712.) A local variety called '*Unab-pshat.*' Fruits somewhat smaller than the *Matna-pshat* (S. P. I. No. 27611), skin thicker; not as tender and sweet nor as prolific, but ripens a fortnight earlier and is a better keeper and shipper." (*Meyer.*)

27613. AMYGDALUS PERSICA L. **Peach.**

"(No. 713.) A native Caucasian variety of peach called '*Salami,*' meaning 'congratulatory.' Fruits large, round, and a little flattened; general color greenish yellow with deep-red cheek; clingstone; large seed; flesh pale yellow with reddish streaks near the stone, juicy and of sweet taste. Ripens the beginning of October." (*Meyer.*)

27614. AMYGDALUS PERSICA L. **Peach.**

"(No. 714.) A native Caucasian variety of peach called '*Saffrani,*' meaning saffron. The fruits are of medium size; general color saffron yellow, cheek streaked with deep red. The skin has a saffron-like scent. Clingstone. Flesh yellow, juicy, aromatic, and sweet. Ripens in September." (*Meyer.*)

27615. AMYGDALUS PERSICA L. **Peach.**

"(No. 715.) A local variety of peach called '*Naryndji,*' meaning golden. Fruits large, almost perfectly round; general color golden yellow, blood red on

27611 to 27650—Continued.

sunny side. Flesh of yellow color with red streaks near the stone. Clingstone. Ripens the beginning of October and is a good shipper." (*Meyer.*)

27616. AMYGDALUS PERSICA L. **Peach.**

"(No. 716.) A Caucasian variety of peach called '*Aidinofski.*' Of oblong shape, yellow color. Clingstone. A very late ripener." (*Meyer.*)

27617. AMYGDALUS PERSICA L. **Peach.**

"(No. 717.) A Caucasian variety of peach, called '*Krashni Karmir.*' Fruits very large, color red; clingstone; late." (*Meyer.*)

27618. AMYGDALUS PERSICA L. **Peach.**

"(No. 718.) A Caucasian variety of peach, called '*Aidinof Karmir.*' Fruits very large (like a good-sized apple), of red color; juicy; a late ripener." (*Meyer.*)

27619. AMYGDALUS PERSICA L. **Peach.**

"(No. 719.) A local variety of peach, called '*Norrast-guli.*' Fruits large, of nearly round shape; skin light yellowish green, very downy, medium thick; flesh whitish yellow, very juicy, of aromatic, sour-sweet taste; stone large, cling; kernel sweet like almond. The earliest ripening peach in this locality." (*Meyer.*)

27620 to 27650. VITIS VINIFERA L. **Grape.**

"The grapevines here are planted on ridges 12 to 15 feet apart, with broad furrows running along them, in which the water is allowed to flow. At the approach of cold weather (early November) the vines are covered with loose soil to prevent them from freezing. At the end of March they are uncovered again and pruned. All the Asiatic and Caucasian grapes seem to have to be pruned with long wood to produce the heaviest yields. The many shoots which the plants are allowed to have are trained over the ground, the fruit-bearing stems being put on short forked stakes to prevent the bunches from touching the soil. When trained to wires the grapes shrivel and dry from the great heat. This system, which is very simple and requires but little work, could safely be introduced in those sections of the United States where the winters are too cold for the vinifera type of grapevines to survive unless protected, but where the summers are hot enough to make the grapes ripen. All the vines in the Government garden are grafted on American stock, so as to resist the *Phylloxera.*" (*Meyer.*)

27620. "(No. 720.) A local variety of grape, called '*Ghulabi.*' Bunches long, of very loose and irregular conical shape. Berries round, long, not of uniform size, general color dark pink, covered with a thick coat of white bloom; skin thick, red, and inedible; flesh of pale yellowish-green color, juicy, aromatic, and sweet; few seeds; is used both as a table and wine grape. A prolific bearer. Ripens in the latter part of September and can be kept from two to three months." (*Meyer.*)

27621. "(No. 721.) A Caucasian variety of table grape called '*Shafaï.*' Bunch large, up to 1 foot long, of loose, conical shape. Berries large, irregular, elongated, slightly bent, and not of uniform size; color greenish-yellow with waxy bloom; skin thick, light yellow with a few dark spots around the end; flesh firm, of pale yellow color, not sweet or juicy; seeds always one, seldom two. Ripens at the beginning of October. Can be kept for six months. Does not suffer from *Oïdium.*" (*Meyer.*)

27611 to 27650—Continued.

27622. "(No. 722.) An Asiatic table grape, called '*Ghusaine.*' Bunch 1 to 1¼ feet long, of loose, conical shape, with side bunches. Berries of medium size, elongated, sometimes slightly pressed in on one side. In a bunch there are always a few half-dried berries. They are pale yellow in color, with a whitish bloom; flesh firm, of very sweet and spicy taste. Contains usually two seeds, seldom one. A fine table grape, also used for wine making. Not very prolific, and needs a long season to ripen." (*Meyer.*)

27623. "(No. 723.) An Asiatic table grape, called '*Kishmish.*' Bunch medium size, conical, compact. Berries small, slightly elongated, but less so than red Kishmish; color milk-white with whitish wax bloom and a few red dots; skin white, thick; flesh white with light yellowish hue, juicy and sweet; three rudimentary seeds. Ripens at the beginning of September and is a prolific bearer." (*Meyer.*)

27624. "(No. 724.) A variety of Asiatic table grape, called '*Korsa Kishmish,*' resembles No. 723 (S. P. I. No. 27623) very much, but the color of the berries is less white, the shape irregular, and the fruit ripens earlier." (*Meyer.*)

27625. "(No. 725.) An Asiatic table grape, called '*Kishmish*' (red). Bunch large, long, medium compact, of cylindrical-conical shape, with side bunches. Berries small, egg-shaped, uneven, pink colored, with whitish pink bloom. Skin thin; flesh pale yellow, juicy, and very sweet. Rudimentary seeds only. Ripens about the end of August." (*Meyer.*)

27626. "(No. 726.) An Asiatic table grape, called '*Kishmish daba.*' Said to bear small, compact bunches of small berries; color white; early and prolific." (*Meyer.*)

27627. "(No. 727.) A local variety of table grape, called '*Askari.*' Bunch large, long, of loose, irregular-conical shape with side bunches. Berries small, elongated egg-shaped; color pale green, with a few dark dots. Flesh juicy, not sweet. Ripens near the end of August. A prolific bearer and a very fine table grape, but can not be transported on account of its tender skin, which often breaks open after a rain when fully ripe. Suffers greatly from *Oidium.* Recommended for home use in dry regions with long and hot summers." (*Meyer.*)

27628. "(No. 728.) A table grape called '*Malaki.*' Said to be black, early, and very sweet." (*Meyer.*)

27629. "(No. 729.) A table grape called '*Kizil-sioum.*' Said to be yellow, early, and sweet." (*Meyer.*)

27630. "(No. 730.) A table grape, called '*Mamarsa ghansi.*' Said to be a very good, sweet, black grape. Late." (*Meyer.*)

27631. "(No. 731.) A table grape, called '*Kordash.*' Said to be black, small, and very sweet." (*Meyer.*)

27632. "(No. 732.) A table grape, called '*Danna bazan.*' Said to be black, small, and of subacid flavor." (*Meyer.*)

27633. "(No. 733.) A table grape, called '*Kara-sarma.*' Said to bear large, sweet, black berries. Early." (*Meyer.*)

27634. "(No. 734.) A table grape, called '*Alachki.*' Said to be red, large, sweet, and very early." (*Meyer.*)

27611 to 27650—Continued.

27635. "(No. 735.) A table grape, called '*Esandri.*' Said to be black and very early." (*Meyer.*)

27636. "(No. 736.) A table grape, called '*Esandri.*' Said to be a variety of No. 735 (S. P. I. No. 27635), bearing grapes of a greenish color." (*Meyer.*)

27637. "(No. 737.) A table grape, called '*Chatchabash.*' Said to be yellow; a late ripener, and possessing good transporting and keeping qualities, being kept until February." (*Meyer.*)

27638. "(No. 738.) A table grape, called '*Kharmatmak.*' Said to be yellow and very late." (*Meyer.*)

27639. "(No. 739.) A table grape, called '*Kharashani.*' Said to be white, large, and late." (*Meyer.*)

27640. "(No. 740.) A table grape, called '*Sev-ursa.*' Said to be a large, sweet, black grape, and a late ripener." (*Meyer.*)

27641. "(No. 741.) A table grape, called '*Sgòtoruk.*' Said to be a large black grape, ripening late." (*Meyer.*)

27642. "(No. 742.) A table grape, apparently of local origin, called '*Ghalilou.*' Bunch medium size, medium compact, of elongated-conical shape. Berries small, elongated, elliptical. Color amber yellow. Skin tender, pale yellow, sometimes of rusty color on sun side. Flesh firm, very sweet; a fine dessert grape. Ripens at the beginning of August, the earliest variety in the Erivan district." (*Meyer.*)

27643. "(No. 743.) A table grape, called '*Aldara.*' Said to be large, sweet, and early." (*Meyer.*)

27644. "(No. 744.) A table grape, called '*Shakari-bira.*' Said to be white, large, and round. A very late ripener." (*Meyer.*)

27645. "(No. 745.) A table grape, called '*Shirshira.*' Said to be white, large, and very sweet. Late." (*Meyer.*)

27646. "(No. 746.) A table grape, called '*Aldara.*' Said to be large and black. Late." (*Meyer.*)

27647. "(No. 747.) A local table grape, called '*Rshi-baba.*' Said to be red." (*Meyer.*)

27648. "(No. 748.) A wine grape called '*Chardju.*' Said to be white; bunches small, but dense. Medium late. Produces a fair wine." (*Meyer.*)

27649. "(No. 749.) A local variety of table grape, called '*Ghalilou*' No. 2. Greatly resembles No. 742 (S. P. I. No. 27642), but of a reddish color." (*Meyer.*)

27650. "(No. 750.) A wine grape, called '*Charashani,*' said to be red, and of medium quality." (*Meyer.*)

27651 to 27659. SOLANUM TUBEROSUM L. **Potato.**

From Bolshaia Viska, Russia. Received from Mr. B. E. Neuberg, through Mr. W. V. Shear, April 19, 1910.

Tubers of the following; descriptive notes by Mr. Shear:

27651. *Vorbote.* "Medium-sized, round to oblong, slightly flattened tubers. Eyes shallow; skin yellowish-white; flesh white. An early variety."

27651 to 27659—Continued.

27652. *Ruby Queen.* "Round to oblong, flattened; skin purple; eyes shallow. Very early."

27653. *Fürst Bismarck.* "Medium-sized, round tubers; skin deep flesh color; eyes shallow."

27654. *Norma, Cimball's.* "Long, cylindrical, medium-sized tubers; skin yellowish; eyes shallow. A medium-early variety."

27655. *Epicure.* "Medium-sized, round to oblong tubers; skin yellowish-white; eyes rather deep. An early variety."

27656. *Entente Cordiale.* "Medium-sized, yellowish-skinned tubers, round to oblong, slightly flattened; eyes shallow. An early variety."

27657. *Cäcilia.* "Tubers medium-sized, oblong, flattened; skin white; flesh yellowish white."

27658. *Imperator, Richter's.* "Medium-sized, oblong, flattened tubers; skin yellowish white; eyes shallow."

27659. *Industrie.* "Medium-sized, oblong, flattened tubers; skin yellowish white; eyes shallow; sprouts white."

27660 and 27661.

From Mayaguez, Porto Rico. Received through Mr. D. W. May, special agent in charge, Porto Rico Agricultural Experiment Station. Received April 19, 1910.

Seeds of the following:

27660. ERYTHRINA UMBROSA H. B. & K.

"This is a most excellent leguminous shade for coffee, and a windbreak for citrus groves." (*May.*)

Distribution.—On the mountains along the coast of Venezuela between La Guayra and Caracas.

27661. STERCULIA FOETIDA L.

See No. 17139 for description.

27662 to 27674.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 8, 1910.

Seeds of the following:

27662. FAGUS ORIENTALIS Lipsky.

From Tiflis, Caucasus, Russia. "(No. 1286a, Mar. 21, 1910.) The Caucasian beech, which grows to be a tall and imposing tree and forms whole forests all through Caucasus. The wood is excellent material for tubs and barrels, furniture and tools. These seeds came from the vicinity of Yelisavetpol, eastern Caucasus, where there is only a slight annual rainfall (10-12 inches). Recommended as a shade and timber tree for mild-wintered, semiarid sections of the United States. Obtained from Mr. A. C. Rollow, director of the Botanic Gardens at Tiflis. Also see note for No. 406 (S. P. I. No. 26862)." (*Meyer.*)

Distribution.—Throughout the Caucasus region and in the province of Ghilan, northwestern Persia.

27663. ALLIUM CEPA L. **Onion.**

From Tiflis, Caucasus, Russia. "(No. 1287a, Mar. 19, 1910.) A many-headed variety of native Caucasian onion, coming originally from the vicinity of Yelisavetpol, but now also much grown around Tiflis. The curiosity about this

27662 to 27674—Continued.

onion is, as I was informed, that the seeds are sown in the fall in beds or in rows and the young plants left over winter in the open; during the following summer they make a strong growth and produce often five or six onions in a cluster. As Yelisavetpol is situated in a semiarid region, this onion ought to be valuable to settlers in the mild-wintered, semiarid regions of the United States. Obtained from Mr. K. A. Kees, seed dealer, in Tiflis." (*Meyer.*)

27664. CUCUMIS MELO L. **Muskmelon.**

From Tiflis, Caucasus, Russia. "(No. 1288a, Mar. 19, 1910.) Mixed varieties of native Caucasian muskmelons, among which there are said to be some very fine varieties. To be tested in semiarid regions. Purchased in Tiflis." (*Meyer.*)

27665. CUCUMIS SATIVUS L. **Cucumber.**

From Tiflis, Caucasus, Russia. "(No. 1289a, Mar. 19, 1910.) A native Caucasian variety of cucumber, half-long, of green color. Said to be a really good sort, worthy of introduction. To be tested in semiarid regions. Purchased in Tiflis." (*Meyer.*)

27666. SOLANUM MELONGENA L. **Eggplant.**

From Tiflis, Caucasus, Russia. "(No. 1290a, Mar. 19, 1910.) A native Caucasian variety of eggplant. The fruits are of a dark-purple color, elongated shape, and medium size. Considered to be a good sort. For trial in semiarid regions." (*Meyer.*)

27667. TILIA sp.

From Tiflis, Caucasus, Russia. "(No. 1293a, Mar. 22, 1910.) A beautiful native Caucasian shade tree, growing to be very old and of large dimensions. Of value as a park and avenue tree in the mild-wintered sections of the United States. See also No. 408 (S. P. I. No. 26892)." (*Meyer.*)

27668. HALIMODENDRON HALODENDRON (Pallas) Voss.

From Tiflis, Caucasus, Russia. "(No. 1294a, Mar. 14, 1910.) A very spiny shrub, native of the Caucasus, apparently very drought resistant. Suitable as an ornamental garden shrub and as a hedge plant in semiarid regions. Collected in the garden of the School for Horticulture in Tiflis." (*Meyer.*)

Distribution.—The species was described by Pallas from the vicinity of Irtish River in Siberia and is now known to occur from the salt steppes of Transcaucasia to Dzungaria and the Altai region of southern Siberia.

27669. RHAMNUS PALLASII Fisch.

From Tiflis, Caucasus, Russia. "(No. 1295a, Mar. 22, 1910.) An ornamental deciduous shrub, growing on very dry and sterile places. Recommended for bank binding and as an ornamental garden shrub in semiarid, fairly mild-wintered regions. Obtained from the Botanical Garden in Tiflis." (*Meyer.*)

Distribution.—Russian and Turkish Armenia, and the Provinces of Azerbaijan and Ghilan in northwestern Persia.

27670. PYRUS NIVALIS ELAEAGRIFOLIA (Pall.) Schneider.

From Tiflis, Caucasus, Russia. "(No. 1296a, Mar. 22, 1910.) A shrubby, wild pear, occurring on very dry places, mainly in Eastern Caucasus. Recommended as a dwarfing stock for pears and as an ornamental garden shrub in regions where the winters are not too severe, but the summers hot and dry. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

See No. 27134 for previous introduction.

27662 to 27674—Continued.

27671. JUNIPERUS FOETIDISSIMA Willd.

From Tiflis, Caucasus, Russia. "(No. 1297a, Mar. 22, 1910.) A tall-growing tree, occurring on dry places. Of value as an ornamental and timber tree in dry regions where fairly mild winters prevail. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

Distribution.—In the coniferous forests on the subalpine and alpine slopes of the mountains of Greece, and in Armenia and the Province of Karabagh in southeastern Russia.

27672. JUNIPERUS OXYCEDRUS L.

From Tiflis, Caucasus, Russia. "(No. 1298a, Mar. 22, 1910.) Obtained from the Tiflis Botanical Gardens." (*Meyer.*)

See No. 26884 for further description.

27673. JUNIPERUS COMMUNIS L.

From Tiflis, Caucasus, Russia. "(No. 1299a, Mar. 22, 1910.) This well-known shrub, occasionally growing into a small tree, occurs on many places in the Caucasus and is worthy of test as an ornamental evergreen in the semiarid sections of the United States. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

Distribution.—Europe, northern Asia, northern China, the mountains of northern Africa, and in the United States from the Canadian boundary southward to North Carolina, Arizona, and northern California.

27674. PAEONIA MLOKOSEWITSCHI Lomakin.

From Tiflis, Caucasus, Russia. "(No. 1300a, Mar. 22, 1910.) A rare, herbaceous, native Caucasian peony, bearing yellow flowers. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

Distribution.—Slopes of the Caucasus Mountains in the Province of Talysch in southeastern Russia.

27675. MEDICAGO ARABICA (L.) All.

From Sukhum-Kale, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, Mar. 31, 1910.

This was picked out of No. 27343; see this number for remarks.

27676 to 27679.

From Loutulim, Goa, Portuguese India. Presented by Mr. F. S. Cardosa. Received Apr. 16, 1910.

Seeds of the following:

27676. CANAVALI GLADIATUM (Jacq.) DC.

27677. CANAVALI OBTUSIFOLIUM (Lam.) DC.

27678. DOLICHOS LABLAB L. **Bonavist bean.**

27679. MIMUSOPS KAUKI L. **"Adam's-apple."**

See No. 25909 for description.

"This is a very large, hard, timber tree, very productive. Its fruit is a berry about the size of a small egg and is very palatable and delicious when the trees are carefully cultivated." (*Cardosa.*)

27680. CARYOPHYLLUS AROMATICUS L. **Clove.**

From Zanzibar, East Africa. Procured by Mr. Arthur Garrels, American consul. Received Apr. 20, 1910.

"A small tree, 12 to 15 feet high, native in the Molucca Islands, now cultivated widely in tropical regions for the dried, unopened flower buds, which constitute the cloves of commerce. The chief source of cloves is now the island of Zanzibar, where the culture is carried on as a Government monopoly. The unopened flower buds are picked, freed from their stems, and cured for commerce, the original brilliant red of the product changing to a dark-brown color. Cloves contain a pungent, fragrant, volatile oil in great quantity (sometimes as high as 25 per cent), which gives to the product its highly prized quality as a spice. The oil, when separated by distillation, is known to commerce as clove oil, and owing to its properties as an antiseptic and local anesthetic is much used in dental practice. Tannin is present in cloves as high as 17 per cent. They were formerly used as a dyestuff for coloring silks." (*R. H. True.*) (Seed.)

