U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 142.

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

# SEEDS AND PLANTS IMPORTED

## DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1908:

INVENTORY No. 15; Nos. 22511 TO 23322.

ISSUED FEBRUARY 25, 1909.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1909.

## BULLETINS OF THE BUREAU OF PLANT INDUSTRY.

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### FOREIGN SEED AND PLANT INTRODUCTION.

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David Fairchild, *Agricultural Explorer in Charge.*

Frank N. Meyer and William D. Hills, *Agricultural Explorers.*
Albert Mann, *Expert in Charge of Special Barley Investigations.*
F. W. Clarke, *Special Agent in Charge of Matting-Rush Investigations.*
Frederic Chisolm, *Expert.*
Walter Fischer, R. A. Young, and H. C. Skeels, *Scientific Assistants.*

# LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
*Washington, D. C., October 19, 1908.*

SIR: I have the honor to transmit herewith, and to recommend for publication as Bulletin No. 142 of the series of this Bureau, the accompanying manuscript, entitled "Seeds and Plants Imported During the Period from April 1 to June 30, 1908: Inventory No. 15; Nos. 22511 to 23322."

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

Respectfully,

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

Hon. JAMES WILSON,
*Secretary of Agriculture.*

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# SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1908: INVENTORY NO. 15; NOS. 22511 TO 23322.

## INTRODUCTORY STATEMENT.

This fifteenth inventory of seeds and plants imported by the Office of Foreign Seed and Plant Introduction between the dates of April 1 and June 30, 1908, inclusive, comprises 812 numbers, and among the more important are those which our agricultural explorer Mr. Frank N. Meyer secured personally in his exploration trips in northern and central China. While it is too soon to tell anything about the real value to the country of these new importations, it may be worth while to call especial attention to certain ones from which we expect more than others. Occasionally, it is the thing of which little is at first expected that turns out the most important, but as a rule the predictions of the explorer in the field have come true.

Among the plants from Mr. Meyer are some especially interesting shade and ornamental trees, which he secured at great personal discomfort and risk from the almost barren mountains of the Wutai, where the climatic conditions are similar to much of the territory of the Northwestern States. The unusual difficulties of collecting seeds in these mountains will be appreciated when it is mentioned that of some species only single trees are standing in absolutely barren wastes extending for scores of miles around. Although Mr. Meyer made two trips to this inhospitable region, it was quite impossible for him to be on hand when the seeds of single rare elms and spruces ripened and, as can well be believed, the wild rodents which were on the spot did not wait for him. Some of the things of which he obtained cuttings have been pronounced new by Professor Sargent, of the Arnold Arboretum, and it is to be regretted that more material from this region could not have been secured.

Of items of interest from other parts of China, Mr. Meyer forwarded four distinct varieties of the *Yang Mae*, or strawberry tree (*Myrica nagi*); the evergreen chestnut (*Castanopsis tibetana*); *Ulmus pumila*, a promising dry-land elm from Manchuria for the Northwest; the remarkable white-barked pine (*Pinus bungeana*), which can hardly fail to attract the attention of our landscape gardeners; four species of lilac as yet undetermined; five species of Chinese roses; a very unusual collection of twenty-nine forms of

bamboos, some of which are hardy enough to grow in the climate of Peking, which resembles that of Philadelphia; a wild oat from the dry elevated portions of the Wutaishan, and soy beans, cowpeas, sorghums, cottons, and many other very valuable things from this great Klondike of new plant varieties, where almost every cultivator saves his own seeds and thus originates new strains.

Special mention should be made of an unusual piece of introduction work which Consul Magelssen, of Bagdad, carried out at our request, i. e., the securing and proper labeling of what may be considered one of the most successfully landed collections of Arabian date-palm suckers.

Through the increasingly large number of friends of plant introduction both abroad and at home a number of interesting things have been secured by correspondence: Cork acorns from southern Spain; a summer orange called the *Natsu mikan*, from Japan, which ripens in midsummer and is served on the tables of foreigners there just as the pomelo is in America; a collection of Indian green-manure and fodder plants from Nimboli; a broad-leaved variety of alfalfa from Elche, Spain; a collection of taros from Cochin China; a collection of rare sorghums from Entebbe, Uganda; the sugar palm from the East Indies; the white Alfonso mango from Bombay; a unique collection of wild and cultivated potatoes from the archipelago of Chiloé, in southern Chile, the home of the potato, and from the adjoining mainland, made by Mr. José D. Husbands; and a collection of Guatemalan cacti and a Central American dahlia secured for us by the late Prof. W. A. Kellerman just before his unfortunate death in the Guatemalan forest.

It should be repeated that the seeds and plants here listed are not necessarily for distribution, nor is it always possible to supply those who desire the various things listed here with what they want; but it is the aim of the office to get anything that a plant breeder or plant experimenter wants, whether it appears in these inventories or not, provided it is not already on the market, in which case the applicant will be referred to the catalogues which advertise it. To introduce a plant and get it into the regular trade channels without in any way interfering with the legitimate business in plant novelties which the seedsmen and nurserymen of the country are so well carrying on is one of the objects of our work.

The botanical determinations of the material are, as in the previous inventory, those of Messrs. W. F. Wight and H. C. Skeels, while the inventory has been prepared by Miss Mary A. Austin.

David Fairchild,
*Agricultural Explorer in Charge.*

Office of Foreign Seed and Plant Introduction,
*Washington, D. C., October 7, 1908.*

# INVENTORY.

**22511.** PUERARIA THUNBERGIANA (S. & Z.) Benth. **Kudzu.**

From Yokohama, Japan. Purchased from L. Boehmer & Co. Received April 4, 1908.