27682 and 27683. ORYZA SATIVA L. **Rice.**

From Philippine Islands. Procured by Mr. William S. Lyon, Manila, P. I. Received Apr. 21, 1910.

Seeds of the following:

27682. MIMIS. **27683.** MILAGROSA.

27684. LAUROCERASUS OFFICINALIS Roem. **Laurel-cherry.**

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer. Received Apr. 23, 1910.

"(No. 485, Mar. 17, 1910.) A variety of laurel-cherry coming from the higher mountains of the Caucasus and able to stand temperatures of 10° below zero F. It is of rather slow growth and low, spreading habits. A good evergreen shrub for parks and gardens in certain sections of the United States, such as Long Island, etc." (*Meyer.*)

27685 to 27703.

From Belgrade, Servia. Presented by the Chief of the Culture Department, Servian Royal Ministry of Agriculture, forwarded through Mr. Robert S. S. Bergh, American consul. Received April 13, 1910.

Cuttings of the following; the information regarding them was translated, from the labels which accompanied the cuttings, by Prof. Woïslav Petrovitch, of the Department of Commerce and Labor, Washington, D. C.:

27685 to **27697.** VITIS VINIFERA L. **Grape.**

27685. "*Sitna Bellina.*" Small white grapes, used to make wine.

27686. "*Procoupatz.*" Name derived from that of a town of Eastern Servia, Prokouplie. Used to make wine.

27687. "*Bella Adackalcka.*" "*White Adackalcka.*" For table use.

27688. *White* "*Drenack.*" For table use.

27689. *Red* "*Drenack.*" Long, pointed grapes, for table use.

27690. "*Lipolist.*" Ordinary (common) grapes. Title derived from the similarity of the leaves of this vine and of the linden tree. (In Servian "Lipa"=linden, "List"=leaf.)

27685 to 27703—Continued.

27691. "*Zatchinak.*" Grapes used for wine making in combination with other varieties. ("Zatchinak" means spice.)

27692. "*Plovdina.*" Blue grape used for wine making.

27693. "*Kroupna Bellina.*" Large, round, white grape used for wine making.

27694. "*Skadarka.*" Used for wine making.
Name derived from Lake Skadar of Montenegro.

27695. (Name illegible.) Used for wine making.

27696. "*Smederevka.*" Used for table grapes and wine making.

27697. *Red* "*Adackalcka.*" For table use.

27698. CYDONIA sp. **Quince.**
"*Quince of Leskovatz.*" Leskovatz is a town of southern Servia.

27699. PYRUS sp. **Pear.**
"*Summer Butter-pear.*"

27700. PRUNUS sp. **Plum.**
"*Servian.*" By this name is known a variety of dark plums that ripen very late in autumn. "Pekmez" (marmalade) is made of them.

27701 and 27702. MESPILUS GERMANICA L. **Medlar.**

27701. *Royal.*

27702. "*Vrlo kroupna moushmoula.*" Very large variety.

Distribution.—In the woods of Greece and the Caucasus region, Asia Minor, and western Persia, also occasionally found in the countries of southern Europe, where it is probably introduced.

27703. CYDONIA sp. **Quince.**
"*Vranya.*" Vranya is a town in southern Servia.

27704 to 27713.

From Hankow, China. Presented by Mr. A. Sugden.
Received April 14, 1910.

Seeds of the following; notes by Mr. Sugden:

27704. CANAVALI GLADIATUM (Jacq.) DC.

27705. PISUM ARVENSE L. **Pea.**
Field variety.

27706. PISUM SATIVUM L. **Pea.**
Field variety.

27707. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**
Yellow seeded.

27708. GLEDITSIA SINENSIS Lam.
"Grows to be a large tree. Pods used for washing clothes."

Distribution.—The provinces of Chihli, Kiangsu, and Chekiang in the Chinese Empire.

27709. GYMNOCLADUS CHINENSIS Baill.
"Soap is made from this by pounding the pod and is used for washing the person, as it is scented. The seed is used much as we use bluing. The leaf is said to be large and long."

See No. 26281 for previous introduction.

27704 to 27713—Continued.

27710. CUCURBITA PEPO L.

"An ornamental orange gourd, deeply grooved, green at center of ends."

27711. CUCURBITA PEPO L.

"Similar to the above, but deep red."

27712. LAGENARIA VULGARIS Ser.

"Small, yellow gourd which hangs on the plant all winter. Has a fluffy white flower."

27713. SOLANUM MAMMOSUM L.

"Five-finger gourd, from Canton, has large, thorny leaves, and a deep-yellow fruit which lasts on the plant or when picked for a long time, and is both highly ornamental and quaint; there are four small fingers sticking out from the base, on which it is able to stand. The Chinese use it as an ornament. Size of fruit about 3 by 2 inches. Would probably require heat to fruit."

27714 to 27723.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 20, 1910. Collected by him March 14, 1910.

Cuttings of the following:

27714 to 27719. MORUS ALBA L.

Obtained from the Experiment Station for Sericulture in Tiflis. Suitable for experiment in the mild-wintered semiarid sections of the United States.

27714. "(No. 475.) Variety *pendula*. An interesting variety of the weeping mulberry, making twigs often 10 feet long, which hang straight down. Very beautiful when grafted high, that is, from 10 to 20 feet above the ground. Of value as a cemetery and park tree." (*Meyer.*)

27715. "(No. 476.) Variety *globosa*. An ornamental mulberry, having a dense globular head. May be grafted either high or low and can be used to advantage in gardens where somewhat formal outlines are to be preserved." (*Meyer.*)

27716. "(No. 477.) Variety *pyramidalis*. A robust variety of mulberry, looking, at a distance, very much like a pyramidal poplar. Of value as a lining tree along paths and driveways in places where tall fastigiate trees are not wanted." (*Meyer.*)

27717. "(No. 478.) Variety *latifolia*. A variety of mulberry having large leaves and bearing large, dark berries of good taste, ripening from the middle of June until the middle of September. Of value as an ornamental and fruit tree." (*Meyer.*)

27718. "(No. 479.) Variety *italia*. A very large-leaved variety of mulberry, said to be of Japanese origin. The leaves are unlike other mulberries, being more or less lobed like *Papyrius papyrifera*. The trees are strong growers and may serve as ornamental shade trees, while the dark berries are of a pleasant taste." (*Meyer.*)

27719. "(No. 480.) Variety *hispanica*. A mulberry bearing long, dark berries of a raspberrylike taste. Has large and heavy leaves and may serve as an ornamental tree in parks and gardens." (*Meyer.*)

27720. MORUS NIGRA L.

From Tiflis, Caucasus, Russia. "(No. 481.) A native variety of mulberry bearing the name '*Ghar-tootà*.' Produces large, black berries of a fresh, sweet

27714 to 27723—Continued.

taste, from which excellent preserves can be made. It ripens from the end of July until the middle of September. The trees are apparently slow growers and do not occupy much room. Suggested as a fruit tree for the home garden in those sections of the United States where the winters are not too severe. Obtained from the Experiment Station for Sericulture in Tiflis." (*Meyer.*)

27721. POPULUS ALBA L.

From Tiflis, Caucasus, Russia. "(No. 482.) Variety *pyramidalis*. A tall-growing, very pyramidal poplar, having a very white trunk. Suitable for an avenue tree in the mild-wintered semiarid sections of the United States." (*Meyer.*)

27722. POPULUS ALBA L.

From Tiflis, Caucasus, Russia. "(No. 483.) Variety *Bolleana*. Came originally from Turkestan. Often confused with, yet distinct from, the variety *pyramidalis*. Quite resistant to canker, while the preceding number (S. P. I. No. 27721) is not. Much planted in and around Tiflis." (*Meyer.*)

27723. POPULUS sp.

From Tiflis, Caucasus, Russia. "(No. 484.) A tall poplar of very spreading habits, with silvery white bark. Grows very fast. Apparently a native of the Caucasus. A good park tree for the mild-wintered, semiarid regions of the United States." (*Meyer.*)

27724 to 27736. CITRUS AUSTRALASICA, S. P. I. No. 14993 × CITRUS AURANTIUM?, S. P. I. No. 2886.

Grown at the Department Greenhouse, Washington, D. C., under the supervision of Mr. G. W. Oliver, expert propagator. Numbered April 28, 1910.

"These plants resulted from crossing the finger lime (*Citrus australasica*) with the calamondin. (*C. aurantium* (*?*)).

"In general appearance the seedlings are intermediate between the two parents. In *C. australasica* the leaves are very small, the petioles being without wings. In the calamondin the winged petioles are quite pronounced. The leaves of the hybrids are much larger than those of *C. australasica;* the petioles of the hybrid, although small, are winged. The seed parent and also the pollen-bearing parent are said to be much hardier than any other edible oranges. It is proposed to use this hybrid in future crossing, both for the production of a hardy orange and also for stocks for the orange and other citrus fruits in the Gulf States.

"The seed from which the female parent was grown was presented to Prof. W. M. Hays, St. Anthony Park, Minn., by Mr. James Pink, Wellington Point, near Brisbane, Australia; this seed was given to the department by Prof. Hays in August, 1905. Mr. Pink says of this species:

" 'It is a fruit which I think capable of great improvement. Nothing has ever been attempted with it here, and I send you a few dried fruits which, I have no doubt, contain good seeds. The plant is a large shrub, very limited in its distribution. The fruit when well grown is from 3 to 4 inches long, of a bright orange-crimson color, and of excellent flavor.'

"The pollen-bearing parent was received as *Citrus aurantium* (*?*) by the Department through Messrs. Lathrop and Fairchild in 1899, from Panama. It is said to have been introduced into Panama from Chile by Mr. Gerardo Lewis. Mr. Walter T. Swingle is of the opinion that it is the calamondin (*Citrus mitis*) of the Philippines." (*Oliver.*)

27737 and 27738. MEDICAGO SATIVA L. **Alfalfa.**

Plants growing at Arlington Experimental Farm, Va. Numbered spring of 1910.

"Two of four surviving plants from an alfalfa field near Weskan, Kans., 20 years old, the rest having succumbed to the extreme drought and encroachment of buffalo grass. These plants were obtained by me under Agrost. No. 42 and 43, summer of 1907." (*J. M. Westgate.*)

27739 to 27754. MEDICAGO FALCATA ♀ × SATIVA ♂. **Alfalfa.**

Hybrids between *Medicago falcata* and various strains and varieties of *Medicago sativa*. Parents selected and hybrids made by Messrs. J. M. Westgate and W. J. Morse at the Arlington Experimental Farm during the summer of 1908. Numbered spring of 1910.

27739. Agrost. No. 2111. (*Medicago falcata* [S. P. I. No. 20718] crossed with Peruvian alfalfa [Agrost. No. 2002] [S. P. I. No. 14972?].) First plant in row.

27740. Agrost. No. 2111. Second plant in row.

27741. Agrost. No. 2111. Third plant in row.

27742. Agrost. No. 2112. (*Medicago falcata* [Agrost. No. 2072] [S. P. I. No. 19534] crossed with *Medicago sativa* [Agrost. No. 18, a heavily seeded upright selection].) First plant in row.

27743. Agrost. No. 2113. (Same parent plants as Agrost. No. 2112.) First plant in row.

27744. Agrost. No. 2160. (*Medicago falcata* [S. P. I. No. 20718] crossed with *Medicago sativa* [S. P. I. No. 20775]). First plant in row.

27745. Agrost. No. 2161. (Same parent plants as Agrost. No. 2160.) First plant in row.

27746. Agrost. No. 2161. Second plant in row.

27747. Agrost. No. 2112. Second plant in row.

27748. Agrost. No. 2112. Third plant in row.

27749. Agrost. No. 2112. Fourth plant in row.

27750. Agrost. No. 2112. Fifth plant in row.

27751. Agrost. No. 2113. Second plant in row.

27752. Agrost. No. 2113. Third plant in row.

27753. Agrost. No. 2113. Fourth plant in row.

27754. Agrost. No. 2113. Fifth plant in row.

27764. ANDROPOGON SORGHUM (L.) Brot. **Sorgo.**

From Scott City, Kans. Purchased from Mr. J. K. Freed. Received April, 1910.

"Mr. Freed states that he has grown this variety for three or four years, but its origin is unknown to him. He finds it ten days earlier than ordinary *Amber* sorgo, but he plants a little more seed to the acre. In seed yield it outyields ordinary *Amber* fully 50 per cent. The following description is by Mr. Carleton R. Ball:

"'Stalk slender, 5½ to 6 feet tall; butts one-half inch to 1 inch in diameter; internodes long and slender; leaves 8 to 10; panicles well exserted, pyramidal to open oblong—the pyramidal rather sparse, the oblong more dense; rachis continuous; spikelets obovate; glumes straw colored, smooth to hairy; seeds rather obovate, pure white.'

"Mr. Ball further suggests that this may be identical with the variety cultivated many years ago under the name of '*White Seeded* or *White India.*'" (*C. V. Piper.*)

27765 to 27767.

From Mazatlan, Mexico. Presented by Dr. J. N. Rose, associate curator, Division of Plants, Smithsonian Institution, United States National Museum, Washington, D. C. Received April 23, 1910.

Seeds of the following; notes by Dr. Rose:

27765. BROMELIA sp.

(Rose No. 13982.)

27766. BROMELIA sp.

(Rose No. 13983.)

"These seem to represent different species. The fruit is sold in the market at Mazatlan."

27767. ACROCOMIA MEXICANA Karw.

"(Rose No. 13969.) A tall tree growing in low ground, fruit common in the markets in April and May. The fruits after being peeled are cooked in sugar and eaten by the poorer classes." (*Rose.*)

Distribution.—In damp woods along both coasts of tropical Mexico.

27768. PTEROCARYA FRAXINIFOLIA (Lam.) Spach.

From Elk Grove, Cal. Presented by Messrs. Tribble Bros., through Mr. Peter Bisset. Received April 28, 1910.

"An ornamental deciduous tree, attaining a height of 60 feet, of rapid growth, with spreading branches, graceful, dark-green foliage, decorated in summer and fall with the long, drooping racemes of light-green fruits. Is hardy as far north as Massachusetts. It thrives best in rich and moist soil, but also grows in drier localities. Propagated by seed and by layers and suckers." (*Extract from Bailey's Cyclopedia of American Horticulture.*)

Distribution.—In woods in the regions bordering on the southern shores of the Black and Caspian seas and in the northern part of Persia.

27769 to 27775.

From Tiflis, Caucasus, Russia. Obtained from the Botanic garden by Mr. Frank N. Meyer, agricultural explorer. Received April 26, 1910.

Cuttings of the following:

27769. MALUS SYLVESTRIS Miller. **Apple.**

From Tiflis, Caucasus, Russia. "(No. 488, Mar. 22, 1910.) A native Caucasian variety of apple, called '*Pschacha Chis.*' A winter apple excellently fitted for keeping and transport. Suitable for regions where dry and hot summers prevail." (*Meyer.*)

27770. PYRUS COMMUNIS L. **Pear.**

From Tiflis, Caucasus, Russia. "(No. 492, Mar. 22, 1910.) A native Caucasian variety of pear, called '*Dilafruz.*' Suitable for regions like No. 488 (S. P. I. No. 27769)." (*Meyer.*)

27771. PRUNUS AVIUM L. **Cherry.**

From Tiflis, Caucasus, Russia. "(No. 702, Mar. 22, 1910.) A native Caucasian variety of cherry, called '*Sari Gilaz.*' Fruits large, heart shaped, slightly compressed from the sides; color yellow; flesh light yellow, slightly translucent; taste sour-sweet; stone large, slightly oval, easily separated from pulp. Ripens at beginning of June. A very prolific bearer. Suitable for regions like No. 488 (S. P. I. No. 27769)." (*Meyer.*)

27769 to 27775—Continued.

27772. PUNICA GRANATUM L. **Pomegranate.**

From Tiflis, Caucasus, Russia. "(No. 706, Mar. 22, 1910.) A native Caucasian variety of pomegranate, called '*Schirin nar.*' Fruits of medium size, globular, compressed on the sides. Rind light red; flesh rosy white, sweet. A medium-prolific bearer." (*Meyer.*)

27773. PUNICA GRANATUM L. **Pomegranate.**

From Tiflis, Caucasus, Russia. "(No. 707, Mar. 22, 1910.) A native Caucasian variety of pomegranate, called '*Cumzi gabuch.*' Fruits very large; rind thick, red; flesh dark red, juicy, of sour-sweet taste; seeds large. A very prolific bearer. A sour-sweet sirup, called '*Nardashi,*' is prepared from the fruits with grape juice added." (*Meyer.*)

27774. PUNICA GRANATUM L. **Pomegranate.**

From Tiflis, Caucasus, Russia. "(No. 708, Mar. 22, 1910.) A native Caucasian variety of pomegranate, called '*Savalan Nar.*" (*Meyer.*)

27775. ELAEAGNUS ANGUSTIFOLIA L. **Oleaster.**

From Tiflis, Caucasus, Russia. "(No. 709, Mar. 22, 1910.) One of the best and most prolific varieties, called '*Matna-pshat.*' Fruits large, nearly cylindrical in shape; color yellowish gray, sun side dark red. Skin very thin, easily peeled off from the fruit when fully ripe. Flesh light grayish yellow, tender, and sweet. Eaten fresh or dried as a dessert, also stewed in milk as an invigorating food, or boiled with sugar as a compote. Recommended as a fruit for the home garden in the mild-wintered, rather arid sections of the United States." (*Meyer.*)

27776. CITRUS BERGAMIA Risso. **Bergamot orange.**

From Bronte, Sicily. Presented by Mr. Charles Beek, manager for the Duke of Bronte. Received April 28, 1910.

See No. 25544 for previous introduction.

27777. FURCRAEA CABUYA INTEGRA Trelease. **Cabuya blanca.**

From San Ramon, Costa Rica. Received from Mr. G. C. Worthen, through Mr. Lyster H. Dewey, April 28, 1910.

"A fiber plant native in Central America and now beginning to be cultivated on large plantations in Costa Rica. It grows on the dry highlands, and in some places at altitudes of 8,000 feet. It is occasionally subjected to temperatures in the winter nearly as low as freezing. A fiber, similar in character to sisal, but whiter and somewhat stronger than the sisal from the henequen, is produced in the leaves. This fiber may be cleaned by the same kind of machinery as that used for sisal. The plant is recommended only for Porto Rico, Hawaii, and possibly the Florida Keys." (*Dewey.*)

27778. TRIPHASIA TRIFOLIATA (L.) DC.

From Mazatlan, Mexico. Presented by Dr. J. N. Rose, associate curator, Division of Plants, U. S. National Museum, Washington, D. C. Received April 23, 1910.

"Grown as an ornamental tree at Mazatlan; 20 feet high; flowers white, fragrant; fruit small, red." (*Rose.*)

See No. 21284 for previous introduction.

Distribution.—Native locality not known; naturalized and cultivated in India, Cochin China, and most other tropical countries.

27779 to 27788. CUCUMIS MELO L. **Muskmelon.**

From Greece. Presented by Mr. Alfred L. Crowe, British vice consul, Zante, Greece. Received April 20, 1910.

Seed of the following; notes and names by Mr. Crowe:

27779 to 27784. From Cephalonia.

27779. *Bekeeria.* Large winter melon.
27780. *Cassaba.*
27781. *Black Cassaba.*
27782. *Good Cassaba.*
27783. *Black.*
27784. Winter melon.

27785 to 27788. From Zante.

27785. (No name.)
27786. White.
27787. Red.
27788. (No name.)

"*Directions for planting.*—The ground must be most carefully prepared (almost sifted) to a depth of about half a fathom (3 feet); then divided into 3-foot squares. In these squares horse dung or other pure animal manure, such as dung of goat or sheep, at least 2 years old, and well hand picked, is spread with the hand in each square at a depth of about 25 inches. Throw about 20 pounds of manure in each square and cover with a little earth, over which put another 10 pounds of manure and cover again with good earth. Plant the seed with the fingers at the depth of about 2 to 2½ inches. The best season for planting is the middle of April. Before planting the seed put it in thin muslin, well tied, and then in a plate or dish full of water, in which you leave it for about twenty-four hours to soak; then bury the seed, as it is in the muslin, in manure until it begins to sprout, when it is ready to plant." (*Crowe.*)

27789 to 27790. CHRYSOPHYLLUM CAINITO L. **Star-apple.**

From Culebra, Canal Zone, Panama. Presented by Mr. Alfred Dyer. Received April 28, 1910.

"This seed is from the same variety, but from different localities." (*Dyer.*)

See No. 27572 for description.

27791. PRUNUS CERASUS MARASCA (Host) Schneider. **Marasca cherry.**

From Dalmatia. Purchased from Mr. Ludwig Winter, Bordighera, Italy. Received May 2, 1910.

"The term '*Maraschino*' or '*Marasco*' is the name of a liquor which is distilled from cherries. This appears to be a well-known product in Dalmatia, and possibly also in other portions of southern Europe. The cherries used for this purpose are commonly known as '*Maraschino*' cherries. This name, also the names '*Marasquin*,' '*Marasca*,' and '*Marasco*,' are given by Le Roy, a leading French pomological authority, as synonyms of a variety the accredited name of which in France appears to be '*Griotte á Ratafia (Petite).*' This name signifies a liquor made from small black cherries. Whether in popular usage the name '*Maraschino*' is applied to other varieties than this one does not appear." (*H. P. Gould.*)

"The exact botanical status of the Maraschino cherry is uncertain. It has been variously placed by different botanists, some considering it a form of *Prunus cerasus*, while others look upon it as a form of *P. acida*. Still others have classified it otherwise." (*W. F. Wight.*)

27792. ACACIA DECURRENS Willd. **Black wattle.**

From Berea, Durban, Natal, South Africa. Presented by Dr. J. Medley Wood, director, Botanic Garden. Received May 2, 1910.

Distribution.—Along river banks and on mountain slopes in the provinces of Queensland, New South Wales, Victoria, and South Australia in Australia, and in the island of Tasmania.

27793. CARICA PAPAYA L. **Papaya.**

From Tlacotalpan, Vera Cruz, Mexico. Presented by Mr. Edward Everest, Hda. "La Candelaria." Received May 2, 1910.

"These seeds were taken from a very sweet, good fruit." (*Everest.*)

27794 to 27796. MEDICAGO spp.

From Paris, France. Presented by The Director, Paris Museum of Natural History, at the request of Mr. C. V. Piper. Received May 2, 1910.

Seed of the following:

27794. MEDICAGO CARSTIENSIS Wulfen.

Distribution.—In open grassy places or in thickets in the southern part of Austria, especially in Istria, Croatia, Bosnia, and Dalmatia.

27795 and 27796. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban.

27797. ROLLINIA sp.

From Horqueta, Paraguay, South America. Presented by Mr. T. R. Gwynn. Received April 27, 1910.

"Chirimoya chica colorado. This is a small red fruit, growing on a bush, and to my taste the best of all the varieties." (*Gwynn.*) (Seed.)

27798. INGA EDULIS Mart.

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received May 6, 1910.

"This is known as *Ingá cipó.* 'Cipó' here is the word for liane, given to the fruit undoubtedly on account of its curious appearance and resemblance to a liane. It is from 1 foot to 2 feet in length and about the thickness of a man's thumb, or even thicker, usually twisted and crooked. The seeds are surrounded by a pulp in texture something like that of *Theobroma grandiflorum.* This pulp is acidulous, but has little flavor." (*Fischer.*)

Distribution.—Mexico, from the vicinity of Vera Cruz, southward through Central America to the valley of the Amazon in Brazil.

27801 to 27813.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 30, 1910.

Seeds of the following:

27801. HORDEUM sp. **Barley.**

From Tiflis, Caucasus, Russia. "(No. 1302a, Mar. 20, 1910.) A sample of black winter barley used locally for horse feed (see S. P. I. No. 27829). Obtained from Mr. Eiranoff, secretary of the Agricultural Society in Tiflis." (*Meyer.*)

27801 to 27813—Continued.

27802. HALOXYLON AMMODENDRON (Meyer) Bunge. **Saxaul.**

From Tiflis, Caucasus, Russia. "(No. 1303a, Mar. 22, 1910.) A tree or tall shrub resisting alkali and aridness to a most remarkable degree. In certain sections of central Asia it is practically the only tree to be found and its wood is much used for fuel. Recommended as a windbreak and a fuel supply for the desert regions of the southwestern part of the United States. Obtained from the Tiflis Botanic Garden, the only botanic garden in the world where a plantation of this remarkable tree exists." (*Meyer.*)

See S. P. I. No. 24555 for previous introduction.

27803. MEDICAGO SATIVA L. **Alfalfa.**

From Erivan, Caucasus, Russia. "(No. 1304a, Mar. 28, 1910.) A robust form of alfalfa (Alfalfa passes here under the Tartar name '*Yondjin*'). This variety may prove of value in the southern Rocky Mountain regions where the climate very much resembles that of Erivan. For general climatic information for this and other numbers from Erivan see note on Nos. 711 to 750 (S. P. I. Nos. 27611 to 27650)." (*Meyer.*)

27804. CITRULLUS VULGARIS Schrad. **Watermelon.**

From Erivan, Caucasus, Russia. "(No. 1305a, Mar. 28, 1910.) Mixed local varieties reputed to be of fine quality. There are said to be red and yellow ones among these. To be tested under irrigation in the hot-summered, arid, and semiarid sections of the United States." (*Meyer.*)

27805. CUCUMIS MELO L. **Muskmelon.**

From Erivan, Caucasus, Russia. "(No. 1306a, Mar. 28, 1910.) A celebrated local variety of muskmelon, called '*Dootma*,' said to be very fine. To be tested like No. 1305a (S. P. I. No. 27804)." (*Meyer.*)

27806. CUCUMIS SATIVUS L. **Cucumber.**

From Erivan, Caucasus, Russia. "(No. 1307a, Mar. 28, 1910.) A local variety of cucumber, half long, green, trained on stakes. To be tested like No. 1305a (S. P. I. No. 27804)." (*Meyer.*)

27807. RAPHANUS SATIVUS L. **Radish.**

From Erivan, Caucasus, Russia. "(No. 1308a, Mar. 28, 1910.) A local variety of radish, large, round, and of bright-red color. A spring vegetable. To be tested like No. 1305a (S. P. I. No. 27804)." (*Meyer.*)

27808. RAPHANUS SATIVUS L. **Radish.**

From Erivan, Caucasus, Russia. "(No. 1309a, Mar. 28, 1910.) A local variety of radish, large, long, and of white color. A spring vegetable. To be tested like No. 1305a (S. P. I. No. 27804)." (*Meyer.*)

27809. ALLIUM CEPA L. **Onion.**

From Erivan, Caucasus, Russia. "(No. 1310a, Mar. 28, 1910.) A Caucasian variety of white winter onion, very sweet and rather solid. To be tested like No. 1305a (S. P. I. No. 27804)." (*Meyer.*)

27810. ABELMOSCHUS ESCULENTUS (L.) Moench. **Okra.**

From Erivan, Caucasus, Russia. "(No. 1311a, Mar. 28, 1910.) A native Caucasian variety of okra, said to be fine. This vegetable passes here under the Tartar name of '*Pam-ya*.' To be tested like No. 1305a (S. P. I. No. 27804)." (*Meyer.*)

27801 to 27813—Continued.

27811. LEPIDIUM SATIVUM L.

From Erivan, Caucasus, Russia. "(No. 1312a, Mar. 28, 1910.) A native vegetable called in the Tartar language '*Kodim*,' apparently a broad-leaved variety of the garden cress. It is grown out in the open, on protected places, throughout the winter, and eaten raw as a salad with meats. Recommended as a winter green in the southern United States." (*Meyer.*)

27812. OCIMUM BASILICUM L.

From Erivan, Caucasus, Russia. "(No. 1313a, Mar. 28, 1910.) A Caucasian summer vegetable, called in the Tartar language '*Rahan.*'" (*Meyer.*)

Distribution.—Probably native in the Punjab regions of India; generally cultivated as a pot herb.

27813. SATUREJA HORTENSIS L.

From Erivan, Caucasus, Russia. "(No. 1314a, Mar. 28, 1910.) A Caucasian summer vegetable, said to grow only a few inches high, called in the Tartar language '*Marza.*'" (*Meyer.*)

Distribution.—The countries bordering on the Mediterranean; frequently cultivated in kitchen gardens.

27814 to 27829.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 28, 1910.

Seeds of the following:

27814. CICER ARIETINUM L. **Chick-pea.**

From Tiflis, Caucasus, Russia. "(No. 1273a, Mar. 19, 1910.) A variety of chick-pea, said to come from the vicinity of Gori, central Caucasus. There are apparently several strains in this lot. These chick-peas remain somewhat hard, even after being boiled a long time. See note on No. 1259a (S. P. I. No. 27513)." (*Meyer.*)

27815. CICER ARIETINUM L. **Chick-pea.**

From Tiflis, Caucasus, Russia. "(No. 1274a, Mar. 19, 1910.) A variety of chick-pea, said to come from Cacheti, central Caucasus. Considered a finer variety than the preceding and becomes quite soft when boiled. See note on No. 1259a (S. P. I. No. 27513)." (*Meyer.*)

27816. LENS ESCULENTA Moench. **Lentil.**

From Tiflis, Caucasus, Russia. "(No. 1275a, Mar. 19, 1910.) This lentil is eaten by the natives boiled in soup, and although small, is said to have a much finer taste than the large ones. In America this legume may perhaps be of value as a fodder or cover plant in the semiarid sections." (*Meyer.*)

27817. PHASEOLUS COCCINEUS L.

From Tiflis, Caucasus, Russia. "(No. 1276a, Mar. 19, 1910.) A large white bean, said to grow in Kherson Government, southwest Russia, where the climate is warm and rather dry in summer. These beans are much eaten by Jewish residents in Russia. To be tried in the semiarid sections of the United States." (*Meyer.*)

27818. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1277a, Mar. 19, 1910.) A round, yellow bean, said to be early; comes from the Kherson Government, southwest Russia. To be tried in semiarid sections of the United States." (*Meyer.*)

27814 to 27829—Continued.

27819. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1278a, Mar. 19, 1910.) A round, white bean, said to be very productive; comes from the Kherson Government in southwest Russia. To be tried in semiarid sections of the United States." (*Meyer.*)

27820. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1279a, Mar. 19, 1910.) A small, white bean; comes from the Kherson Government, southwest Russia. Much eaten by Jewish residents in Russia. To be tried in semiarid sections of the United States." (*Meyer.*)

27821. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1280a, Mar. 19, 1910.) A long, white bean, native to this section of the Caucasus. To be tried in semiarid sections of the United States." (*Meyer.*)

27822. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1281a, Mar. 19, 1910.) A round, speckled bean, native to the Caucasus and often seen exposed for sale. To be tried in semiarid sections of the United States." (*Meyer.*)

27823. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1282a, Mar. 19, 1910.) A long, speckled bean, native to the Caucasus. To be tried in semiarid sections of the United States." (*Meyer.*)

27824. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1283a, Mar. 19, 1910.) A handsome, long, red bean. An old native Caucasian variety said to come from Vladikavkas. Very much liked by the natives who use beans in summer instead of meats. To be tried in semiarid sections of the United States." (*Meyer.*)

27825. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1284a, Mar. 19, 1910.) A round, thick, dark-red bean, native to the Caucasus. Much eaten by the native population. To be tried in semiarid sections of the United States." (*Meyer.*)

27826. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1285a, Mar. 19, 1910.) A flat, red bean, native to the Caucasus. To be tried in semiarid sections of the United States." (*Meyer.*)

27827. PANICUM MILIACEUM L.

From Tiflis, Caucasus, Russia. "(No. 1291a, Mar. 22, 1910.) A large-grained, white proso, considered to be the best variety in Tiflis. To be tested in regions with a limited rainfall. Purchased in Tiflis." (*Meyer.*)

27828. PANICUM MILIACEUM L.

From Tiflis, Caucasus, Russia. "(No. 1292a, Mar. 22, 1910.) A reddish proso, said to be very drought resistant. Purchased in Tiflis, in the vicinity of which it grows. To be tried in semiarid regions." (*Meyer.*)

27829. HORDEUM VULGARE NIGRUM (Willd.) Beaven. **Black barley.**

From Tiflis, Caucasus, Russia. "(No. 1301a, Mar. 23, 1910.) This is grown in the vicinity of Tiflis, mostly as a winter grain, and extensively used as a feed for horses instead of oats, as the last do not grow well in the Caucasus. This barley is generally soaked over night before being fed to the animals." (*Meyer.*)

27830 to 27838. MANGIFERA INDICA L. **Mango.**

Grown at the Department Greenhouse, Washington, D. C. Numbered May 3, 1910.

Plants of the following seedling Philippine mangos, selected for propagation by grafting, for distribution and testing, to determine how nearly these varieties come true from seed:

27830 and 27831. *Carabao.* Grown from S. P. I. No. 25938.

27832 to 27834. *Pico.* Grown from S. P. I. No. 25939.

27835 to 27838. *Lyon.* Grown from S. P. I. No. 25940, which was introduced under the class name of *Pahutan.*

27839 to 27842.

From Callao, Peru, South America. Presented by Rev. V. M. McCombs. Received May 5, 1910.

27839. SOLANUM sp. **Potato.**
Yellow. (Tubers.)

27840 and 27841. ANONA CHERIMOLA Miller. **Cherimoya.**
27840. (Seeds.) **27841.** (Cuttings.)

27842. LUCUMA sp. (Seeds.)

27843 to 27845.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 3, 1910.

27843. IRIS sp.

From near Helenendorf, Caucasus, Russia. "(No. 769, Apr. 8, 1910.) An iris, perhaps *I. paradoxa*, found on a dry, stony mountain slope, and growing but a few inches high. May be of value as a low-growing edging plant in semiarid regions." (*Meyer.*) (Rhizomes.)

27844. GLADIOLUS SEGETUM Gawl.

From near Geok-Tepe, Caucasus, Russia. "(No. 770, Apr. 12, 1910.) A wild gladiolus occurring on dry mountain slopes. To be tested in breeding experiments." (*Meyer.*) (Bulbs.)

Distribution.—From the Madeira and Canary Islands eastward through northern Africa and southern Europe to Persia and Turkestan.

27845. TULIPA EICHLERI Regel.

From near Geok-Tepe, Caucasus, Russia. "(No. 771, Apr. 12, 1910.) An ornamental species of tulip having large, bright-red flowers that stand on long stems. Found growing on dry places in the mountains at several hundred feet elevation." (*Meyer.*)

Distribution.—In the vicinity of Baku in the Transcaucasian region and in the Kohrud Mountains of northern Persia.

27846 and 27847. MALUS SYLVESTRIS Miller. **Apple.**

From Santa Ines, Chile. Presented by Mr. Salvador Izquierdo. Received May 2, 1910.

Cuttings of the following:

27846. *Admirable de Otono de Santa Ines.* "This tree produces a large fruit, somewhat flattened; color green, inclined to yellow, with vertical, reddish stripes; fruit sweet, acidulous, juicy, and very aromatic; an excellent variety; ripens here at the end of April. The tree is very vigorous and absolutely unattackable by the woolly aphis. I consider it an excellent market fruit." (*Izquierdo.*)

27846 and 27847—Continued.

27847. *Huidobro.* "This is known, also, to the few people who have it, as *Araucana.* It is, perhaps, the most valuable winter apple, since it is absolutely immune to the woolly aphis and other pests. It is a vigorous and prolific tree, produces a large uniformly golden-yellow fruit, which keeps until October or November in Chile. Of very characteristic taste and consistency, such as is found in no other apple of the collection at Santa Ines. It will be of great value for the planting of commercial orchards, as its fruit is firm and ships well. The horticulturist who created this variety thinks he has made a valuable addition to our fruit trees. It originated from an Italian seed sown in Chile at 'Principal,' the estate of Señor Vicente G. Huidobro." (*Extract from Publicaciones de la Estacion de Patolojia Vejetal de Chile, No. 3. El Pulgon Lanijero de los Manzanos by Gaston Lavergne. p. 6.*)

27848 and 27849. MANGIFERA INDICA L. **Mango.**

From Kingston, Jamaica. Purchased from the Tangley Fruit Co., Mr. Aston W. Gardner, manager. Received May 5, 1910.

Seeds of the following:

27848. *Maharajah.* "Fruit roundish oblique, flattened, $4\frac{1}{8}$ by $3\frac{3}{16}$ by $2\frac{7}{8}$ inches. Cavity shallow, with a distinct suture extending 2 inches from stem. Beak, medium, about 1 inch from end of fruit. Surface, moderately smooth, some fine undulations. Color, greenish yellow, shading to rich yellow. Dots, very numerous, yellow. Skin, thick, tenacious. Flesh, rich yellow, tender, but very fibrous. Flavor, sweet, pleasant quality, if fiber was not so abundant would be good. Seed, flat, oval, covered with a dense coat of fiber, medium size 3 by $1\frac{11}{16}$ by 7/8 inch." (*William A. Taylor.*)

27849. *Mangalore.* "Fruit oblong, oblique, flattened, $4\frac{1}{16}$ by $3\frac{5}{8}$ by $2\frac{5}{8}$ inches. Cavity, shallow, small furrows without suture. Stem, very slender, with bracts. Beak, small, one-sixteenth inch above general surface, seven-eighths inch from end center. Surface, moderately smooth. Color, yellow, with marblings of green. Dots, numerous, yellow. Skin, thick, tenacious. Flesh, deep yellow, tender except for fiber, juicy. Flavor, mild, subacid, quality good. Seed, flat, oval, $3\frac{1}{2}$ by $2\frac{1}{8}$ by 7/8 inch." (*William A. Taylor.*)

27850 to 27855.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received May 6, 1910.

Seeds of the following:

27850. DIOSPYROS sp. **"Mambolo."**

27851. GUSTAVIA sp.

27852. MIMUSOPS CORIACEA (DC.) Miq.

Distribution.—In woods on the islands of Madagascar and Mauritius.