See No. 22341 for description.

**22512.** ROLLINIA ORTHOPETALA A. DC.

From Pará, Brazil. Presented by Prof. C. F. Baker, Museu Goeldi, Caixa Postal No. 399, through Mr. O. W. Barrett. Received April 4, 1908.

"The finest anonaceous fruit of tropical America." (*Baker.*)

"Tree 30 to 40 feet high; leaves oblong, acuminate, acute at base; corolla 1 inch in diameter, greenish yellow. Fruit size of an infant's head, greenish yellow; flesh white, sweet. Grows in flooded woods along the Amazon." (*Martius.*)

**22513 to 22523.**

From Bridgetown, Barbados, British West Indies. Presented by Mr. John R. Bovell, superintendent, Agricultural Department, at the request of the Imperial Commissioner of Agriculture for the West Indies, through Mr. O. W. Barrett. Received April 4, 1908.

**22513.** *Milady.*
**22514.** *Banana tannia.*
**22515.** *Red tacca.*
**22516.** (Unknown.)
**22517.** *Choice Marquis.*
**22518.** *China eddo.*
**22519.** *Geremy Barbados.*
**22520.** *Leefman.*
**22521.** *Button tannia.*
**22522.** *Gray Jack.*
**22523.** *White Leftman.*

"A collection of taros and yautias which are grown extensively as wet-land crops in Barbados. Procured for the collection of these plants in Florida." (*Fairchild.*)

**22524 to 22527.** JUGLANS spp. **Walnut.**

From Baumschulenweg, near Berlin, Germany. Purchased from Mr. L. Späth. Received March 28, 1908.

Notes taken from Mr. L. Späth's catalogue for 1907–1908.

**22524.** × JUGLANS INTERMEDIA PYRIFORMIS Carr. (J. NIGRA × REGIA?)

A hybrid with large, multi-pinnate, light green leaves.

**22525.** × JUGLANS INTERMEDIA VILMORINIANA Carr. (J. NIGRA × REGIA?)

A beautiful and imposing tree, perfectly hardy.

**22524 to 22527**—Continued.

22526. JUGLANS REGIA L.

*J. regia fertilis* Hort., *J. regia praeparturiens Hort.* Bush walnut; very early bearing.

22527. JUGLANS REGIA L.

*J. regia rubra* Hort. Red-skinned walnut.

**22528.** VITIS VINIFERA L. **Grape.**

From Niles, Cal. Presented by the California Nursery Company. Received at the Plant Introduction Garden, Chico, Cal., March, 1908.

*Sultanina Rosea.* A seedless variety. (See No. 3921 for description.)

**22529.** PANICUM MAXIMUM Jacq.

From Livingstone, Victoria Falls, northwestern Rhodesia. Presented by Mr. C. E. F. Allen, conservator. Received April 6, 1908.

"A valued grass in this country for hay and pasture." (*Allen.*)

**22530.** LANDOLPHIA CAPENSIS Oliv.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, agrostologist and botanist, Transvaal Department of Agriculture. Received April 6, 1908.

"A small bush of the Magaliesberg. These fruits have an agreeable flavor and are used for jam and brandy and are eaten raw. The fruit is known as the 'wild peach' or 'wild apricot.'

"This Landolphia is not likely to yield commercial rubber. The bush requires a warm, almost frostless situation." (*Davy.*)

**22531.** ANONA CHERIMOLA Mill. **Cherimoyer.**

From Island of Madeira. Presented by Mr. Charles O. L. Power. Received April 6, 1908.

"These cuttings were taken from a tree which produces good-sized, normal fruit of the smooth-skinned variety; it has no particular name here.

"It is the best tree as regards size and quality I have in my garden, but, as is the case with all cherimoyers here, both the size and quality vary very much from year to year." (*Power.*)

**22532.** HORDEUM POLYSTICHUM TRIFURCATUM (Schlect.) Asch. & Graebn. **Barley.**

From Fort Collins, Colo. Secured from Prof. W. D. Olin, agronomist, Agricultural Experiment Station. Received April 8, 1908.

*Hull-less.* "Grown from No. 12709. Adapted to high altitude." (*Derr.*)

**22533.** CRATAEGUS PINNATIFIDA Bunge. **Hawthorn.**

From Shantung Province, China. Presented by Rev. J. M. W. Farnham, Chinese Tract Society, Shanghai, Kiangsu, China. Received March 26, 1908.

"The Chinese name for this fruit is *San dzo*, the first syllable of the word, San, means mountain and would point to its cultivation in mountainous regions. It is about the size of a crab apple and resembles the thorn apple, of which I presume it is a species. It makes an exceptionally nice jam. The fruit when ripe is washed and each one cut open to see that there is no decay or

**22533**—Continued.

worm, and the whole is boiled. It is then rubbed through a sieve to separate the skin, seeds, etc. The pulp is then *slightly* cooked with sufficient sugar. If much boiled it turns to jelly. The taste and flavor remind me of the New England boiled cider-apple sauce, in Pennsylvania called 'apple butter.' I think it has a nice aromatic flavor, and if not cultivated in America I have sent you seeds enough to give it a speedy introduction." (*Farnham.*)

## 22534 and 22535. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Weihsien, China. Presented by Mrs. C. W. Mateer. Received April 4, 1908.