27853 to 27855. MANGIFERA INDICA L. **Mango.**

27853. *Auguste.*

27854. *Cuiller.*

27855. *José.*

27856 to 27858. CITRULLUS VULGARIS Schrad. **Watermelon.**

From Roumania. Procured by Mr. Horace G. Knowles, formerly American consul at Bucharest, now American minister resident and consul general, Santo Domingo, Dominican Republic. Received February 25, 1910.

27856 to 27858—Continued.

Seeds of the following; notes taken from the sacks:

27856. "*Rattlesnake Junior.* Small, striped, oval; meat dark pink."

27857. "*Carmen Sylva.* Meat perfectly white."

27858. "*Princess Marie.* I am sure this is seed of the dark-green skin and dark-red meat variety, the kind most grown in Roumania."

27859 to 27872. VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Monetta, S. C. Grown by Mr. J. M. Johnson, crop of 1909. Numbered for convenience in recording distribution May 7, 1910.

Seeds of the following:

27859 to 27861. Hybrids between *Iron* and *Black.*

27859. (P. B. No. 14a4-1-3-1.)

27860. (P. B. No. 14a4-1-3-4.)

27861. (P. B. No. 14a8-5-3-1.)

27862 to 27866. Hybrids between *Iron* and *Large Blackeye.*

27862. (P. B. No. 17b2-2-1.)

27863. (P. B. No. 17b2-2-2.)

27864. (P. B. No. 17b2-2-3.)

27865. (P. B. No. 17b2-2-4.)

27866. (P. B. No. 17c2-2-2.)

27867 to 27871. Hybrids between *Iron* and *Whippoorwill.*

27867. (P. B. No. 18b1-2-3.)

27868. (P. B. No. 18b1-2-4.)

27869. (P. B. No. 18b5-1-1.)

27870. (P. B. No. 18b5-1-2.)

27871. (P. B. No. 18b9-1-1.)

27872. *Iron.*

27873. SAPIUM JENMANI Hemsl.

From Georgetown, Demarara, British Guiana. Presented by Mr. F. A. Stockdale, assistant director and Government botanist, Science and Agriculture Department, Botanic Gardens. Received May 5, 1910.

"A rubber-producing plant, that should be planted in a humid situation, shaded from the wind. It does best here in well-drained, fully cleared clayey-peaty land some distance up the rivers, and is making most excellent growth at our experiment stations. In heavy clay soils, exposed to wind, this plant does not grow luxuriantly, developing into a shrubby bush very liable to attacks from *Lecanium* scale." (*Stockdale.*)

"A tall forest tree growing in the low, warm forests of British Guiana and said to be the principal, if not the only, source of the rubber exported from that colony. This rubber has a wonderful elasticity and fetches the highest prices in the English markets. It is extracted as *scrap* by the native Indians. This tree might be grown with good results in the Philippine Islands." (*H. Pittier.*)

Distribution.—In the alluvial forests of the Pomeroon district of British Guiana.

27874. (Undetermined.)

From Horqueta, Paraguay, South America. Presented by Mr. T. R. Gwynn. Received May 6, 1910.

"*Ymangazu*, Paraguay rubber seed." (*Gwynn.*)

27875 and 27876. TRITICUM spp. **Wheat.**

From the plains of Thebes near the colossi of Memnon, Egypt. Presented by Mr. A. J. Perkins. Received April 29, 1910.

Seeds of the following:

27875. Small, dark kernels. **27876.** Large, white kernels.

27877 to 27887.

From Malkapur, Berar, India. Presented by Mr. A. S. Dhavale, care of Mr. V. B. Savaji. Received April 30, 1910.

Seed of the following. Unless otherwise stated, notes by Mr. Dhavale.

27877 to **27879.** ANDROPOGON SORGHUM (L.) Brot. **Durra.**

"*Juar.* The chief food and fodder crop of this section."

27877. "One of the inferior kinds."

"A form of durra with obovate white seeds of medium size, about equaled by the transversely wrinkled glumes which are coriaceous and black at the base, greenish white and papery above the transverse shoulder." (*Carleton R. Ball.*)

27878. "The best and superior kind."

"A form of durra with rather large, broadly obovate or subrotund, pearly-yellow seeds which exceed the coriaceous, greenish-yellow glumes which are transversely wrinkled and often dark in color below the wrinkle." (*Carleton R. Ball.*)

27879. "One of the inferior kinds."

"Apparently similar to No. 27877, but the seeds are rather larger and the outer part of the glumes more coriaceous." (*Carleton R. Ball.*)

27880 and 27881. CROTALARIA spp.

"*Bichawa.* A wild legume for green manuring."

27880. CROTALARIA JUNCEA L.

See No. 26356 for description.

27881. CROTALARIA sp.

"The rare kind."

27882 and 27883. DOLICHOS LABLAB L. **Bonavist bean.**

27882. "*Val.* Blackish green, short pod. A garden vegetable crop, also used for green manure."

27883. "*Val.* White, short pod. A garden vegetable crop also used for green manure."

27884. LATHYRUS SATIVUS L.

"*Lakha.* A leguminous fodder and food crop."

27885. PENNISETUM AMERICANUM (L.) Schum. **Pearl millet.**

"*Bajra.* The secondary food and fodder crop."

27886. PHASEOLUS ACONITIFOLIUS Jacq.

"*Matha.* A leguminous fodder and food crop."

27887. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

"*Val.* White, long pod. A garden vegetable crop, also used for green manuring."

27903. SOLANUM ETUBEROSUM Lindl. (?)

From near the baths of Chillian, Chile, at an altitude of about 2,200 metres above sea level. Received through Mr. José D. Husbands, Limavida, Chile, May 2, 1910.

"A friend of mine procured these seeds from a plant which, he says, is very much like a potato. The tubers could not be obtained, as they were growing in the dirt, within the crevices of rocks, very deep down. This may possibly be *Solanum etuberosum*." (*Husbands.*)

27904 to 27924. CRYPTOCARYA RUBRA (Mol.) Skeels.

From central Chile. Received through Mr. José D. Husbands, Limavida, Chile, May 12, 1910.

"Seeds of different strains of this tree each showing some variation in fruit, leaf, growth, etc." (*Husbands.*)

Distribution.—Found in the woods and along streams, in the vicinity of Antuco, in central Chile.

See Nos. 23897 and 24310 for previous introductions.

27925. QUERCUS CORNEA Lour. **Oak.**

From Hongkong, China. Purchased from Mr. W. J. Tutcher, superintendent, Botanical and Forestry Department. Received at the Plant Introduction Garden, Chico, Cal., April, 1910.

See No. 10633 for description. (Seed.)

Distribution.—In the vicinity of Hongkong and Hainan in China, in the province of Tongking in Cochin China, and in the islands of Borneo and Java.

27926 to 27928. MANGIFERA INDICA L. **Mango.**

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received May 12, 1910.

Seed of the following:

27926. *Aristide.* "The best of our mangos." (*Regnard.*)

27927. *Baissac.*

27928. *Maison Rouge.*

27929. FLACOURTIA RAMONTCHI L'Herit.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received May 12, 1910.

See No. 26655 for previous introduction. (Seeds.)

27930. VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Atlanta, Ga. Purchased from Messrs. H. G. Hastings & Co. Received May 11, 1910.

"*The Quick pea.*—This is strictly a new variety found by us in the hands of an Atlanta market gardener. We call it the Quick pea, because it is the quickest in market. It is of rather low, bushy growth, but every pod is ripened up above the foliage, long stems being thrown up. Every pod grows entirely in the sun. It makes quick, plenty of long, slender, meaty, fine-flavored pods for use as snaps, coming in before anything else. Three crops a year can be grown." (*Hastings's Catalogue No. 37, Spring, 1909.*)

27931. ALYSICARPUS VAGINALIS (L.) DC.

From Alabang Riyal, Philippine Islands. Presented by Mr. Le Roy J. Fattey at the request of Mr. J. B. Thompson, Special Agent in Charge, Agricultural Experiment Station, Island of Guam. Received May 6, 1910.

Known in the Philippine Islands as "*Manimanian.*"

See No. 26786 for description.

27932. RHEEDIA EDULIS (Seem.) Planch. & Triana. **Sastra.**

From Puerto Mutis, Republic of Panama. Presented by Mr. W. M. Morse, Boston Panama Company, at the request of Mr. H. F. Schultz. Received May 12, 1910.

See No. 27485 for description.

27933. HORDEUM sp. **Barley.**

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 28, 1910.

White seeded.

NOTE.—This was picked out of a lot of black-seeded barley received under Meyer No. 1301a (S. P. I. No. 27829). See this number for remarks.

27934. GOSSYPIUM sp. **Cotton.**

From Unsan, Korea. Presented by Mr. J. D. Hubbard. Received May 16, 1910.

"This seed was all grown north of the fortieth parallel, and is probably the hardiest cotton in existence. On favorable soil in Korea this plant grows waist high and has many pods; these are not gathered until the bush has been killed by frost in late October or November. This variety has undoubtedly gained in hardiness during the ages it has been planted by the northern Koreans. The main article of clothing among the Koreans is the cotton suit, made from this home product." (*Hubbard.*)

27935. OPUNTIA sp.

From Manila, Philippine Islands. Presented by Mr. W. S. Lyon. Received May 17, 1910.

"An absolutely spineless opuntia. I fancy it is not indigenous, because I have only found it about habitations. I will warrant it with never a rudimentary spine. It is a 'buster' for size, makes a woody caudex as thick as a man's thigh, grows 11 to 13 feet tall and of like diameter of crown. For such things as might eat it, it would, I should think, crop a modest 200 tons or so per acre." (*Lyon.*)

27936. ZEA MAYS L. **Corn.**

From Guadalajara, Mexico. Procured by Hon. Samuel E. Magill, American consul. Received May 18, 1910.

Jala.

27937 to 27946. ZEA MAYS L. **Corn.**

From Guerrero, Mexico. Procured by Mr. Marion Letcher, American consul at Acapulco, Mexico. Received May 16, 1910.

Seeds of the following; descriptive notes as given by Mr. Letcher:

27937. *Conejo Blanco.* "Average length of ears 5½ inches, average gross weight of ears 95 grams, average weight of cob 15 grams, net weight of corn on ear 80 grams. This corn is planted at the beginning of the rainy season for quick maturity. The crop can be gathered forty to fifty days after planting."

27937 to 27946—Continued.

27938. *Morado Breve.* Average length of ear 5 inches, average gross weight of ear 54 grams, average weight of cob 11 grams, average net weight of corn to ear 43 grams. As will be noted by the weights given above, the ears are very small. The grains are also very small and dark purple in color. It is planted as soon as the rains commence in June, and is gathered in forty or fifty days from time of planting."

27939. *Escorpioncillo.* "Average weight per ear, gross, 125 grams, average weight of cob 20 grams, average net weight of corn to ear 105 grams, average length of ear 7 inches. This is also an early maturing variety, but requires about ten days more than the two preceding."

27940. *Zapalote morado* or *Bandeno.* "Average length of ear 7½ inches, average gross weight 190 grams, average weight of cob 33 grams, average net weight of corn to ear 157 grams. Matures about seventy days after planting. Makes a fine forage crop because of the number and size of blades."

27941. *Zapalote Blanco.* "Average length per ear 7 inches, average gross weight 170 grams, average weight of cob 29 grams, average net weight of corn to ear 141 grams. Same as the preceding except that it has somewhat smaller ears and fewer blades."

27942. *Olote Colorado.* "Average length of ear 6½ inches, average gross weight of corn 148 grams, average weight of cob 30 grams, average net weight of corn to ear 118 grams. The term 'Colorado' (red) refers to the color of the cob. This variety matures in eighty days after planting."

27943. *Olotillo.* "Average length of ear 6 inches, average gross weight of ear 110 grams, average weight of cob 15 grams, average net weight of corn to ear 95 grams. Matures in ninety days."

27944. *Maizon.* "Average length of ear 7½ inches, average gross weight of ear 150 grams, average weight of cob 24 grams, average net weight of corn to ear 126 grams. Matures in ninety days. Resembles the preceding but give a stronger and heavier plant. Yield per plant larger than any other plant described."

The preceding numbers were grown on the "La Luz" hacienda, of which Uruñuela Hermanos of this place are the proprietors.

27945. *Magueyano.*

27946. *Laguneno.*

"These two varieties were presented by Mr. Carlos Miller, Cuajiniquilapa, Guerrero, but without any descriptive notes. Mr. Miller is one of the most progressive farmers of the State, and the two samples submitted doubtless represent the best varieties planted on his lands."

27949. POLYGONUM TINCTORIUM Lour.

From Yokohama, Japan. Purchased from Yokohama Nursery Company. Received May 16, 1910.

"Introduced for trial as a nectar-producing crop to be grown on waste lands, in cooperation with the Bureau of Entomology, also for testing as a tannin plant." (*R. A. Young.*)

Distribution.—The provinces of Shingking, Szechwan, and Kwangtung, in the Chinese Empire; near Seoul in Korea, and commonly cultivated in Japan.

27950. SAPINDUS SAPONARIA L.

From Vera Cruz, Mexico. Presented by Mr. William W. Canada, American consul at Vera Cruz. Received May 19, 1910.

"This berry-like fruit grows in clusters like the grape, and a tree will have at one time as many as one hundred of these clusters. The tree generally attains a height of from 10 to 15 feet and is very leafy and spreading. They abound in the vicinity of Vera Cruz, where the fruit is known by the name of '*Jaboncillo*.'

"The remarkable saponaceous properties of the fruit would warrant one to believe that it may possess a commercial value. If one of the berries be cut open by passing a sharp knife around its middle, a black, hard seed will drop therefrom, and the pulp and shell are the parts that appear to contain the soapy properties. When rubbed upon a wet hand, a good cleansing lather is immediately formed, one that to all appearances has been produced by ordinary soap." (*Canada.*)

27951. VACCINIUM VITIS-IDAEA MINOR Lodd. **Mountain cranberry.**

From Charlottetown, Prince Edward Island, Canada. Procured through Mr. Frank Deedmeyer, American consul. Received May 19, 1910.

See No. 26420 for previous introduction.

27952 to 27954.

From Honolulu, Hawaii. Procured by Mr. J. E. Higgins, horticulturist, Agricultural Experiment Station. Received May 18, 1910.

27952 and 27953. VACCINIUM RETICULATUM Smith. **Ohelo.**

27952. (Root cuttings.) **27953.** (Seeds.)

"A shrub closely related to the blueberries of the eastern United States, but bearing a larger berry of a light-red color. The fruit is described as edible, though somewhat astringent. Preserves and jelly are made from it. The plant is celebrated in the native song and ceremonial of Hawaii because of the beauty of its berries and the occurrence of the bush on high mountain summits. These roots and seeds have been imported for use in experiments on the domestication of the blueberry." (*Frederick V. Coville.*)

Distribution.—In woods on the upper slopes of the mountains in the Hawaiian Islands.

27954. CLAUCENA LANSIUM (Lour.) Skeels.

"The trees which I have seen in Hawaii are about 18 to 20 feet high and bear quite freely, their fruits are about the size of a cherry, and straw yellow in color, very much like the longan. The fruit is very highly prized by the Chinese." (*Higgins.*)

See No. 25546 for previous introduction.

27955. EUPHORBIA RESINIFERA Berg.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received May 23, 1910.

"This is a cactuslike plant of the mountainous parts of Morocco, furnishing the gum resin known to the crude drug market as euphorbium. In the month of September, after the rains have set in, the plant becomes very full of a milky sap contained in numerous unbranched latex tubes. The plants are slashed with cutting apparatus, and the milky juice, exuding in quantity, dries on the surface of the plant in irregular masses. These are torn off by the natives and shipped to commercial centers from the ports of Morocco. Owing to the irritating character of the material,

27955—Continued.

the natives protect the mouth and nose with cloths while working on this product." (*R. H. True.*)

Distribution.—The lower slopes of the Atlas Mountains in Morocco.

27956. GOSSYPIUM BARBADENSE L. **Cotton.**

From Trujillo, Honduras. Presented by Mr. T. S. Chaffee, through Dr. J. N. Rose, Associate Curator, Division of Plants, U. S. National Museum, Washington, D. C. Received May 23, 1910.

"A sample of sea island cotton grown here from seed planted the latter part of August, 1909. The stalk measured 10½ feet in height and bore 78 bolls and 6 blossoms." (*Chaffee.*)

27957. FEIJOA SELLOWIANA Berg. **"Guayuba."**

From Salto, Uruguay. Presented by Mr. John J. C. Williams. Received May 23, 1910.

For description see S. P. I. Nos. 26120 and 26121.

27958. ROYENA PALLENS Thunb.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, Government agrostologist and botanist. Received May 23, 1910.

"*Blaauw-bosch.* A bush growing in the semitropical and southwestern districts of the Transvaal, the fruit of which is said to be edible." (*Davy.*)

Distribution.—Along the margins of the woods in southern Africa, extending from Lower Guinea and the Mozambique district southward to the Cape, rising to an elevation of 5,000 feet in Natal.

27959. CACARA EROSA (L.) Kuntze.

From Tampico, Mexico. Presented by Dr. Edward Palmer. Received May, 1910.

"*Jicama de Aqua.* This is the finest and most valued variety, because of the agreeable water it affords. Travelers carry a supply of the roots as a substitute for water. This winter it was for sale at many street corners." (*Palmer.*)

See No. 22971 for previous introduction.

27960. CANNABIS SATIVA L. **Hemp.**

From Gumma Prefecture, Japan. Purchased from the Yokohama Nursery Company, Yokohama, Japan. Received May 21, 1910.

A large variety of hemp, said to be 10 feet long.

27961 to 27968.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 18, 1910.

Cuttings of the following:

27961. PUNICA GRANATUM L. **Pomegranate.**

From near Yelisavetpol, Caucasus, Russia. "(No. 753, Apr. 6, 1910.) A variety of pomegranate called in the Tartar language '*Kizil Kabuch.*' Fruits very large, sometimes 5 inches in diameter, of bright-red color; flesh of sour-sweet taste. Ripens in October and keeps for about four months. Obtained from the Vohrer Estate, Karaji.

"Yelisavetpol is famous for its pomegranates, which are said to be of finer quality than any place else in the Caucasus." (*Meyer.*)

27961 to 27968—Continued.