**22534.** Yellow. "This bean is used for making lamp and cooking oil and for flour to make cakes; also for bean curd (a mush curdled by caustic soda and eaten fried). All these are nourishing, but more esteemed by Chinese than foreigners. The refuse after expressing the oil forms a cake (round) 2 feet in diameter and 3 inches thick. This is exported for feeding animals (pounded fine) and enriching land." (*Mateer.*)

**22535.** Black. Similar in appearance to *Cloud.*

## 22536 to 22540.

From Chefoo, Shantung, China. Presented by Mr. Hunter Corbett, through Rev. J. M. W. Farnham, of Shanghai, China. Received April 4, 1908.

The following seeds, varietal descriptions by Mr. H. T. Nielsen:

**22536 to 22538.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

**22536.** Green. Similar to No. 17857.

**22537.** Green. Similar to No. 17262, *Yosho.*

"Chinese names (S. P. I. No. 22536) *Ching teo* and *Luh teo;* (S. P. I. No. 22537) *Whong teo.* These beans are used extensively for the manufacture of oil; the bean cake which remains after the oil has been pressed out is shipped south and extensively used as a fertilizer in vegetable gardens. Will grow well on level or high and hilly land. Is used by the people largely for food, being ground and made into a curd, also put in water and soaked until well sprouted and used as a vegetable. It is also boiled and eaten in the same manner as rice." (*Corbett.*)

**22538.** Black. Similar in appearance to *Cloud.*

"Chinese name *Shao hih teo.* Used chiefly for feeding animals." (*Corbett.*)

**22539.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

*Whippoorwill.* Similar to Nos. 17330, 17849, and 21085.

"Chinese name *Hung chiang teo.* Planted in orchards and in ground overshadowed by trees, etc." (*Corbett.*)

**22540.** PISUM ARVENSE L. **Field pea.**

"Chinese name *Wan teo.* Used extensively in the manufacture of vermicelli." (*Corbett.*)

## 22541 to 22549.

From Chelsea, S. W., London, England. Presented by James Veitch & Son. Received April 3, 1908.

**22541.** ACONITUM HEMSLEYANUM E. Pritzel.

## 22541 to 22549—Continued.

22542. ACONITUM sp. (?)

22543. ASTILBE sp. (?)

22544. ARTEMISIA LACTIFLORA Wall.

22545. BERBERIS ACUMINATA Franch.

22546. JASMINUM PRIMULINUM Hemsl.

22547. VITIS ARMATA Diels & Gilg.
Var. *Veitchii.*

22548. LONICERA MAACKII (Rupr.) Herd.

22549. LONICERA TRAGOPHYLLA Hemsl.

## 22550 to 22555.

From Groningen, Netherlands. Presented by Mr. J. W. Moll, director, Botanic Garden. Received April 8, 1908.

22550. ARRHENATHERUM ELATIUS (L.) Beauv.

22551. PANICULARIA MAGELLANICA (Hook. f.) Kuntze.

22552. PODOPHYLLUM EMODI Wall.

22553. LATHYRUS MONTANUS Bernh.

22554. LATHYRUS NIGER (L.) Bernh.

22555. LATHYRUS VERNUS (L.) Bernh.

## 22556. GARCINIA TINCTORIA (DC.) W. F. Wight. (XANTHOCHYMUS TINCTORIUS DC.)

From Alas Besorki, Java. Presented by Mr. W. S. Lyon, Manila, P. I. Received April 7, 1908.

"A robust grower." (*Lyon.*)

"Introduced as a possible stock for the mangosteen." (*Fairchild.*)

## 22557. CYNARA SCOLYMUS L. **Artichoke.**

From Algiers, Algeria. Purchased from Dr. L. Trabut. Received April 6, 1908.

*Violet Provence.*

## 22558 and 22559. MEDICAGO SATIVA L. **Alfalfa.**

From Gunnison, Utah. Purchased from Mr. W. H. Gribble, through Mr. C. J. Brand. Received April 8, 1908.

22558. Irrigated.

"Grown at Centerfield, Utah, in the San Pitch Valley. This seed is grown from the first crop of the season." (*Brand.*)

22559. Dry land.

"Grown in the Sevier Valley, near Gunnison, Utah, in 1907." (*Brand.*)

## 22560 to 22563. JUGLANS REGIA L. **Persian walnut.**

From Troyes, France. Purchased from Baltet Fréres. Received April 9, 1908.

22560. *Chabert.*

22561. *Franquette.*

22562. *Mayette.*

22563. *Parisienne.*

## 22564 and 22565.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, through Mr. C. V. Piper. Received April 10, 1908.

**22564.** PENNISETUM AMERICANUM (L.) Schum. **Pearl millet.**

"*um-Vellivelli.*"

**22565.** ELEUSINE CORACANA (L.) Gaertn. **Ragi millet.**

"*Mpoho.*"

"Both of these have been grown in the low country and are from this season's crop just harvested." (*Davy.*)

## 22566 and 22567. CITRUS AURANTIUM L. Orange.

From Poona, Bombay, India. Presented by Mr. N. M. Bhagawat, acting superintendent, Empress Botanical Gardens. Received April 10, 1908.

**22566.** *Ladoo.* (See No. 8441 for description.)

**22567.** *Suntra.* (See No. 8446 for description.)

## 22568 and 22569. VICIA FABA L. Broad bean.

From Hangchow, Chehkiang, China. Presented by Dr. D. Duncan Main and Rev. J. H. Judson. Received March 26 and April 6, 1908.

**22568.** Small green.

**22569.** Brownish green. Medium size.

## 22571 to 22629.

From Peking, Chihli, China. Received through Mr. Frank N. Meyer, agricultural explorer, at the Plant Introduction Garden, Chico, Cal., February 4, 1908.

A collection of cuttings and seeds, as follows:

**22571.** DEUTZIA sp.

From Shutseshan, Chihli, China. "(No. 152, Nov. 18, 1907.) A low-growing Deutzia, found here and there in crevices of the rocks. May prove to be a valuable little shrub for gardens in semiarid regions." (*Meyer.*)

**22572.** FRAXINUS BUNGEANA DC.

From Pangshan, Chihli, China. "(No. 155, Nov. 20, 1907.) An ash growing in rocky situations and on steep mountain sides. Attains, apparently, no great size. May be of use as a foresting plant in semiarid regions." (*Meyer.*)

**22573.** (Undetermined.)

From Pangshan, Chihli, China. "(No. 156, Nov. 20, 1907.) A low, very bushy shrub, found growing between bowlders. Looks very much like *Syringa amurensis* Rupr. Will be valuable as a garden shrub in semiarid regions." (*Meyer.*)

**22574.** SPIRAEA sp.

From Pangshan, Chihli, China. "(No. 157, Nov. 20, 1907.) A Spiraea which may be of use as a garden shrub in semiarid regions, as it grows in crevices of rocks and in dry and sterile locations." (*Meyer.*)

## 22571 to 22629—Continued.

**22575.** SPIRAEA sp.

From Pangshan, Chihli, China. "(No. 158, Nov. 20, 1907.) A very low growing Spiraea, with adiantum-like leaves. May be of use as an ornamental shrub for rockeries or for gardens in semiarid regions." (*Meyer.*)

**22576.** PRUNUS sp. **Plum.**

From Pangshan, Chihli, China. "(No. 162, Nov. 21, 1907.) A double red-flowered, bushy plum called *Yu men tau.* Said to be very fine looking in springtime. Propagated by being budded on to *Amygdalus davidiana* or by layering." (*Meyer.*)

**22577.** PRUNUS sp. **Plum.**

From Pangshan, Chihli, China. "(No. 163, Nov. 21, 1907.) A large-flowered, bushy plum, the flowers of which are said to have a blue color. Chinese name *Tsu tsa lau hua.* Probably a variety of No. 162 (S. P. I. No. 22576)." (*Meyer.*)

**22578.** CATALPA BUNGEI C. A. Meyer.

From Pangshan, Chihli, China. "(No. 164, Nov. 21, 1907.) Chinese name *Wu tung shu.* A fine flowering tree; also of use for wind-breaks and for poles. Adapted to semiarid regions." (*Meyer.*)

**22579.** (Undetermined.) **Bamboo.**

From Pangshan, Chihli, China. "(No. 165, Nov. 21, 1907.) An ornamental bamboo of a very low growing, bushy habit, 3 to 5 feet high. Loves a somewhat protected place—for instance, against a wall with southern or eastern exposure. Chinese name *Tsau chu.*" (*Meyer.*)

**22580.** PRUNUS ARMENIACA L. **Apricot.**

From Pangshan, Chihli, China. "(No. 172, Nov. 23, 1907.) A red, medium-sized apricot; said to be very early. Chinese name *Hung sing.*" (*Meyer.*)

**22581.** CYDONIA sp. **Quince.**

From Pangshan, Chihli, China. "(No. 174, Nov. 23, 1907.) A small-fruited quince, the fruits of which are very fragrant and much in demand as room perfumers. Chinese name *Pei mu kua.* Apparently a variety of *Cydonia japonica.*" (*Meyer.*)

**22582.** FRAXINUS sp. **Ash.**

From Tungying, Chihli, China. "(No. 176, Nov. 29, 1907.) A shrubby ash, found in dry and sterile locations. Seems to be different from No. 155 (S. P. I. No. 22572); otherwise, the same remarks apply to it." (*Meyer.*)

**22583.** EUONYMUS sp.

From Yenmenkwan, Chihli, China. "(No. 178, Nov. 30, 1907.) A shrubby, deciduous Euonymus, found growing in very dry situations; may be of use as a garden shrub in semiarid regions." (*Meyer.*)

**22584.** SAMBUCUS sp. **Elder.**

From near Santchako, Chihli, China. "(No. 179, Dec. 1, 1907.) A thrifty species of elder, seen only a couple of times. Loves moist situations." (*Meyer.*)

## 22571 to 22629—Continued.

**22585.** BERBERIS CHINENSIS Poir.

From Shinglung, Chihli, China. "(No. 185, Dec. 2, 1907.) The same as No. 160 (S. P. I. No. 21909) but from a different locality; for remarks, see this number." (*Meyer.*)

**22586.** CELASTRUS sp.

From near Tungying, Chihli, China. "(No. 188, Dec. 4, 1907.) A very vigorous species of Celastrus, found growing along rocky trails. May perhaps grow to a very great size; will trail itself into trees or crawl over rocks." (*Meyer.*)

**22587.** DIERVILLA sp. **Weigela.**

From near Tungying, Chihli, China. "(No. 190, Dec. 4, 1907.) A vigorous-growing Weigela, bearing small clusters of pale, rose-colored flowers in early summer. Grows in rocky crevices and on steep mountain sides and seems to be able to withstand drought very well. Of use as an ornamental shrub in gardens and parks." (*Meyer.*)

**22588.** PHILADELPHUS sp.

From Tungying, Chihli, China. "(No. 191, Dec. 4, 1907.) A species of mock orange found growing in dry, rocky locations. May be useful as a garden shrub in dry regions." (*Meyer.*)