27962. PUNICA GRANATUM L. **Pomegranate.**

From near Yelisavetpol, Caucasus, Russia. "(No. 754, Apr. 7, 1910.) The wild pomegranate which grows everywhere in the eastern part of the Caucasus and stands drought, heat, sterility of soil, etc., to a remarkable degree. The fruits are small and sour, but their juice can be used as a digestive seasoning with meats and game. Recommended as a hedge plant in mild-wintered, semiarid regions." (*Meyer.*)

27963. VITIS VINIFERA L. **Grape.**

From Yelisavetpol, Caucasus, Russia. "(No. 761, Apr. 5, 1910.) A tall grape of local origin, called '*Tavrish*' (synonyms *Handja Gandja* and *Blanc de Gangin*). Bunch medium large; berries round, medium size, of a pale-yellow color, very sweet; skin slightly hard. A very good shipper and keeper, being seen on the market until early summer." (*Meyer.*)

27964. VITIS VINIFERA L. **Grape.**

From Yelisavetpol, Caucasus, Russia. "No. 762, Apr. 5, 1910.) A native Caucasian grape called '*Achshira*' (Tartar), passing, however, with the German settlers in the Caucasus under the name of '*Ronde Weisse.*' Bunches medium large; berries medium size, round, white in color. Phenomenally productive. Gives a light white wine of good quality. Very much planted in this vicinity, seeming to prefer a rather heavy soil." (*Meyer.*)

27965. PUNICA GRANATUM L. **Pomegranate.**

From Geok-Tepe, Caucasus, Russia. "(No. 765, Apr. 12, 1910.) A pomegranate of apparently local distribution, called '*Valas.*' Fruits very large, of rosy-red color, very juicy and of sour-sweet taste. Considered a very fine variety. Obtained from Mr. A. Shelkovnikoff." (*Meyer.*)

27966. PUNICA GRANATUM L. **Pomegranate.**

From Geok-Tepe, Caucasus, Russia. "(No. 766, Apr. 12, 1910.) A pomegranate called '*Kyrmisi Kabugh.*' Fruits large, bright red, of sour-sweet taste. Obtained from Mr. A. Shelkovnikoff. Perhaps the same as No. 707 (S. P. I. No. 27773)." (*Meyer.*)

27967. PUNICA GRANATUM L. **Pomegranate.**

From Geok-Tepe, Caucasus, Russia. "(No. 767, Apr. 12, 1910.) A pomegranate called '*Shirin nar.*' For description see No. 706 (S. P. I. No. 27772), which is the same. Obtained from Mr. A. Shelkovnikoff." (*Meyer.*)

27968. MALUS PUMILA Miller. **Paradise apple.**

From Geok-Tepe, Caucasus, Russia. "(No. 768, Apr. 11, 1910.) A bushy apple, apparently rarely growing over 5 feet in height. A native of the Caucasus, from whence it was probably introduced into western Europe, where it is now so extensively used as a dwarfing stock for apples. This shrubby apple produces red fruits of fair quality, is very drought resistant, and stands high summer temperatures. May be used in hybridization work and in creating a strain of bush apples." (*Meyer.*)

Distribution.—Cultivated and naturalized in central and eastern Europe and in western Asia.

27969. SICANA ODORIFERA (Vell.) Naud. **Cassabanana.**

From Guatemala. Presented by Capt. A. F. Lucas.
Received May 21, 1910.

27969—Continued.

See No. 11720 for previous introduction.

Distribution.—From southern Mexico and Guatemala southeastward to the province of Sao Paulo in Brazil, and in the West Indies.

27970 to 27977.

From Cambridge, England. Presented by the Director of the Botanic Gardens, Cambridge University. Received April 22, 1910.

Seed of the following:

27970. CHAETOCHLOA MACROSTACHYA (H. B. K.) Scribn. & Merrill.

Distribution.—In dry soil from Texas southward through Mexico and Central America to Brazil.

27971. CHAETOCHLOA sp.

27972. MELILOTUS DENTATA (W. & K.) Pers.

27973. MELILOTUS INDICA (L.) All.

27974 to 27976. PISUM ARVENSE L. **Pea.**

27977. PISUM SATIVUM UMBELLATUM L.

27978. STIZOLOBIUM sp.

From Tamsui, Formosa. Presented by Mr. Samuel C. Reat, American consul. Received May 24, 1910.

27979. MEDICAGO SATIVA L. **Alfalfa.**

From between Dushet and Passanaura, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 20, 1910.

"(No. 1333a, Apr. 30, 1910.) A small-leaved variety growing in stony débris that has been washed from the mountain sides. Found at an elevation of between 4,000 and 5,000 feet above sea level. Roots sent under No. 777 (S. P. I. No. 28043); see this number for further description." (*Meyer.*)

27980 to 27995.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 21, 1910.

Seeds of the following:

27980. MEDICAGO SATIVA L. **Alfalfa.**

From Erivan, Caucasus, Russia. "(No. 1315a, Mar. 28, 1910.) An alfalfa, passing locally under the Tartar name '*Yondjin.*' This lot is supposed to be a more drought-resistant strain than No. 1304a (S. P. I. No. 27803), but as statements from native dealers can not be depended on, it may not be so. In Yelisavetpol I was informed that Erivan alfalfa lasts ten years, while Turkestan alfalfa lasts only six. In case this should be so it makes this a much more valuable forage plant than the central Asian strains. See also remarks under No. 1304a (S. P. I. No. 27803), which is probably the same." (*Meyer.*)

27981. MEDICAGO SATIVA L. **Alfalfa.**

From near Yelisavetpol, Caucasus, Russia. "(No. 1316a, Apr. 8, 1910.) An alfalfa found along the banks of a dry river bed. Roots sent under No. 763." (*Meyer.*)

27980 to 27995 —Continued.

27982. MEDICAGO SATIVA L. **Alfalfa.**

From near Yelisavetpol, Caucasus, Russia. "(No. 1317a, April 7, 1910.) An alfalfa found wild on the brinks of ravines, in open plains, and along roads. Grows on rather heavy clayey soil. Roots sent under No. 756." (*Meyer.*)

27983. VICIA FABA L. **Broad bean.**

From Yelisavetpol, Caucasus, Russia. "(No. 1318a, April 7, 1910.) A small variety of broad bean, grown as a garden vegetable by the Persian population." (*Meyer.*)

27984. PHASEOLUS VULGARIS L. **Bean.**

From Yelisavetpol, Caucasus, Russia. "(No. 1319a, April 7, 1910.) A local variety of running garden bean, called '*Kolo-lobia.*' Considered locally one of the finest beans grown for culinary purposes. Can be eaten green as well as dried. To be tested under irrigation in the hot-summered, arid, and semi-arid sections of the United States." (*Meyer.*)

27985. PHASEOLUS VULGARIS L. **Bean.**

From Geok-Tepe, Caucasus, Russia. "(No. 1320a, April 12, 1910.) An improved variety of the preceding number, called '*Kolo-lobia.*' Came originally from the Nuga district, Caucasus. Considered even by the Russians a very fine bean for the table. Obtained from Mr. J. K. Dieterichs. To be tested in regions like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27986. CITRULLUS VULGARIS Schrad. **Watermelon.**

From Yelisavetpol, Caucasus, Russia. "(No. 1321a, April 7, 1910.) A red-fleshed variety, said to grow large and to be of very fine quality. To be tested in regions like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27987. CITRULLUS VULGARIS Schrad. **Watermelon.**

From Yelisavetpol, Caucasus, Russia. "(No. 1322a, April 7, 1910.) Mixed varieties of watermelons. The small seeds are said to produce fruits weighing up to 30 pounds, and when being eaten the seeds in these are scarcely noticeable. The Yelisavetpol watermelons are noted for their large size and good quality. To be tested in regions like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27988. CUCUMIS MELO L. **Muskmelon.**

From Geok-Tepe, Caucasus, Russia. "(No. 1323a, April 12, 1910.) A variety of muskmelon, called '*Dootma.*' Comes from the Erivan district, seeds sent from this locality under No. 1306a (S. P. I. No. 27805). Obtained from Mr. Dieterichs. To be tested like No. 1319a (S. P. I. No. 27984). These melons are buried underneath the soil while growing, as otherwise they do not acquire the right flavor and aroma." (*Meyer.*)

27989. CUCUMIS MELO L. **Muskmelon.**

From Yelisavetpol, Caucasus, Russia. "(No. 1324a, April 7, 1910.) A local variety of muskmelon, said to be large and of fine quality. To be tested like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27990. CUCUMIS MELO L. **Muskmelon.**

From Yelisavetpol, Caucasus, Russia. "(No. 1325a, April 7, 1910.) A choice local variety of muskmelon. Said to be of very fine texture and flavor. To be tested like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27991. CUCUMIS MELO L. **Muskmelon.**

From Geok-Tepe, Caucasus, Russia. "(No. 1326a, April 12, 1910.) A strictly local variety of muskmelon, called '*Germek.*' Of extra fine quality,

27980 to 27995—Continued.

large size, almost globular in shape, color pale yellow with green stripes; very early, no shipper. Obtained from Mr. J. K. Dieterichs, who recommends this melon for trial in hotbeds." (*Meyer.*)

27992. CUCUMIS SATIVUS L. **Cucumber.**

From Geok-Tepe, Caucasus, Russia. "(No. 1327a, April 12, 1910.) A very fine local variety of cucumber, green, medium large, and very tender. Obtained from Mr. J. K. Dieterichs. To be tested like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27993. PISTACIA VERA L. **Pistache.**

From Yelisavetpol, Caucasus, Russia. "(No. 1328a, April 7, 1910.) Pistachio nuts bought on the market in Yelisavetpol, said to come from Persia. Not of very fine flavor." (*Meyer.*)

27994. PANICUM MILIACEUM L. **Proso millet.**

From Erivan, Caucasus, Russia. "(No. 1329a, March 28, 1910.) A local variety of proso having large, brownish-red seeds. Said to be drought resistant." (*Meyer.*)

27995. TRITICUM AESTIVUM L. **Wheat.**

From Erivan, Caucasus, Russia. "(No. 1330a, March 28, 1910.) A local variety of soft, white, winter wheat. To be tested under irrigation in mild-wintered climates." (*Meyer.*)

27996 to 28015.

From Peru, South America. Presented by Prof. William Curtis Farabee, Division of Anthropology, Harvard University, Cambridge, Mass. Received May 2, 1910.

Seeds of the following; notes taken from the packets:

27996. AMARANTUS sp.

From Amazon River. A plant with red leaves, eaten by cattle.

27997. CAJAN INDICUM Spreng.

Grows and produces all year.

27998. CANAVALI ENSIFORME (L.) DC.

From Madre de Dios River, altitude 900 feet.

27999. CUCURBITA FICIFOLIA Bouche.

From near Cuzco, altitude 10,000 feet.

Distribution.—Cultivated generally in the Tropics; said by some authors to be native in eastern Asia, but probably native in Peru, although nothing definite can be stated as to its native region.

28000. CUCURBITA PEPO L.

From Urubamba River. A pumpkin or squash, round, small, very good to bake.

28001. CUCURBITA sp.

From Cuzco. Very sweet.

28002. GOSSYPIUM PERUVIANUM Cav.

From upper Ucayali River.

Distribution.—Peru, Chile, and Ecuador; cultivated generally in cotton-producing countries.

27996 to 28015—Continued.

28003. GOSSYPIUM sp. **Kidney cotton.**

From Madre de Dios River.

28004. HORDEUM VULGARE L. **Barley.**

From Cuzco Valley.

28005. LAGENARIA VULGARIS Ser.

From Urubamba River.

28006 to 28008. LYCOPERSICON sp.

28006. From Urubamba Valley.

28007. From Urubamba Valley.

28008. From St. Ana on Urubamba River.

Grow the size of a cherry.

28009. MEDICAGO HISPIDA CONFINIS (Koch) Burnat.

28010. PASSIFLORA sp.

From Mishajua (?) River. Small pomegranate-like fruits that grow on a vine. Very good.

28011. RUBUS sp. **Wild raspberry.**

Growing at an elevation of 11,000 feet, 13° S. lat. Red, much larger than the common sort, good flavor, but sour.

28012. SICANA ODORIFERA (Vell.) Naud. **Cassabanana.**

From Urubamba River. Seed from a red gourd or pumpkin, grows on a vine which makes good shade. The fruits are good to eat and have a very pleasant odor when taken off the vine, left in the sun a short time, and then brought into the house for a few days.

See No. 27969 for previous introduction.

28013. TRITICUM sp. **Wheat.**

From Cuzco Valley.

28014. VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Urubamba River. A small white bean which grows on the sandy banks and needs hot sun. Contains a great deal of oil.

28015. ZEA MAYS L. **Corn.**

From Cuzco Valley. Large, white seeded.

28016. PROTEA MELLIFERA Thunb.

From Cape Town, South Africa. Presented by the Conservator of Forests, at the request of Prof. J. Burtt Davy, agrostologist and botanist, Transvaal Department of Agriculture. Received May 28, 1910.

A South-African bush, useful both as an ornamental and as a bee plant.

See No. 26207 for previous introduction.

28017. CHENOPODIUM QUINOA Willd. **Quinoa.**

From Bolivia, South America. Presented by Señor Don Ygnacio Calderón, E. E. and M. P., Bolivian Legation, Washington, D. C. Received May 24, 1910.

"This grain is very nutritious, the plant grows well in high altitudes, and requires little moisture." (*W. A. Reid, of the Legation.*)

Distribution.—Cultivated in Colombia, Peru, and Chile; probably native in the same region.

See Nos. 18536 and 18537 for further description.

28022 and 28023.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 12, 1910.

Seeds of the following:

28022. PRUNUS sp. **Bush cherry.**

"(No. 1331a, Apr. 25, 1910.) A low-growing bush cherry found on very dry and stony places here and there in the Caucasus. Produces a multitude of small, rosy flowers in early April. The fruits are small and sour and can be used for compotes and jellies. Recommended as a stock for various stone fruits in arid and semiarid regions and for hybridizing purposes to create large-fruited, bushy forms of cherries. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

28023. ANCHUSA MYOSOTIDIFLORA Lehm.

"(No. 1332a, Apr. 25, 1910.) A beautiful, perennial, spring-flowering plant, looks strikingly like a large forget-me-not. Prefers shady places. Recommended as a garden ornamental on shady situations in semiarid, mild-wintered regions. Obtained from the Tiflis Botanical Gardens." (*Meyer.*)

Distribution.—Shady banks and cliffs in the Caucasus region, and in the Altai Mountains of southern Siberia.

28024 to 28029.

From Tsungming, China. Obtained by Rev. James Ware of the Foreign Christian Missionary Society, Shanghai, China, and forwarded through Mr. Amos P. Wilder, American consul general. Received May 20, 1910.

"Tsungming is an alluvial island in the estuary of the Yangtze River. It lies between 31° and 32° north latitude. Prevailing winds from southeast. Total length from east to west 60 miles, average breadth 12 miles. The soil is rich except in the northwest corner, where it is overcharged with alkali. Population, including small islands around, and a few towns on the north mainland, 1,200,000." (*Ware.*)

Seeds of the following:

28024 to 28027. ANDROPOGON SORGHUM (L.) Brot.

28024. "*Premier.* This sorghum seed is from the middle of the island. It develops 13 joints in the stem, hence it bears the name '*13-jointed*' sorghum. It is the fullest and most productive of island sorgos." (*Ware.*)

"*Chinese* sorgo. A sorgo with obovate spikelets; black glumes with compressed tips; very small seeds and short awns. Probably the same as the Chinese sorgo originally introduced from the Island of Tsungming to France in 1851, and to the United States in 1853. Apparently identical with S. P. I. No. 22913." (*Carleton R. Ball.*)

28025. "The '*Tender*' sorghum is greatly cultivated, as it seems to be the easiest raised. It grows to a height of about 5 feet." (*Ware.*)

"Sorgo very similar to the preceding number, but with glumes varying from the normal greenish yellow to a light brown." (*Carleton R. Ball.*)

28026. "The '*Hard*' sorghum is planted about three weeks before the tender, and is cut about two weeks later. It is largely grown and reaches a height of about 4 feet." (*Ware.*)

"Appears to be a mixture of the two preceding numbers, some glumes being black and some being brown." (*Carleton R. Ball.*)

28024 to 28029—Continued.

28027. "Kowliang. Said to be the finest variety on the island." (*Ware.*)

"Brown Kowliang. Apparently the same as S. P. I. No. 22911." (*Carleton R. Ball.*)

"Please note that although sorgo is cultivated on an extensive scale the Chinese have never used the stalk for sirup manufacture. It is sold on the markets in bundles and chewed for the juice, and also fed to the pigs." (*Ware.*)

28028. PANICUM MILIACEUM L. **Proso millet.**

"Mixed millet. This is mixed ready for sowing. Unless mixed, each variety would be too hard for domestic use, but in growing a mixed crop, one kind is fructified by the other and a grain is produced which is much valued as an article of diet. In many places it is ground and takes the place of flour." (*Ware.*)

28029. CHAETOCHLOA ITALICA (L.) Scribn.

"Yellow. Also highly valued and used as the preceding (S. P. I. No. 28028)." (*Ware.*)

28030. ROSA GIGANTEA Collett.

From Santa Barbara, Cal. Purchased from Dr. F. Franceschi. Received at the Plant Introduction Garden, Chico, Cal., May 12, 1910.

For previous introduction of this species, see No. 27301.

28031 to 28033. DOLICHOS spp.

From Poona, Bombay, India. Procured from Mr. T. F. Main, deputy director of agriculture. Received May 23, 1910.

Seeds of the following:

28031. DOLICHOS BIFLORUS L.

"*Kulthi.*"

28032 and 28033. DOLICHOS LABLAB L. **Bonavist bean.**

28032. "*Kadra Wal.*" **28033.** "*Local Wal.*"

28034. PINUS GERARDIANA Wall.

From Fort Sandeman, Baluchistan. Purchased from Col. G. C. Trench, political agent in Zhob. Received May 23, 1910.

See Nos. 21819 and 25316 for description. (Seeds.)

28035. PHASEOLUS ACONITIFOLIUS Jacq.

From Poona, Bombay, India. Purchased from Mr. T. F. Main, deputy director of agriculture. Received May 23, 1910.

"*Math.*" (Seeds.)

28036 and 28037.

From Russia. Purchased from Messrs. Vollmer & Co., Riga, Russia. Received May 31, 1910.

Seeds of the following:

28036. TRIFOLIUM PRATENSE L. **Red clover.**

Orel.

28036 and 28037—Continued.

28037. MEDICAGO SATIVA L. **Alfalfa.**

Samara. "This lucern seed has been grown in one of the coldest Governments in Russia, and has been recognized to be the hardiest strain ever offered. No other lucern seed will compare with it, as it comes from the cold Samara Government, near the Ural." (*Vollmer.*)

28038. ANDROPOGON SORGHUM (L.) Brot. **Sorgo.**

From Chekiang Province, China. Secured by Rev. James Ware, of the Foreign Christian Missionary Society, Shanghai, China, and forwarded through Mr. Amos P. Wilder, American consul general. Received May 20, 1910.

"This sorgo is said to grow very high. It is sown from the middle to the end of May." (*Ware.*)

"This is a sorgo very similar to No. 28024 from Tsungming Island. The spikelets are heavier and the seeds much larger, which may be due, however, to difference in cultivation. All the specimens from Tsungming Island are poorly developed, the percentage of fertile seed being small." (*Carleton R. Ball.*)

28039 to 28047.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 23, 1910.

Plants of the following:

28039. MEDICAGO sp.

From near Mshet, Caucasus, Russia. "(No. 772, April 29, 1910.) A perennial Medicago of rather vigorous growth, found on dry limestone banks at elevations of 3,000 feet above sea level. This and the following numbers of Medicagos and Trifoliums should be valuable as fodder plants in the cooler sections of the United States." (*Meyer.*)

28040. MEDICAGO sp.

From near Dushet, Caucasus, Russia. "(No. 773, April 29, 1910.) A perennial, large-leaved Medicago, found on dry places between rocks at elevations from 3,000 to 4,000 feet." (*Meyer.*)

28041. MEDICAGO FALCATA L. (?)

From between Dushet and Passanaura, Caucasus, Russia. "(No. 775, April 30, 1910.) A perennial, small-leaved Medicago, found in stiff clay banks at elevations over 4,000 feet." (*Meyer.*)

28042. MEDICAGO sp.

From between Dushet and Passanaura, Caucasus, Russia. "(No. 776, April 30, 1910.) A perennial, large-leaved Medicago, growing between rocks and stones at elevations of about 4,000 feet." (*Meyer.*)

28043. MEDICAGO sp.

From between Dushet and Passanaura, Caucasus, Russia. "(No. 777, April 30, 1910.) A small-leaved, perennial Medicago of very compact growth, found in stony débris at the foot of mountains and cliffs at elevations between 4,000 and 5,000 feet. Apparently seeks moisture-retaining locations." (*Meyer.*)

28044.