**22589.** DEUTZIA sp.

From near Tungying, Chihli, China. "(No. 192, Dec. 4, 1907.) Found growing in rocky crevices. Seems to be of a very low growth, 2 to 3 feet. Probably of use as a small garden shrub in semiarid regions." (*Meyer.*)

**22590.** SPIRAEA sp.

From Jehol, Chihli, China. "(No. 200, Dec. 11, 1907.) A small, shrubby Spiraea found growing on dry, exposed mountain sides. Of use as a rockery shrub in small-sized gardens in dry regions." (*Meyer.*)

**22591.** SAMBUCUS RACEMOSA L. (?) **Elder.**

From near Peking, Chihli, China. "(No. 204, Dec. 15, 1907.) A low-growing elder; stands cutting back to the ground every year. Loves to grow on high, dry banks along the fields. May be of use for bank-binding purposes in semiarid regions." (*Meyer.*)

**22592.** VIBURNUM OPULUS L.

From Shinglungshan, Chihli, China. "(No. 205, Dec. 1, 1907.) A few cuttings of the snowball bushes, which were most heavily loaded with bunches of scarlet berries at time of collecting. Seemed to be a more floriferous type than the ordinary one." (*Meyer.*)

**22593.** ACTINIDIA KOLOMIKTA (Maxim.) Rupr. (?)

From near Tungying, Chihli, China. "(No. 207, Dec. 4, 1907.) The small-fruited gooseberry bush. Seems to be a variety of much shorter growth than the ordinary type." (*Meyer.*)

**22594.** QUERCUS sp. **Oak.**

From Shinglungshan, Chihli, China. "(No. 834a, Dec. 2, 1907.) Acorns of an oak which bears rather broad leaves, deeply lobed. Probably *Quercus mongolica*. Grows on dry, rocky mountain sides. May be, for this reason, of use as a foresting tree in semiarid climes. Chinese name *Bo li shu*." (*Meyer.*)

## 22571 to 22629—Continued.

**22595.** PYRUS CHINENSIS Lindl. **Pear.**

From Jehol, Chihli, China. "(No. 840a, Dec. 9, 1907.) Obtained from several varieties of cultivated pears, among which were strange types. Some desirable forms may spring up from these northern-grown varieties." (*Meyer.*)

**22596.** CORYLUS sp. **Hazelnut.**

From near Shinglungshan, Chihli, China. "(No. 841a, Dec. 3, 1907.) A wild hazelnut growing 3 or 4 feet high and covering here and there whole mountain slopes and sloping valleys. Seems to be able to stand drought very well." (*Meyer.*)

**22597.** DIOSPYROS KAKI L. f. **Persimmon.**

From Pangshan, Chihli, China. "(No. 843a, Nov. 23, 1907.) The very fine persimmon called *Siang shi tse*, scions of which were sent under No. 161 (S. P. I. No. 21910)." (*Meyer.*)

**22598.** DIOSPYROS KAKI L. f. **Persimmon.**

From Pangshan, Chihli, China. "(No. 843a, Nov. 23, 1907.) A large variety of persimmon of flat shape, occasionally having seeds." (*Meyer.*)

**22599.** DIOSPYROS KAKI L. f. **Persimmon.**

From Pangshan, Chihli, China. "(No. 844a, Nov. 20, 1907.) The ordinary wild persimmon, called by the Chinese *Gai tsao*, upon which they graft all their seedless persimmons." (*Meyer.*)

**22600.** PRUNUS sp. **Plum.**

From Pangshan, Chihli, China. "(No. 845a, Nov. 21, 1907.) A flowering plum, said to have double red flowers; often cultivated in temple courts; called *Yu mei tau*. Several varieties will in all probability appear among the seedlings. Budwood previously sent under No. 162 (S. P. I. No. 22576." (*Meyer.*)

**22601.** VITIS VINIFERA L. **Grape.**

From Lungwa, Chihli, China. "(No. 846a, Dec. 1, 1907.) A wild variety which bears heavy crops of rather large bunches of small, black grapes; edible. Chinese name *Shan poo tau*. Of use as a stock in cold regions." (*Meyer.*)

**22602.** ACER sp. **Maple.**

From Pangshan, Chihli, China. "(No. 847a, Nov. 23, 1907.) An ornamental maple, attaining a height of about 40 to 50 feet; able to grow in dry regions." (*Meyer.*)

**22603.** FRAXINUS BUNGEANA DC. **Ash.**

From near Tungying, Chihli, China. "(No. 848a, Dec. 4, 1907.) A small ash tree growing on dry, rocky mountain slopes; well fit for covering barren mountain or hillsides. Chinese name *Koo li sur shu*." (*Meyer.*)

**22604.** FRAXINUS BUNGEANA DC. **Ash.**

From Pangshan, Chihli, China. "(No. 849a, Nov. 20, 1907.) A small ash tree found on dry, rocky mountain slopes. Apparently the same as No. 848a (S. P. I. No. 22603). Scions of the tree from which this seed came were sent under No. 155 (S. P. I. No. 22572). Chinese name *Koo li sur shu*." (*Meyer.*)

## 22571 to 22629—Continued.

**22605.** JUGLANS MANDSHURICA Maxim. **Walnut.**

From near Laushang, Chihli, China. "(No. 850a, Dec. 3, 1907.) Apparently a small form of the Manchurian wild walnut." (*Meyer.*)