From between Dushet and Passanaura, Caucasus, Russia. "(No. 778, April 30, 1910.) Trifolium and other Leguminosæ found on stony places at elevations over 4,000 feet." (*Meyer.*)

28039 to 28047—Continued.

28045. TRIFOLIUM sp.

From near Guda-ur, Caucasus, Russia. "(No. 779, May 1, 1910.) A perennial clover found on dry mountain slopes at elevations of about 7,000 feet. Very drought resistant and apparently able to stand severe cold." (*Meyer.*)

28046. MEDICAGO SATIVA GLUTINOSA (Bieb.) Urban.

From near Vladikavkas, Caucasus, Russia. "(No. 781, May 3, 1910.) A large-leaved, perennial Medicago, found in dry, pebbly, limestone cliffs at about 3,000 feet elevation. Apparently very drought and cold resistant." (*Meyer.*)

28047. ASPARAGUS sp.

From near Dushet, Caucasus, Russia. "(No. 782, April 30, 1910.) An asparagus of ornamental habits, seen only once on a dry mountain side at an elevation of about 3,000 feet. Suitable for cultivation as a garden perennial, especially in regions of a light annual rainfall." (*Meyer.*)

28048 to 28058.

From Manchuria. Procured by Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry and Commerce, Mukden, Manchuria. Received June 2, 1910.

Seeds of the following; descriptive notes by Mr. Parker:

28048. CHAETOCHLOA ITALICA (L.) Scribn.

"*Small millet.* Chinese name, *Hsiaome.* This species of millet is grown everywhere in Manchuria, from Dairen to the Amur River, and from the Pacific Ocean on the east to Mongolia on the west. This sample comes from Mukden, Manchuria, 42° north latitude. It is one of the staple and universally used human foods in Manchuria. When properly hulled and cooked it is a delicious breakfast food."

28049 to 28051. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

28049. Large yellow. "*White Eyebrow* soy bean. Chinese name, *Paimei.* A well-known and famous variety of the soy bean grown over large areas on the alluvial bottom lands of the Liao Ho River in Manchuria. This seed sample came from valley lands near Kwangning, 42° north latitude, where the variety has been commonly grown for several centuries. Valuable in America as foundation stock for selecting and breeding improved varieties of oil-producing seeds."

28050. Small yellow. "Small, round soy bean. Chinese name, *Chinyuan.* This variety is grown in Manchuria as far north as 47° north latitude. This seed sample came from a district northeast of Harbin, Manchuria, 46° north latitude. The beans of this variety, grown in northern latitude, are highly prized because of their heavy weight and large per cent of oil. This variety should be especially valuable to plant breeders in the upper Mississippi Valley."

28051. Black. "Black curd bean. Chinese name, *Heitou.* Commonly grown in central Manchuria. This seed sample comes from Mukden, Manchuria, 42° north latitude. These beans are principally used for the production of bean curd. The beans are soaked, ground into coarse meal, and a filtrate formed that is coagulated with salt. The coagulated mass is pressed into a curd with stones. A meal made from these beans is mixed with corn meal for baking cakes."

28048 to 28058—Continued.

28052. PHASEOLUS ANGULARIS (Willd.) W. F. Wight. **Adzuki bean.**

"Red bean. Chinese name, *Hungchiangtou*. Commonly grown in central Manchuria for human food. This seed sample comes from Mukden, Manchuria, 42° north latitude. The beans are sometimes cooked green, but more commonly dried and boiled with millet or kowliang."

28053. PHASEOLUS RADIATUS L.

"Small green bean. Chinese name *Lutou*. Commonly grown in central Manchuria for human food. This sample comes from Mukden, Manchuria, 42° north latitude. These beans are usually cooked with millet or kowliang for food. They are also ground into meal and the meal mixed with kowliang meal in the production of vermicelli."

28054. CANNABIS SATIVA L. **Hemp.**

"Chinese name *Howma*. Grown in large quantities in Manchuria for the production of fiber. This sample comes from Mukden, Manchuria, 42° north latitude."

28055. FAGOPYRUM VULGARE Hill. **Buckwheat.**

"Chinese name *Chiaomai*. Common throughout all Manchuria, where it is sown in the latter part of June, or the first part of July, following barley or wheat. This sample comes from Mukden, Manchuria, 42° north latitude. Manchurian buckwheat, as a rule, appears to have larger and heavier kernels than varieties common in America."

28056. ORYZA SATIVA L. **Rice.**

"Upland rice. Chinese name *Tschingtze*. Common in north central Manchuria. This sample comes from Mukden, Manchuria, 42° north latitude."

28057 and 28058. ANDROPOGON SORGHUM (L.) Brot. **Kowliang.**

28057. "High stalk, spreading panicle. Chinese name *Sungma Kaoliang*. This plant is the chief and characteristic crop of Manchuria. Its seeds are the every day food of most of the common people, as well as the chief food of the farm animals. The leaves are stripped off the plant for live-stock food, and the stalks are burned to boil the water and heat the mud houses for all Manchuria. This sample of seed comes from Mukden, Manchuria, 42° north latitude, and is of a tall-growing variety with open or spreading panicle. This tall kowliang thrives best in latitude 38° to 42° north, maturing usually in October and requiring a late autumn to ripen properly. It will withstand drought, hot, drying winds, and an excess of moisture better than maize. The stalks are fibrous and rigid and do not lodge under stress as easily as maize."

"Seeds large, yellowish brown; glumes, light brown; contains a slight mixture of a black-glume variety." (*Carleton R. Ball.*)

28058. "Short stalk, compact panicle. Chinese name *Chinma Kaoliang*. This species matures somewhat earlier than the tall variety (S. P. I. No. 28057) and is grown commonly in Manchuria north of 42° north latitude. This sample comes from Mukden, Manchuria. Usage same as No. 28057."

"Seeds large, pale brown to reddish brown; glumes black and shining." (*Carleton R. Ball.*)

28059 and 28060.

From Saigon, Cochin China. Presented by Mr. P. Morange, Chef du Service de l'Agriculture. Received June 1, 1910.

Seed of the following:

28059. DIOSPYROS DECANDRA Lour.

Distribution.—The northern provinces of Cochin China; fruits offered for sale in the markets of the villages.

28060. GARCINIA COCHINCHINENSIS (Lour.) Chois.

Distribution.—Cultivated and probably also native in Cochin China.

See No. 12021 for description.

28061. BRITOA ACIDA (Mart.) Berg.

From Para, Brazil. Presented by Mr. W. Fischer, Campo de Cultura Experimental Paraense. Received June 4, 1910.

"This plant is related to the guava; the fruit is round, with a diameter of 2 to 2½ inches; the taste is almost like that of the guava, but very acid. The seeds are few. The color is like the guava externally; internally it is pale yellow. The skin is thin." (*Fischer.*)

Distribution.—In the woods along the Amazon River in the vicinity of Nogueira, Brazil.

28062 and 28063. MEDICAGO spp.

From Palermo, Sicily, Italy. Presented by the Director, Palermo Botanical Garden. Received May 6, 1910.

Seed of the following:

28062. MEDICAGO HISPIDA CONFINIS (Koch) Burnat.

28063. MEDICAGO HISPIDA NIGRA (L.) Burnat.

28064 to 28069. MEDICAGO spp.

From Madrid, Spain. Presented by the Director, Madrid Botanical Garden. Received May 6, 1910.

Seed of the following:

28064. MEDICAGO BLANCHEANA Boiss.

Distribution.—Syria, extending from Marash southward to the region around Saida.

28065. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban.

28066. MEDICAGO HISPIDA Gaertn.

28067 and 28068. MEDICAGO HISPIDA NIGRA (L.) Burnat.

28069. MEDICAGO RIGIDULA (L.) Desr.

28070 and 28071. MEDICAGO FALCATA L.

From Russia. Received through Prof. N. E. Hansen, Agricultural Experiment Station, Brookings, S. Dak., May 7, 1910.

Seeds of the following:

28070. "(No. 260.) Seeds gathered from plants growing wild in the dry steppes of the Semipalatinsk region, Akmolinsk Province, southwestern Siberia, in 1908, by courtesy of Mr. L. A. Sladkoff, assistant director, Department of Crown Domains, Omsk, Siberia." (*Hansen.*)

28070 and 28071—Continued.

28071. "(No. 261.) Seeds gathered from plants growing wild in the dry steppe region at Orenburg in 1908, by courtesy of Mr. W. S. Bogdan, agronomist of the Turgai-Ural region, Orenburg, Orenburg Province, on the extreme eastern border of European Russia. The yield of hay is 30 pood per dessiatine, which equals 2 tons per acre, and the yield of seed 26 pood per dessiatine, or 348 pounds per acre." (*Hansen.*)

28072. ALEURITES FORDII Hemsl. **China wood-oil tree.**

From Hankow, China. Procured through Mr. Hubert G. Baugh, vice consul general in charge. Received at the Plant Introduction Garden, Chico, Cal., April 27, 1910.

See No. 25081 for description.

28073 to 28092.

From Port-of-Spain, Trinidad. Presented by Mr. F. Evans, Botanical Department, Department of Agriculture. Received June, 1910.

Plants of the following; notes by Mr. Evans:

28073. ANEMOPAEGMA GRANDIFLORA Sprague.

A climbing plant, probably a native of Trinidad.

28074. ANONA SQUAMOSA L. **Sugar-apple.**

28075. BERTHOLLETIA NOBILIS Miers. **Brazil nut.**

Distribution.—The northern part of South America; in the valley of the Amazon and in Guiana.

28076. BLIGHIA SAPIDA Konig. **Akee.**

See No. 24592 for description.

28077. CARYOPHYLLUS AROMATICUS L. **Clove.**

See No. 27680 for description.

28078. CINNAMOMUM CAMPHORA (L.) Nees. **Camphor.**

Distribution.—The Provinces of Kiangsu, Chekiang, Fukien, Hupeh, and Kwangtung, in the Chinese Empire, in the island of Formosa, and in Japan. Commonly cultivated in India and many other countries.

28079. CINNAMOMUM ZEYLANICUM Garc. **Cinnamon.**

Distribution.—Probably a native of Ceylon; cultivated in most tropical countries.

28080. COFFEA LAURENTII Wildem. **Coffee.**

Distribution.—Found in cultivation at Lusambo on Sankuru River in the Kongo Free State, Africa.

28081. DIOSPYROS DISCOLOR Willd. **Mabola.**

See No. 26112 for description.

28082. DURIO ZIBETHINUS Murr. **Durian.**

"A large tree of the Malay Islands, producing a large fruit 10 by 7 inches, called durian, or civet-cat fruit, of which the cream-colored fleshy aril or pulp enveloping the seeds, like that of the jack-fruit, is the part eaten. The roasted seeds and the boiled unripe fruit are also eaten as vegetables." (*Watt, Dictionary of the Economic Products of India.*)

"The odor of this fruit is intensely disagreeable to many people." (*Fairchild.*)

28073 to 28092—Continued.

Distribution.—The Malayan Islands; cultivated in the Malay Peninsula.

See No. 27169 for previous introduction.

28083. GARCINIA MANGOSTANA L. **Mangosteen.**

See No. 25887 for description.

28084. MANGIFERA INDICA L. **Mango.**

Julie. Grafted plant. See Nos. 21515, 25861, and 26125 for previous introductions of this variety.

28085. MANGIFERA INDICA L. **Mango.**

D'or. Grafted plant.

28086. PERSEA AMERICANA Miller. **Avocado.**

28087. PSIDIUM GUAJAVA L. **Guava.**

Large, red fruited.

28088. PSIDIUM LAURIFOLIUM Berg. **Nicaraguan guava.**

See No. 26413 for previous introduction.

28089. SAPOTA ZAPOTILLA (Jacq.) Coville. **Sapodilla.**

28090. SPONDIAS DULCIS Forst. **We fruit** or **golden-apple.**

See No. 26470 for description.

28091 and 28092. THEOBROMA CACAO L. **Cacao.**

28091. *Alligator.* Seedling plants.

28092. *Forestera.* Grafted plants.

Distribution.—The forests of the Amazon and Orinoco valleys up to an elevation of 400 feet; cultivated and naturalized throughout tropical America and in the Philippines.

28095 to 28116.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, May 25, 1910.

Seeds of the following; notes by Mr. Husbands:

28095 and 28096. CRINODENDRON PATAGUA Molina.

See No. 25489 for previous introduction.

28097 and 28098. JUBAEA CHILENSIS (Mol.) Baill.

28097. "Indian name '*Lilla.*' " The shorter, thicker class of Chile palm from which a fine table sirup is made.

28098. "Indian name '*Caucau,*' same as the preceding (S. P. I. No. 28097), but grows very tall and slim."

See No. 25612 for previous introduction.

28099 to 28109. JUGLANS REGIA L. **Walnut.**

28099. "A large variety. A fair per cent of this tree produces nuts with shells having 3 parts instead of 2."

28100. "The common variety, introduced by the Spaniards. The specimens selected were those having shells in 3 parts."

28101 to 28109. "Different strains grown in Chile for very many years. This year being a drought year the nuts are smaller than usual."

28095 to 28116—Continued.

28110. LAVATERA ASSURGENTIFLORA Kellogg.

"This deciduous shrub, from the island of Anacapa off the coast of Santa Barbara, and now, to some extent, cultivated, is one of rare beauty and grace. As an ornamental shrub, or tree, for it attains to the height of 15 feet, it will be highly esteemed when more generally known. The flowers are purple, about two and a half inches broad, and in this climate continue long in bloom." (*Kellogg, in Proceedings California Academy, vol. 1, p. 14. 1854.*)

28111 and 28112. MAYTENUS BOARIA Molina.

28111. "Weeping Maiten. Has a red bark and one seed in a pod; the seeds contain a quantity of oil."

28112. "*Maiten derecho.* Leaves and branches grow straight upright. Has white bark and two seeds in each pod, the seeds contain a quantity of oil."

See No. 26187 for previous introduction.

28113. NOTHOFAGUS sp.

From dry central Chile.

28114. PISUM ARVENSE L. **Pea.**

"Stringless peas, whose extra-large, sweet, thick pods are comestible like green beans."

28115. RICINUS COMMUNIS L. **Castor-oil bean.**

"Wild castor beans from the dry hills of Coquimbo."

28116. VILLARESIA MUCRONATA Ruiz. & Pav.

Nearly all of the publications on Chilean botany that include this species give *Citrus chilensis* Molina, 1782, as a synonym. If this citation is correct the specific name *chilensis* is earlier than *mucronata*, but with the material at present available it is impossible to establish their identity.

"*Gillipatagua.*"

Distribution.—A tree growing in the central provinces of Chile and extending as far southward as the region around Concepcion.

28117 to 28121. CERATONIA SILIQUA L. Carob.

From Lisbon, Portugal. Presented by Companhia Das Lezirias do Tejo e Sado. Received June 2, 1910.

Cuttings of the following:

28117. *Burro.*
28118. *Canella.*
28119. *Costella de Vacca.*
28120. *Galhosa.*
28121. *Mulata.*

28122 to 28124.

From Buitenzorg, Java. Presented by the Director of Agriculture. Received June 2, 1910.

Plants of the following:

28122. ATALANTIA BILOCULARIS (Roxb.) Wall.

See No. 24433 for description.

28123. FERONIA LUCIDA Scheffer.

Distribution.—The province of Rembang on the north shore of the island of Java.

28122 to 28124—Continued.

28124. GLYCOSMIS PENTAPHYLLA (Retz.) Correa.

Variety *dilatata*. See No. 24609 for previous introduction.

28125. SICANA ODORIFERA (Vell.) Naud. **Cassabanana.**

From Tampico, Mexico. Presented by Dr. Edward Palmer, through Mr. H. Pittier. Received June 6, 1910.

"A native of Brazil. Edible when still tender, but often cultivated on account of its odorous gourdlike fruits." (*Pittier.*)

See Nos. 27969 and 28012 for previous introductions.

28126. CAPPARIS SPINOSA L. **Caper.**

From near Petrovsk, Caucasus, Russia. Received through Mr. Frank N. Meyer, Agricultural Explorer, June 4 and 20, 1910.

"(No. 783, May 18, 1910.) The well-known caper plant, an herbaceous perennial, making long branches which crawl over the earth. Grows on very dry and stony places in the northeastern sections of the Caucasus, where occasionally winter temperatures of −20° C. (−4° F.) are experienced. Tens of thousands of rubles' worth of pickled capers are annually exported from the Caucasus, all gathered from wild plants. This caper plant may prove of value as a profitable crop for the more arid southwestern sections of the United States. As the plants require much space they should be planted at least 10 feet apart in all directions." (*Meyer.*)

Distribution.—Southern Europe and western Asia eastward to northern India, in northern Africa, and in Australia and the Sandwich Islands.

28128. MACHILUS NANMU (Oliv.) Hemsl.

From Yachow, West China. Presented by Mr. H. J. Openshaw. Received May 7, 1910.

"A splendid hard-wood tree which, I think, ought to grow in the lower altitudes. It is insect proof and is almost as hard as teak." (*Openshaw.*)

"*Nanmu*, sometimes erroneously called cedar, whereas it might be styled Chinese laurel, is the most famous of Chinese woods. Several species of Machilus and Lindera are called by the name *Nanmu;* and it is not yet quite certain which species yields the famous timber used in building the imperial palaces. This timber is said to come from Szechwan and Yunnan; and it is probable that it is produced by *Machilus nanmu* Hemsl., of which Davenport, Baber, etc., sent specimens from those provinces as yielding the famous wood. *Nanmu* also occurs in Fukien, and is there an excellent wood, capable of being used for making elegant writing desks and the like." (*Henry, Economic Botany of China, 1893: p. 43.*)

Distribution.—The provinces of Szechwan and Yunnan, in the Chinese Empire.

28129 and 28130. ZIZIPHUS spp.

From Maskat, Oman, Arabia. Procured by Mr. John A. Ray, American consul. Received June 1, 1910.

Seed of the following; notes by Mr. Ray:

28129. ZIZIPHUS MAURITIANA Lam.

"*Jarrari.* This variety has very hard seeds and the name is supposed to refer to the act of pulling the stones out of one's mouth and throwing them away."

See Nos. 23439 to 23446 and 25777 for previous introductions.

28129 and 28130—Continued.

28130. ZIZIPHUS OXYPHYLLA Edgew.

"*Qadhmani.* This name refers to the fact that they can be chewed up, stones and all. Some call them '*Makki*,' as they are thought to have been introduced here from the city of Mecca."

Distribution.—Found occasionally on the eastern flanks of the Sulaiman Range and in the outer Himalayas as far as the Ganges, in northwestern India.