**22606.** ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Jehol, Chihli, China. "(No. 853a, Dec. 9, 1907.) To be used as a stock for improved varieties." (*Meyer.*)

**22607.** CRATAEGUS sp. **Hawthorn.**

From Laushang, Chihli, China. "(No. 854a, Dec. 3, 1907.) Probably *Crataegus pinnatifida.* May be utilized as stock for the large-fruited varieties. Chinese name of this wild one *Shan li hong.* The seeds may remain dormant for one year or more." (*Meyer.*)

**22608.** SYRINGA AMURENSIS Rupr. **Lilac.**

From near Laushang, Chihli, China. "(No. 855a, Dec. 3, 1907.) The beautiful white-flowering *Amur* lilac, which is mostly found as a shrub, though it grows in favorable localities into a tree 40 feet tall with a trunk 2 feet in diameter. Stands droughts and sterile soils remarkably well. A good shrub for regions with dry, hot summers and cold winters." (*Meyer.*)

**22609.** GREWIA PARVIFLORA Bunge.

From Pangshan, Chihli, China. "(No. 856a, Nov. 20, 1907.) A shrub growing from 2 to 10 feet tall, bearing red berries which persist until long into the winter. Grows in dry and rocky locations; as such well fit for gardens in dry regions. Chinese name *Niang nien tchun.* The berries are edible, though not nice." (*Meyer.*)

**22610.** VIBURNUM OPULUS L.

From Shinglungshan, Chihli, China. "(No. 857a, Dec. 1, 1907.) The branches from which these seeds were picked were sent under No. 205 (S. P. I. No. 22592). See this number for remarks." (*Meyer.*)

**22611.** DEUTZIA sp.

From Pangshan, Chihli, China. "(No. 858a, Nov. 20, 1907.) A small shrub, found growing on exposed, rocky hill slopes; well fit for rockeries and for gardens in dry regions. Is probably the same species as the one sent under No. 152 (S. P. I. No. 22571)." (*Meyer.*)

**22612.** RHAMNUS sp.

From Pangshan, Chihli, China. "(No. 859a, Nov. 20, 1907.) A large-leaved, very shrubby Rhamnus, very spiny; found growing between rocks and bowlders. May be of use as a hedge plant in dry situations." (*Meyer.*)

**22613.** RHAMNUS sp.

From Pangshan, Chihli, China. "(No. 860a, Nov. 20, 1907.) A small-leaved, dwarfy Rhamnus, spiny; found growing between rocks. Fit as a rockery shrub or as a lining bush along pathways in small gardens." (*Meyer.*)

**22614.** BERBERIS CHINENSIS Poir. **Barberry.**

From Shinglungshan, Chihli, China. "(No. 861a, Dec. 2, 1907.) A low, very spreading bush. Perhaps fit as a sand and bank binder in dry regions. Cuttings sent under Nos. 160 and 185 (S. P. I. Nos. 21909 and 22585)." (*Meyer.*)

## 22571 to 22629—Continued.

**22615.** ROSA sp.

From near Shinglungshan, Chihli, China. "(No. 862a, Dec. 3, 1907.) A wild rose of a very spreading habit, having red-colored stems 2 to 3 feet high, very spiny, and bearing many bunches of large scarlet berries. May be of use as a soil binder in rather dry regions." (*Meyer.*)

**22616.** CELASTRUS ARTICULATUS Thunb.

From Pangshan, Chihli, China. "(No. 863a, Nov. 20, 1907.) A tall climber bearing yellow capsules which burst open when ripe and show the scarlet seeds. Chinese name *Yau go dau tse.*" (*Meyer.*)

**22617.** VITIS sp.

From Pangshan, Chihli, China. "(No. 864a, Nov. 24, 1907.) Fit for rockeries and along terraces. The same as No. 153 (S. P. I. No. 21907)." (*Meyer.*)

**22618.** ALBIZZIA sp.

From Pangshan, Chihli, China. "(No. 865a, Nov. 23, 1907.) See No. 768a (S. P. I. No. 21969) for remarks about this tree. This species is quite distinct from *Albizzia julibrissin*, which is much more floriferous and of which the leaves, though much finer pinnated, are much smaller. Bunge seems to have called this one *Acacia macrophylla*, which is declared a synonym of *Acacia lebbek*, which is, however, a totally different plant." (*Meyer.*)

**22619.** CASSIA sp.

From Peking, Chihli, China. "(No. 873a, Nov. 14, 1907.) A cassia, looking like *Cassia marylandica*, bearing long racemes of dark yellow flowers. Used locally as a garden plant. A perennial herb well fit for gardens in dry regions." (*Meyer.*)

**22620.** CLEMATIS RECTA MANDSHURICA (Rupr.) Maxim.

From Shinglungshan, Chihli, China. "(No. 875a, Dec. 2, 1907.) An herbaceous perennial, 2 to 3 feet high, bearing one to five erect stems, which terminate in a panicle of rather large, white flowers. Well fit to be improved, when it may become a cut-flower plant of the first order. Of use now as an ornamental garden perennial." (*Meyer.*)

**22621.** CLEMATIS sp.

From near Yenmenkwan, Chihli, China. "(No. 876a, Nov. 30, 1907.) A creeping clematis running over hedges and stone piles. Seems to be very floriferous; makes woody stems." (*Meyer.*)

**22622.** (Undetermined.)

From Shutseshan, Chihli, China. "(No. 877a.) Seeds of a Valerianacea, being a perennial herbaceous herb bearing small yellow flowers; ornamental when in a mass. Fit for rockeries and dry situations." (*Meyer.*)