"The jujube tree grows in this dry country without any attention or irrigation. The fruit is relished by the natives, but I do not think Americans will care for it. It has a taste vaguely resembling the red haw of Texas, if the memories of my childhood do not play me false. The English call the fruit I have sent you '*nubbuck apples.*' The Arabic name of the fruit is '*Nabaq*,' the tree is called '*Sidr.*'"

NOTE.—The Tournefortian genus Ziziphus was not recognized by Linnæus in his Species Plantarum but was united with Rhamnus, and the five species known to Linnæus were included as *Rhamnus lotus*, *R. jujuba*, *R. oenopolia*, *R. zizyphus*, and *R. spina-christi*. Ziziphus was, however, recognized as a distinct genus by a number of authors soon after the publication of the Species Plantarum in 1753. The first of these appears to have been Duhamel (Traité des Arbres, 1756, vol. 2, p. 377), with one species, followed by Miller (Gard. Dict., ed. 7, 1759), with four species, Adanson (Familles des Plantes, 1763, vol. 2, pp. 304, 620), with six species, and by other authors. The first of these authors to use the Linnæan binomial nomenclature was Philip Miller in the 1768 edition of the Gardener's Dictionary, and the four species of the 1759 edition are there included as *Ziziphus jujuba*, *Z. sylvestris*, *Z. oenoplia* [oenopolia], and *Z. africana*. Miller, however, did not apply the name *Ziziphus jujuba* to *Rhamnus jujuba* of Linnæus, for which species it has been almost universally used by subsequent authors, but to "The common Jujube," *Rhamnus zizyphus* of Linnæus (*Z. sativa* Gaertn. 1788, *Z. vulgaris* Lam. 1789). To conform to the present practice in specific nomenclature *Rhamnus jujuba* L. must therefore be known as *Ziziphus mauritiana* Lam., this being the next earliest available name applied to the species, while *Rhamnus zizyphus* L. becomes *Ziziphus jujuba* Miller. Miller's *Ziziphus sylvestris* is *Z. lotus* (L.) Lam. and his *Z. africana* is *Z. spina-christi* (L.) Willd.

28131. ANONA RETICULATA L. Custard-apple.

From Manila, Philippine Islands. Presented by Mr. A. J. Perkins. Received April 16, 1910.

28132 to 28135.

Material being grown at the Subtropical Garden, Miami, Fla., to be used in plant-breeding work. Numbered June 13, 1910.

Plants of the following; notes by Mr. P. J. Wester:

28132. ANONA RETICULATA L. **Custard-apple.**

"Bud wood secured in Nassau, New Providence, Bahamas, April, 1906, by Mr. P. J. Wester from a prolific seedling tree; fruit medium to large."

28133. ANONA SQUAMOSA L. **Sugar-apple.**

"Plants received at the Subtropical Garden, Miami, Fla., April 23, 1909, from Dr. F. Franceschi, Santa Barbara, Cal., grown by him from seed obtained in Paraguay, South America."

28134. PSIDIUM GUAJAVA L. **Guava.**

"Bud wood obtained by Mr. P. J. Wester from a seedling tree owned by Mr. J. O. Pardoe, Biscayne, Fla. Fruit medium large, yellowish; flesh, pale red;

28132 to 28135—Continued.

number of seeds, average. One of the best flavored guavas that has come to my attention.

28135. ROLLINIA EMARGINATA Schlecht.

"Plants received from Dr. F. Franceschi, Santa Barbara, Cal., April 23, 1909, at the Subtropical Garden, Miami, Fla. Grown by Dr. Franceschi from seed obtained in Paraguay."

28136 to 28151. CERATONIA SILIQUA L. **Carob.**

From Portugal. Procured by Mr. Louis H. Aymé, American consul general, Lisbon. Received June 11, 1910.

Cuttings of the following:

28136 to 28142. From the Municipality of Lagôa (Silves).

28136. From Manoel F. Gomes, Cotovio.

28137. From Manoel F. Gomes, Serro dos Negros.

28138. From Manoel F. Gomes, Boavista.

28139. From Manoel F. Gomes, Gramacho.

28140. From Gregoria José Luiz, Gramacho.

28141. From Antonio Franco, Sintra, Boavista.

28142. From José da Silva Ruivo, Serro dos Negros.

28143 to 28151. From the Municipality of Va. Na. de Portimao.

28143. From D. Luiz Bordasy Marimon, Poco da Lage.

28144. From D. Luiz Bordasy Marimon, Vao da Rocha.

28145. From Visconde d'Alvôr, Serro dos Corcos.

28146. From Dr. Alfredo Magalhães Barros, Chao das Donas.

28147. From Antonio Trindade, Valle d'Arrencada.

28148. From Antonio Trindade, Chao das Donas.

28149. From Luiz Duarte, Sabolar.

28150. From Amaro Duarte, Sabolar.

28151. From Visconde da Rocha, Valle de Franca.

"My friend who procured these cuttings advises that in order that the carob trees bear every year, every tree ought to be grafted with a branch from the male carob, which is necessary to fecundate the flowers and thus avoid poor years." (*Aymé.*)

28152. MEDICAGO sp.

From Baku, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, June 13, 1910.

"(No. 784, May 26, 1910.) A perennial medicago of creeping habit; it has small racemes of blue flowers and small, scanty leaves. Grows on most remarkably dry and stony places and remains green after the other vegetation has turned brown. It is eagerly browsed by sheep and goats. As the climate around Baku is almost arid, this medicago may prove to be valuable in some of our driest sections of the Southwest." (*Meyer.*)

28153 to 28180.

From Wuchang, Hupeh, China. Presented by Director Whong, Chinese Government College of Agriculture, through Mr. Howard Richards, jr., Boone College, Wuchang. Received June 6, 1910.

Seeds of the following; Chinese names as given on the packets:

28153. CASTANOPSIS sp.

Ber shin tze tree.

28154 and 28155. CINNAMOMUM CAMPHORA (L.) Nees. & Eberm.

28154. *Pei pai chang.* White camphor wood.

28155. *Hwar chong* tree.

28156. CITRUS DECUMANA (L.) Murr. **Pomelo.**

Shong yuen tree.

28157. LIQUIDAMBAR FORMOSANA Hance.

Mow fong tree.

Distribution.—In the provinces of Kiangsi, Fukien, Hupeh, and Kwangtung, in the Chinese Empire, in the island of Formosa, and in Japan.

28158 to 28175. ORYZA SATIVA L. **Rice.**

28158. *Bei kwoo lo.*
28159. *Bei yiu kwu.*
28160. *Hun mon lo.*
28161. *Hwong kwoo lo.*
28162. *Sung le lo.* Japanese variety.
28163. *Kwan tsu dow.*
28164. *Mon tsung ho.*
28165. *Sei kwan shü.*
28166. *Tsung ten.*
28167. *Tsung tien lo.*
28168. *Tse koo lo.*
28169. White.
28170. *Wan kwo.*
28171. *Woo mon lo.*
28172. *Wu mong lo.*
28173. *Ye zei lo.*
28174. *Yuen che lian lun.*
28175. *Zo tsen bow sung.*

28176. QUERCUS sp.

Ung se lai.

28177. SORBUS sp.

Yo dzor tsz.

28178. THEA SINENSIS L. **Tea.**

Red.

28179 and 28180. TRACHYCARPUS EXCELSUS (Thunb.) Wendl.

28179. Palm tree. **28180.** *Ju* tree.

See Nos. 26907 and 27456 for previous introduction.

28181. PSIDIUM GUAJAVA L. Guava.

Grown at the Subtropical Garden, Miami, Fla. Numbered June 17, 1910.

Bud wood obtained May, 1909, by Mr. P. J. Wester from Mr. Orange Pound, Cocoanut Grove, Fla., for breeding purposes.

"This is a white-fleshed guava, rather larger than the average fruit found in the market and with seeds less numerous. In flavor it is mild and sweet. Mr. Pound claims to have found nearly seedless fruits on the tree." (*Wester.*)

28182. LARIX SIBIRICA Ledeb.

From Helsingfors, Finland. Presented by Miss Alexandria Smirnoff. Received June 1, 1910.

Distribution.—Province of Chihli in China, and in Mongolia and Manchuria.

See No. 2175 for previous introduction.

28183 to 28190.

From Mexico. Collected and presented by Dr. J. N. Rose, associate curator, Division of Plants, U. S. National Museum, Washington, D. C. Received May 23, 1910.

Seeds of the following:

28183 to 28185. CARDIOSPERMUM spp.

28183. From Guaymas.
28184. From Mazatlan.
28185. From San Blas.

28186 to 28189. DIOSPYROS spp.

28186. From Altata.
28187. From Guadalupe.
28188. From Hermosillo, Sonora.
28189. From Mazatlan.

28190. PHASEOLUS sp.

From near Villa Union, Sonora.

28191. NICOTIANA TABACUM L. **Tobacco.**

From Pirapo, Paraguay. Presented by Mr. J. Eliot Coit, Southern California Laboratory, California Agricultural Experiment Station, Whittier, Cal. Received June 21, 1910.

"The friend from whom I received this seed described it as being a high-quality filler tobacco, which under extremely poor management is said to yield a leaf somewhat inferior to the Cuban, but decidedly superior to the American grown." (*Coit.*)

28193. SACCHARUM OFFICINARUM L. **Sugar cane.**

From Okinawa ken, Kiushu, Japan. Purchased from the Yokohama Nursery Co., Yokohama, Japan. Received June 22, 1910.

"*Yomitani yama.*" Early variety.

"Japanese sugar cane is now quite extensively grown in Florida and the southern portions of the States near the Gulf of Mexico. It is grown largely for forage and to some extent for sirup. Its use for forage is rapidly increasing. While it has been used successfully for ensilage, it is commonly fed green or pastured. Fields of this variety last as much as 12 years. The variety now grown in the Southern States was introduced about 12 years ago. The present variety is believed to be different from that originally introduced." (*C. V. Piper.*)

28194 to 28197.

From Guatemala. Presented by Dr. J. N. Rose, associate curator, U. S. National Museum. Received May 22, 1910.

Seeds of the following:

28194. BOUTELOUA BROMOIDES (H. B. & K.) Lag.

From Aguas Calientes.

Distribution.—Texas and Arizona and southward through Mexico to Nicaragua and Panama.

28194 to 28197—Continued.

28195. ECHINOCHLOA COLONA (L.) Link.

From Gualan.

Distribution.—Widely spread in the warm regions of both hemispheres.

28196. PANICUM FASCICULATUM Swartz.

From Gualan.

Distribution.—Mexico, from the vicinity of San Luis Potosi, southward to tropical South America, and in the West Indies.

28197. CARICA PAPAYA L. **Papaya.**

From Gualan.

28198. ANANAS SATIVUS Schult. f. Pineapple.

From Sunnybank, near Brisbane, Queensland, Australia. Presented by Mr. John Williams, The Sunnybank Nursery. Received June 17, 1910.

"*John Williams Improved Smooth Leaf.* This is a cross of *Ripley Queen* and *Smooth Cayenne*, giving it a much better flavor, and the habit of *Cayenne*." (*Williams.*)

28199 to 28262.

From Cambridge, England. Presented by the director of the Botanic Garden, Cambridge University. Received May 7, 1910.

Seeds of the following:

28199. AGROPYRON CRISTATUM (L.) Beauv.

Distribution.—In open sandy and stony places in eastern Germany and western Hungary.

28200. BIDENS HUMILIS H. B. & K.

Distribution.—Found at the base of the Volcano Cotopaxi in northern Ecuador.

28201. BIDENS PILOSA L.

Distribution.—Texas and New Mexico, southward through Mexico and Central America to Chile and southern Brazil; introduced throughout the tropics.

28202. CLEMATIS MONTANA Hamilton.

Distribution.—India, on the temperate slopes of the Himalayas from the Indus to the Brahmaputra, ascending to 12,000 feet, and in the Khasi Hills at an elevation of 4,000 feet and above.

28203. CORNUS ALBA L.

Distribution.—Widely distributed in Siberia, extending eastward to the Amur, and to northern China. Cultivated as an ornamental shrub.

28204. CORNUS AMOMUM Miller.

Distribution.—Wet places from Newfoundland westward to North Dakota and southward to Florida and Louisiana.

28205. CORNUS MAS L.

Distribution.—From central Europe eastward through Italy and Greece to the Caucasus region of southern Russia. Cultivated in the United States as an ornamental.

28206. COSMOS SULPHUREUS Cav.

Distribution.—Southern Mexico from Cordova to Oaxaca, rising to an elevation of 5,500 feet in the cordilleras of Oaxaca.

28199 to 28262—Continued.

28207. COTONEASTER AFFINIS Lindl.

Distribution.—Northwestern Himalayas in the Province of Nepal, northern India.

28208. COTONEASTER AFFINIS BACILLARIS (Wall.) Schneider.

Distribution.—The temperate slopes of the Himalayas from Waziristan eastward through Muree and Kashmir to Nepal, rising to an altitude of 10,000 feet.

28209. COTONEASTER HORIZONTALIS Decaisne.

Distribution.—The Province of Szechwan in western China. Cultivated as an ornamental.

28210. COTONEASTER RACEMIFLORA (Desf.) Koch.

Distribution.—The Caucasus region and Asia Minor eastward to western Tibet and Kashmir, where it is found at an elevation of 11,000 feet; also in northern Africa.

28211. COTONEASTER ROTUNDIFOLIA Wall.

Distribution.—Northern India; the slopes of the Himalayas up to 11,000 feet from Nepal eastward to Sikkim and Bhutan.

28212. COTONEASTER SIMONSII Baker.

Distribution.—Slopes of the Khasi Hills in the Province of Assam in the northeastern part of India.

28213. COTONEASTER TOMENTOSA (Ait.) Lindl.

Distribution.—Mountains of southern Europe from the Pyrenees and Alps eastward to Macedonia.

28214. CYCLANTHERA EXPLODENS Naudin.

Distribution.—From the province of Orizaba in Mexico southward through Central America to the mountains of Ecuador.

28215. DABOECIA CANTABRICA (Huds.) Koch.

Distribution.—The western coast of Europe; common on the heathy wastes of the Asturias and southwestern France, and extending northward to Connemara in Ireland.

28216. DAHLIA GRACILIS Ortegies.

Distribution.—Northern Mexico; at an elevation of 6,000 to 8,000 feet in the region of San Luis Potosi.

28217. ERICA CILIARIS L.

Distribution.—Along the western coast of Europe from Ireland and southwestern England through western France to northern Spain and Portugal.

28218. EXACUM AFFINE Balfour.

Distribution.—Found on the island of Socotra on the east coast of Africa. Grown in the United States as a greenhouse plant.

28219. FESTUCA AMPLA Hackel.

Distribution.—In the vicinity of Coimbra in Portugal and on the Sierra de Alfacar and the Sierra Nevada in the vicinity of Granada in Spain.

28220. IMPATIENS OLIVERI C. H. Wright.

Distribution.—On volcanic rocks and tufa in the province of Uganda, British East Africa.

28221. IMPATIENS ROYLEI Walp.

Distribution.—Temperate slopes of the western Himalayas from Nepal to Marri, India, at an elevation of 6,000 to 8,000 feet.

28199 to 28262—Continued.

28222. IMPATIENS SCABRIDA DC.

Distribution.—Shady woods of the temperate Himalayas at an altitude of 6,000 to 10,000 feet between Kunawar and Bhutan in northern India.

28223. LIMNANTHES DOUGLASSII R. Br.

Distribution.—Along the banks of the Umpqua River in western Oregon.

28224. LYSIMACHIA VULGARIS L.

Distribution.—On shady banks along streams in Europe and Russian Asia, from the Mediterranean and the Caucasus region northward to the Arctic circle. Naturalized in the United States from Maine to Ontario and southward to Ohio.

28225. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban.

28226. MEDICAGO HISPIDA Gaertn.

28227. MEDICAGO ORBICULARIS MARGINATA (Willd.) Benth.

28228. MEDICAGO TRUNCATULA Gaertn.

Distribution.—The countries bordering on the Mediterranean from Spain through France, Italy, Greece and Asia Minor to Arabia, and in northern Africa.

28229. PRIMULA FLORIBUNDA Wall.

Distribution.—Slopes of the western Himalayas at an altitude of 2,500 to 6,500 feet, between Kumaon and Kashmir, also in Afghanistan.

28230. PRIMULA JAPONICA A. Gray.

Distribution.—Shady valleys among the mountains in the provinces of Hakone and Yeso in central Japan. Cultivated in the United States as an herbaceous perennial.

28231. PRIMULA MOLLIS Nutt.

Distribution.—The eastern Himalayas in the vicinity of Bhutan in northern India.

28232. PRIMULA ROSEA Royle.

Distribution.—Slopes of the western Himalayas from Kulu to Kashmir at an altitude of 10,000 to 12,000 feet; also Afghanistan.

28233. PRIMULA VERTICILLATA Forsk.

Distribution.—Along the streams running from mount Kurm into the Dead Sea, western Arabia.

28234. ROSA ALPINA L.

Distribution.—Alpine slopes of the mountains of central Europe, especially in the Swiss Alps.

28235. ROSA BLANDA Ait.

Distribution.—Northeastern America; from Newfoundland to New England and westward, chiefly in the region of the Great Lakes, to Missouri and Assiniboia.

28236. ROSA CANINA L.

Distribution.—In thickets and hedges throughout Europe extending to the Ural Mountains and Dzungaria; also in the Canary Islands and in northern Africa.

28237. ROSA GALLICA L.

Distribution.—Europe and western Asia; from Belgium and Spain eastward to Asia Minor and the Caucasus region.

28199 to 28262—Continued.

28238. × ROSA HIBERNICA Smith.

Distribution.—A hybrid between *Rosa canina* and *R. spinosissima* arising in the counties of Derry and Down in Ireland.

28239. ROSA MACROPHYLLA Lindl.

Distribution.—In the Himalayas up to 10,000 feet between Murree and Sikkim, and in the provinces of Chihli and Yunnan in China.

28240. ROSA MULTIFLORA Thunb.

Distribution.—Apparently native throughout China, the Korean Archipelago and Japan; common in cultivation.

28241. ROSA RUGOSA Thunb.

Distribution.—The Provinces of Chihli, Shingking, and Shangtung in China, in the Korean islands, and in Japan.

28242. ROSA TOMENTOSA Smith.

Distribution.—In hedges and thickets throughout Europe and western Asia, chiefly in the northern part, and in the mountainous districts of southern Asia.

28243. ROSA VILLOSA L.

Distribution.—Mountains of Norway and Sweden southward to central Spain and eastward to the region of the Caucasus Mountains and Armenia.

28244. ROSA VIRGINIANA Miller.

Distribution.—Margins of swamps and rocky shores from Newfoundland to eastern Quebec and southward to New York and eastern Pennsylvania.

28245. SAMBUCUS EBULUS L.

Distribution.—Central and southern Europe and Asia Minor, northern Africa, and eastward through Persia to Kashmir and the Elburz Mountains.

28246. TROPAEOLUM MAJUS L.

28247. TROPAEOLUM MINUS L.

28248. ULEX EUROPAEUS L.

Distribution.—On heaths and sandy and stony wastes in western Europe, extending eastward to northern and central Germany; abundant in England, Ireland, and Scotland.