**22623.** SALVIA sp.

From near Tungying, Chihli, China. "(No. 878a, Dec. 4, 1907.) A shrubby perennial, 3 to 4 feet high, very floriferous; found growing in very rocky locations. May be of use as a honey plant in semiarid regions." (*Meyer.*)

## 22571 to 22629—Continued.

**22624.** ASPARAGUS sp.

From near Laushang, Chihli, China. "(No. 880a, Dec. 30, 1907.) Wild asparagus. A tall form, 3 to 4 feet high, growing between grass, having zigzag stems and bent-down branches. Of use as an ornamental garden plant." (*Meyer.*)

**22625.** ASPARAGUS sp.

From near Laushang, Chihli, China. "(No. 881a, Dec. 3, 1907.) Wild asparagus. A small form 1 foot high; otherwise, apparently the same as No. 880a (S. P. I. No. 22624)." (*Meyer.*)

**22626.** ASPARAGUS sp.

From Shinglungshan, Chihli, China. "(No. 882a, Dec. 2, 1907.) Wild asparagus; found growing on the mountain tops under the shade of pine trees. Has straight stems." (*Meyer.*)

**22627.** LILIUM sp.

From near Shinglungshan, Chihli, China. "(No. 883a, Dec. 1, 1907.) A small lily, 3 feet high, found growing between grass." (*Meyer.*)

**22628.** (Undetermined.)

From Shinglungshan, Chihli, China. "(No. 884a, Dec. 3, 1907.) A leguminous plant found growing between grasses." (*Meyer.*)

**22629.** CYDONIA JAPONICA (Thumb.) Pers. **Quince.**

From Peking, Chihli, China. "(No. 899a, Dec. 24, 1907.) A small-fruited quince having a very spicy odor. The fruits are sold as room perfumers. Chinese name *Mu li.*" (*Meyer.*)

## 22630. CASTILLA sp.

From Ancon, Canal Zone, Panama. Presented by Mr. Henry F. Schultz, through Mr. O. W. Barrett. Received April 17, 1908.

"Seed from our best rubber-producing trees." (*Schultz.*)

## 22631 and 22632. GOSSYPIUM BARBADENSE L. **Cotton.**

From Cairo, Egypt. Purchased from Mr. George P. Foaden, Khedivial Agricultural Society. Received April 15, 1908.

**22631.** *Jannovitch.* (For description see S. P. I. No. 3991.)

**22632.** *Mit Afifi.* (For description see No. 3992.)

See also Bulletin No. 62 of the Bureau of Plant Industry for descriptions.

## 22633 to 22635.

From Sheklung, Kwongtung, China. Presented by Mr. A. J. Fisher, American Presbyterian Mission. Received April 3, 1908.

**22633 and 22634.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

**22633.** Yellow. Similar in appearance to *Acme*, No. 14954, but seed is a trifle larger.

**22634.** Black. Seed flatter than any other of the same size received from China.

**22635.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

*Chinese Red.* Apparently identical with No. 17328, which is the progeny of No. 6557.

Varietal descriptions of the above were made by Mr. H. T. Nielsen.

## 22637 to 22640. PISUM ARVENSE L. Canada field pea.

From Guelph, Canada. Presented by Prof. C. A. Zavitz, Ontario Agricultural College, through Mr. C. V. Piper. Received April 16, 1908.

22637. *Multipliers.*
22638. *Clamart.*
22639. *White Scimitar.*
22640. *Canadian Beauty.*

## 22641 and 22642.

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received April 8, 1908.

22641. BRYONIA DIOICA Jacq.

"An herbaceous, climbing member of the pumpkin family, interesting on account of the handsome foliage with development of remarkably long tendrils. The large perennial root, sliced and dried, appears on the drug market under the name of Bryonia, and is a very highly valued drug, especially in homeopathic medicine." (*R. H. True.*)

22642. ECBALLIUM ELATERIUM (L.) A. Rich.

"An herbaceous, hairy annual, producing a trailing vine and characteristic cucurbitaceous inflorescence. The fruit on ripening undergoes a process of softening, which results finally in the splitting of the coating of the fruit and the squirting out of the seeds and soft pulp. Hence the name 'Squirting cucumber.' The drug elaterium is obtained from the juice pressed from the nearly ripe fruit. This juice after straining deposits an opaque grayish sediment which forms the characteristic elaterium cakes seen in the commercial article." (*R. H. True.*)

## 22643. PENNISETUM AMERICANUM (L.) Schum. Pearl millet.

From Cape Town, South Africa. Presented by Dr. E. A. Nobbs, Department of Agriculture. Received April 17, 1908.

"Seed of *N'yout*, pronounced knee-out; is extensively grown in Bechuanaland and all over Rhodesia; is used as a native food and is also given to mules. It is similar in character to Kafir corn but finer and smaller, and I think may be of considerable value." (*Nobbs.*)

## 22644 to 22649.

From Hangchow, Chehkiang, China. Presented by Mr. John L. Stuart. Received April 18, 1908.

The following seeds, varietal descriptions by Mr. H. T. Nielsen:

22644 to 22646. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

22644. Smoky yellow. Looks like it might possibly be a mixture.

22645. Greenish yellow. Similar in appearance to *Haberlandt*, No. 17263.

22646. Yellow. Practically identical with No. 18619.

22647. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

Black.

22648. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

Red.