28249. VIOLA ARENARIA DC.

Distribution.—Sandy and stony places in Europe from Norway and England southward to the Mediterranean, and in northern Asia.

28250. VIOLA CANINA L.

Distribution.—Very common throughout Europe and northern Asia.

28251. VIOLA CORNUTA L.

Distribution.—Southern Europe, especially in the Pyrenees.

28252. VIOLA CUCULLATA Ait.

Variety *alba*.

Distribution.—In wet places throughout the northeastern United States.

28253. VIOLA ELATIOR Fries.

Distribution.—Damp pastures and copses in northern and central Europe, thence eastward to the Altai Mountains and southward to Asia Minor.

28254. VIOLA ERICETORUM × RUPPII.

28199 to 28262—Continued.

28255. VIOLA HIRTA L.

Distribution.—On rocks and in pastures throughout Europe and to the Caucasus Mountains and Asia Minor in southwestern Asia.

28256. VIOLA MIRABILIS L.

Distribution—Mountainous woods in Germany and Sweden and northern Russia, and southward to the Caucasus Mountains.

28257. VIOLA MUNBYANA Boiss. & Reut.

Distribution.—On the slopes of Mount Beni-Salah near the village of Blidah, on the coast of Algeria.

28258. VIOLA ODORATA L.

Distribution.—On banks, under hedges, in woods, and on the borders of pastures over most of Europe and Asia, extending north to temperate Sweden.

28259. VIOLA PERSICIFOLIA Roth.

Distribution.—Along canals and brooks and in swamps in southern and western Germany, and in Switzerland.

28260. VIOLA PRATENSIS Mert. & Koch.

Distribution.—Damp pastures, meadows, and sandy banks of streams in Bohemia and the valley of the Rhine in Germany.

28261. VIOLA ROSTRATA Muhlenburg.

Distribution.—Northeastern North America, from Quebec to Michigan and southward in the Alleghenies to Georgia.

28262. VIOLA TRICOLOR L.

Distribution.—On hilly pastures and banks in cultivated and waste places throughout Europe and Asia. Sparingly persisting as an escape from cultivation in the United States.

28264 to 28266.

From Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, June 25, 1910.

Roots of the following:

28264. (Undetermined.)

From mountains near Bacharden, Turkestan. "(No. 785, June 6, 1910.) A very ornamental, low-growing, perennial plant belonging to the Silenaceæ; it produces a mass of dark rosy-red flowers in early June. Grows between rocks and bowlders on sunburned mountain sides; apparently prefers drained situations. Of value as a rockery plant in dry, hot regions." (*Meyer.*)

28265. CAPRIOLA DACTYLON (L.) Kuntze.

From Kizil Arvat, Turkestan. "(No. 787, June 2, 1910.) A crab-grass growing in the desert along the banks of dry rivers and irrigation canals. Seems to be the well-known Bermuda grass or a form of it. Recommended for testing as a lawn grass in dry and hot regions, as it forms a dense turf in its native haunts where camels and donkeys browse upon it." (*Meyer.*)

28266. EREMURUS ALTAICUS (Pall.) Stev.

From mountains near Bacharden, Turkestan. "(No. 788, June 5, 1910.) An ornamental Eremurus growing on dry mountain slopes between rocks and stony débris. It has columnar spikes of rosy-purple flowers. Probably of value as a garden ornamental in regions where aridity of the atmosphere prevails together with high summer and fairly low winter temperatures." (*Meyer.*)

28267 to 28273. IMPATIENS spp.

From Peradeniya, Ceylon. Presented by Mr. J. C. Willis, Director, Royal Botanic Garden. Received June 21, 1910.

Seeds of the following:

28267. IMPATIENS LATIFOLIA L.

Distribution.—Mountain slopes of the western peninsula of India from Konkan to Travancore, at an altitude of 3,000 to 7,000 feet, and in Ceylon and Java.

28268. IMPATIENS FLACCIDA Arnott.

Distribution.—Mountain slopes of the Malabar coast of southern India and in Ceylon, where it ascends to 3,000 feet.

28269. IMPATIENS GLANDULIFERA Arnott.

Distribution.—The Central Province of Ceylon at an altitude of 4,000 to 6,000 feet.

28270. IMPATIENS GIBBOSA Arnott.

Distribution.—Wooded slopes of the mountains in the Central Province of Ceylon, at an altitude of 5,000 to 8,000 feet.

28271. IMPATIENS MACROPHYLLA Gardn.

Distribution.—Wooded slopes of the mountains of Ceylon, at an altitude of 5,000 to 7,000 feet.

28272. IMPATIENS SULTANI Hook. f.

Distribution.—Introduced into cultivation from Zanzibar.

28273. IMPATIENS TRUNCATA Thwaites.

Distribution.—Wooded slopes of the mountains at an elevation of 4,000 to 6,000 feet in the Central Province of Ceylon.

28274. COFFEA ARABICA L. **Coffee.**

From Ponce, Porto Rico. Received through Mr. J. W. Van Leenhoff, agent and expert, Porto Rico Experiment Station, June 29, 1910.

Maragogipe. "This is a variety of coffee supposed to have originated as a mutation from the common Arabian coffee. It was discovered in Brazil about 1870. The leaves of this variety are much broader and the berries larger than in the ordinary type. The plants are very vigorous, but are usually shy bearers." (*G. N. Collins.*)

28275. MANGIFERA INDICA L. **Mango.**

From Miami, Fla. Presented by Messrs. Hickson Bros. Received June 23, 1910.

Cecil. "Form oblong, flattened, curving to a V-shaped beak about one-half inch from vertical center; size large or medium, about 4¾ by 2⅝ by 2¾ inches; stem medium slender, fleshy at union with fruit; surface moderately smooth; color greenish yellow marbled with rich yellow; dots numerous, subcutaneous, green and gray; bloom whitish; skin medium thick, tenacious; seed long, flat; flesh yellow, rather tender, juicy, very little fiber; flavor sweet, pleasant, aromatic; quality good to very good; season probably four to six weeks earlier than *Sandersha.*" (*W. N. Irwin.*) (Seed.)

28276 and 28277. MEDICAGO ARBOREA L.

From Maison Carree, Algeria. Presented by the Botanic Garden. Received June 30, 1910.

28276. (Cuttings.) **28277.** (Seeds.)

28278. MEDICAGO SATIVA L. **Alfalfa.**

From Pinchow, Shensi, China. Presented by Mr. Berthold Laufer, Peking, who procured them from Mr. Nelson, China Inland Mission, Pinchow. Received June 28, 1910.

"The young plants of this are much used for greens, and eaten by the people. For fodder it is nearly all used green. The Chinese do not dry much clover for hay. As a rule it is cut three times throughout the summer, not reckoning when they first pick the tender plants for greens. I think this variety will grow on most any kind of soil." (*Nelson.*)

28279 to 28285.

From Mexico. Presented by Dr. J. N. Rose, associate curator, U. S. National Museum, Washington, D. C. Received June 20, 1910.

Seeds of the following; notes by Dr. J. N. Rose:

28279 to 28282. CUCURBITA spp.

28279. From San Blas. Collected by Messrs. Rose, Standley, and Russell, in 1910. "A climbing vine; fruit nearly globular, yellow streaked with narrow bands of white, 3 inches long."

28280. From Culiacan. Collected by Messrs. Rose, Standley, and Russell. "A climbing vine; fruit globular or a little broader than long, streaked with alternating bands of yellow and white, 2½ inches long."

28281. From Mazatlan. Collected by Messrs. Rose, Standley, and Russell, April 4, 1910. "A climbing vine; fruit egg shaped, 4 inches long, dark green with yellowish markings."

28282. From Acaponeta. "A climbing vine; fruit oblong, 3½ inches long, lemon yellow, with narrow stripes of white."

28283. MALVAVISCUS sp.

From Mazatlan. "Shrub or small tree 10 to 20 feet high with large cordate leaves. The scarlet flowers are very attractive and are followed by globular scarlet fruit. This tree is cultivated in patios at Mazatlan, and I would suggest trying these seeds in Florida and southern California. Only a few species of Malvaviscus are in cultivation, although most of the species are very attractive. I have been unable to indentify the species, but it is a near relative of *Malvaviscus grandiflora.*"

28284. MOMORDICA ZEYLANICA Mill.

From near Culiacan. Collected by Messrs. Rose, Standley, and Russell, in 1910. "A vine climbing to the height of 10 to 20 feet, forming a dense mass of foliage and producing an abundance of small orange-colored fruits which open, exposing the bright-scarlet seeds. More delicate and attractive than the other species in cultivation. A splendid climber for trellis work."

28285. TABEBUIA sp.

From Alamos. Collected by Messrs. Rose, Standley, and Russell, in 1910. "A tree 20 feet high. Produces an abundance of large yellow Catalpa-like flowers which appear before the leaves. The leaves are compound and somewhat like the horse-chestnut. It would be a desirable ornamental shrub or tree for the arid part of the Southwest. It is probably an undescribed species."

28286 to 28289.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received June 25, 1910.

Seeds of the following; notes by Mr. Regnard:

28286. DOVYALIS HEBECARPA (Gardn.) Warb.

"A fruit tree from Ceylon."

Distribution.—In the jungles of the Central Province of the island of Ceylon.

28287. ANONA sp.

"A species from Ceylon."

28288. COMBRETUM COMOSUM Don.

"Pretty, ornamental shrub."

Distribution.—Along Bagroo River in the vicinity of Sierra Leone in upper Guinea.

28289. FLACOURTIA RAMONTCHI L'Herit.

"A large-fruited thornless species."

See No. 26655 for previous introduction.

28290 to 28292. ANDROPOGON SORGHUM (L.) Brot. **Sorgo.**

From Island of Tsungming, China. Obtained by Mr. D. MacGregor, superintendent, parks and open spaces, Shanghai, China. Received June 25, 1910.

Seeds of the following; quoted notes by Mr. Carleton R. Ball:

28290. Early variety. "Apparently typical. Spikelets obovate; glumes black and shining, pubescent at tip; awned."

28291. Late variety. "Same remarks apply to this as to the preceding (S. P. I. No. 28290). This is the only sample yet received in which the seeds were all plump and mature."

"The two preceding lots are similar to or probably identical with S. P. I. No. 28024."

28292. Light-colored variety. "This differs from the preceding numbers in having reddish-brown glumes. Very few of the seeds are developed. It is probably identical with S. P. I. No. 28025."

28293 and 28294. ANONA CHERIMOLA Miller. **Cherimoya.**

From Nice, France. Presented by Dr. A. Robertson-Proschowsky. Received June 27, 1910.

28293. (Cuttings.) **28294.** (Seeds.)

"A very hardy variety found in my garden. The seeds may reproduce this hardy strain. The fruits are of no value." (*Proschowsky.*)

28296 to 28303. MEDICAGO FALCATA × SATIVA. **Alfalfa.**

Hybrid alfalfa plants. Parentage identical with S. P. I. No. 27742. Parents selected and hybrids made by Messrs. J. M. Westgate and W. J. Morse at the Arlington Experimental Farm during the summer of 1908. Numbered in the summer of 1910.

28296. Agrost. No. 2113. Sixth plant in row.

28297. Agrost. No. 2113. Seventh plant in row.

28298. Agrost. No. 2113. Eighth plant in row.

28296 to 28303—Continued.

28299. Agrost. No. 2113. Ninth plant in row.

28300. Agrost. No. 2113. Tenth plant in row.

28301. Agrost. No. 2113. Eleventh plant in row.

28302. Agrost. No. 2113. Twelfth plant in row.

28303. Agrost. No. 2113. Thirteenth plant in row.

28304 and 28305. ORYZA SATIVA L. **Rice.**

From Anam, French Indo-China. Procured by Mr. Miller Joblin, vice and deputy consul in charge, Saigon, Cochin China, from the chief of agricultural service in Anam. Received June 20, 1910.

Seeds of the following:

28304. *Lua Chum.* **28305.** *Luachiem.*

28306 to 28324.

From Russia. Received through Prof. N. E. Hansen, Agricultural Experiment Station, Brookings, S. Dak., May 20, 1910.

Seeds of the following; notes by Professor Hansen:

28306. AGROPYRON CRISTATUM (L.) Beauv.

"(No. 262.) This is considered a very valuable grass. Native of the driest steppes of eastern Russia and a large part of Siberia. The chemical analysis of this plant has attracted the attention of the Russian Government agronomists, indicating a higher percentage of protein than alfalfa. If this holds true under cultivation in the United States, it may be a verv valuable addition to our western grasses. Prof. R. W. Williams, of the Imperial Agricultural College at Moscow, Russia, is improving this species by selection from individual plants. The present sample is selection No. 1. The original seed was gathered from wild plants growing in the Turgai Province, the dry steppe region in western Asia just north of the Sea of Aral. This seed is from a single plant selected from the original plant raised at Moscow from this wild seed. Hence, the second generation under cultivation. The basis of selection in this selection No. 1 is a rather long and narrow inflorescence."

28307. AGROPYRON SIBIRICUM (Willd.) Beauv.

"(No. 272.) A grass native of the dry steppes of eastern Eruopean Russia and western Siberia. The present lot is selection No. 1, grown from a single plant, by Prof. R. W. Williams, of the Imperial Agricultural College, Moscow, Russia."

Distribution.—The trans-Caucasian provinces of southern Russia and eastward to the Altai Mountains in Siberia.

28308. AGROPYRON sp.

"(No. 275.) A native grass collected on the Russian Pamir plateau near the border of India in a six months' tour in 1899 by the late M. I. Toulinoff, assistant to Professor Williams at the Imperial Agricultural College, Moscow, Russia. The present sample is selection No. 1, by Professor Williams."

28309. TRIFOLIUM PRATENSE L. **Red clover.**

"(No. 280.) The native red clover from Uleaborg Province, Finland, from seed cultivated there about one hundred years. This is the original seed from the peasants, not cleaned or selected. Sample obtained from Professor Williams, Moscow."

28306 to 28324—Continued.

28310. TRIFOLIUM PRATENSE L. **Red clover.**

"(No. 281.) The same notes as for No. 280 (S. P. I. No. 28309) apply to this, except that this sample is from the Vasa Province, Finland."

28311. TRIFOLIUM MONTANUM L.

"(No. 282.) Native clover of Moscow Province, Russia. This is No. 617 of the plant-breeding numbers of Professor Williams, of the Imperial Agricultural College of Moscow, Russia."

Distribution.—Southern Europe and western Asia, extending from Spain through Italy, Dalmatia, central Russia, and the Caucasus region to the Ural Mountains in Siberia and the Savalan Mountains in northern Persia.

28312. TRIFOLIUM PANNONICUM Jacq.

"(No. 283.) A wild clover from the village of Lutovka, Kharkof Province, southern Russia. Sample obtained by Professor Williams, of Moscow. Should prove hardier than the Hungarian form of this species."

Distribution.—Southern Europe, extending from northern Italy through the Balkan Peninsula and southern Russia to Asia Minor.

28313. TRIFOLIUM LUPINASTER L.

"(No. 284.) This is a selection made from seed of wild clover gathered near Tomsk, Siberia. The original wild form was very low, 1 to 1½ feet, consisting of a single stem. The present sample is selection No. 1, and is the third generation from one plant grown by Professor Williams, of the Imperial Agricultural College, Moscow, Russia; it is rather high and bushy, with slender stalks and plenty of leaves."

28314. PISUM SATIVUM L. **Pea.**

Field variety. "(No. 288.) A remarkable mutation appearing in the plant-breeding experiments at the Imperial Agricultural College, Moscow, Russia. It is No. 576 of Professor Williams, and was selected by his assistant, Rozinsky. It forms a single stem with all the seed at the top with 50 per cent of the weight going to seed. Value undetermined."

28315. VICIA SATIVA L.

"(No. 289.) A native vetch from Pskov Province, near Beloserskin the Baltic Sea region south of St. Petersburg. The peasants grind it for bread. They say it is good food for the table as well as for fodder and grain. Seed obtained by Professor Williams, of Moscow."

28316. CUCURBITA MAXIMA Duch.

"(No. 290.) A field pumpkin from Simbirsk Province, eastern Russia. Sample procured by Professor Williams."

28317. PHYSALIS ALKEKENGI L.

"(No. 291.) From seed saved by me from fresh fruit purchased in a bazaar at Samarkand, Turkestan, December, 1908. This is commonly sold strung on long threads. The bright-red inflated pods are quite ornamental."

Distribution.—Western Europe, through central Asia and in Japan; often cultivated.

28318. LATHYRUS TUBEROSUS L.

"(No. 292.) Seed gathered for me from plants growing wild in the dry steppe region at Orenburg in 1908 by courtesy of Mr. W. S. Bogdan, agronomist of the Turgai-Ural region, Orenburg Province, on the extreme eastern border of European Russia."

28306 to 28324—Continued.

28319. GLYCYRRHIZA GLANDULIFERA Waldst. & Kit. **Wild licorice.**

"(No. 293.) A native forage plant from the dry steppe region of Orenburg. Seed gathered for me in 1908, from wild plants, by courtesy of Mr. W. S. Bogdan, agronomist of the Turgai-Ural region, Orenburg Province on the extreme eastern border of European Russia. A relative of the cultivated licorice plant."

Distribution.—Southwestern Europe and southern Asia, extending from Greece through Persia, Turkestan, and Afghanistan to the province of Chihli in China.

28320. AVENA SATIVA L. **Oat.**

"(No. 294.) Seed obtained originally from Nizhni Novgorod Exposition; sample grown in Kherson Province, southern Russia. The present sample is from seed raised for ten years by Professor Williams, of the Imperial Agricultural College, Moscow, Russia; the first five years as a field crop and the second five in the plant breeding plats. Noted for extreme earliness. At first the grain was very small, but is now larger and considerably later."

28321. SALSOLA ARBUSCULA Pallas.

"(No. 295.) A native plant of arborescent growth, from the sand dunes of the Bokhara, gathered for me by courtesy of Mr. W. Paletsky, in charge of the sand-dune planting of the Trans-Caspian Railroad, with headquarters at Chardchui, Turkestan. This plant is used as a sand binder to prevent the moving sands from encroaching on the track. These experiments show great originality and demonstrate the superiority of the native plants of Turkestan for this purpose. The onward march of the moving sands has been checked. Formerly these caused great expense in railway management."

28322. HALOXYLON AMMODENDRON (Mey.) Bunge.

"(No. 296.) A native sand binder from Bokhara. Same source as No. 295 (S. P. I. No. 28321)."

28323. CALLIGONUM CAPUT-MEDUSAE Schrenk.

"(No. 297.) A native sand binder from Bokhara. Same source as No. 295 (S. P. I. No. 28321)."

28324. TRIFOLIUM PANNONICUM Jacq.

"(No. 113.) This is usually called Hungarian clover, a perennial allied to red clover, but earlier and less tender in foliage. This present sample deserves especial attention because it is as found wild in the Kharkof Province, southern Russia. It should prove hardier than the Hungarian form of the species."

PUBLICATION OF A NEW NAME.

27520. CERVICINA UNDULATA (L. f.) Skeels.

NOTE.—It seems desirable to call attention here to an unusual application of the name *Ziziphus jububa* in conformity with the accepted rules of specific nomenclature. See Introduction Nos. 28129 and 28130.

INDEX OF COMMON AND SCIENTIFIC NAMES, ETC.

O