22649. MEDICAGO DENTICULATA Willd. Bur clover.

## 22650 to 22652.

From Shanghai, Kiangsu, China. Presented by Rev. J. M. W. Farnham, Chinese Tract Society. Received April 15, 1908.

The following plants:

22650. AMYGDALUS PERSICA L. **Peach.**

*Shanghai.* "These peaches are called the *Honey* peach, and I think are very fine." (*Farnham.*)

22651. CITRUS AURANTIUM SINENSIS L. **Sweet orange.**

*Canton.* "If you have not this variety in America, it would be a great boon to introduce it.

"Mrs. Farnham and I have eaten oranges in many parts of the world, in southern Europe, taken fresh from the trees outside of Jafa, the famous *Navel* orange of California, and elsewhere, and are of the opinion that the *Canton* is far the most delicious. There is a very long season, from, say, December to April, and it seems to me that there must be slightly different varieties, resembling the varieties of apples that come on through the different seasons, though with far less difference." (*Farnham.*)

22652. CITRUS AURANTIUM SINENSIS L. **Sweet orange.**

*Swatow.* "The Swatow oranges are much admired by some. They grow to a large size and are a deep orange color, with a soft skin that is easily removed even without a knife. The lobes easily fall apart: they are covered with a thin silky skin which incloses the very sweet pulp and juice. You may like to call it the *Sweet* orange, or, as the Chinese say, *Honey* orange, or, better still, *Swatow*, as that is, I understand, the only place where it is raised." (*Farnham.*)

## 22653 and 22654.

From Grahamstown, Cape Colony, South Africa. Presented by Dr. S. Schönland, Albany Museum. Received April 11, 1908.

22653. ANDROPOGON SORGHUM (L.) Brot. **Kafir.**

Red.

22654. PASPALUM DILATATUM Poir. **Large water grass.**

## 22655. QUERCUS SUBER L. **Cork oak.**

From Barcelona, Spain. Presented by Mr. Peter Campbell, the Nairn Linoleum Company, Kearny, N. J. Received April 18, 1908.

"These acorns were procured for the purpose of getting on hand a large stock of plants which can be used in experiments in establishing groves of cork oaks in this country as a possible commercial source of cork." (*Fischer.*) (See S. P. I. No. 21732 for other importation.)

## 22656. ERAGROSTIS ABYSSINICA (Jacq.) Schrad. **Teff.**

From province of Harrar, Abyssinia, Africa. Presented by Mr. Robert P. Skinner, American consul-general, Marseille, France. Received April 11, 1908.

"This seed was produced in the region of Harrar at an altitude of 1,800 meters (5,905 feet). Teff is found throughout the province of Harrar at altitudes varying from 1,000 to 2,000 meters (3,280 feet to 6,561 feet), and is sown in various kinds of soil." (*Skinner.*) (See Nos. 17094 and 17095 for description.)

## 22657 to 22661.

From Bucharest, Roumania. Presented by Mr. Horace G. Knowles, American minister. Received April 2, 1908.

**22657 and 22658.** CITRULLUS VULGARIS Schrad. **Watermelon.**

**22657.**

"Seed from a small, round, green, and thin-skinned melon about the size of an average grapefruit and as sweet as an orange. Its shape and size—just large enough for one person—and delicious flavor would make it immensely popular for serving at clubs, hotels, and restaurants." (*Knowles.*)

**22658.**

"Another variety of small melon." (*Knowles.*)

**22659 to 22661.** CUCUMIS MELO L. **Muskmelon.**

"These yellow melon seeds are from the most delicious muskmelons or cantaloupes I ever tasted, and the flavor is as far ahead of the *Rockyford* as the *Rockyford* is ahead of the *Jersey* cantaloupe. If these melons could be grown in the United States to the perfect state they attain here, they would make an invaluable addition to the fruits of our country." (*Knowles.*)

**22659.**

"Oblong, yellow melon. Thin skin, thick meat, and very sweet." (*Knowles.*)

**22660.**

"Large, round, yellow melon. Firm meat and deliciously sweet. Was fully ripe October 1 and was grown in light soil with plenty of sun." (*Knowles.*)

**22661.**

"Another variety of round, sweet, yellow melon." (*Knowles.*)

## 22662. CHAYOTA EDULIS Jacq. Chayote.

From New Orleans, La. Purchased from the J. Steckler Seed Company. Received April 22, 1908.

"Fruits of a smooth variety of chayote secured for distribution in the Southern States with the object of encouraging its culture for the market." (*Fischer.*)

## 22663. RUBUS sp. Raspberry.

From Shanghai, Kiangsu, China. Presented by Rev. J. M. W. Farnham, Chinese Tract Society. Received April 21, 1908.

"Plants I have found growing wild on the rocky and sandy mountain side, but in good soil, 2,000 feet above the sea." (*Farnham.*)

## 22664 to 22669.

From Paris, France. Presented by Prof. Y. Costantin, director, Museum of Natural History, rue Buffon 61. Received April 24, 1908.

**22664.** ANDROPOGON HALEPENSIS (L.) Brot.

**22665.** PANICUM sp. (?)

**22666.** ARRHENATHERUM ELATIUS TUBEROSUS (Gilib.) Skeels. (AVENA TUBEROSA Gilib.)

## 22664 to 22669—Continued.

22667. ANTHEPHORA HERMAPHRODITA (L.) Kuntze.

22668. PHLEUM PANICULATUM Huds.

22669. PHLEUM ARENARIUM L.

## 22670. CITRUS AURANTIUM L. Bigarade.

From Yokohama, Japan. Purchased from the Yokohama Nursery Company. Received April 24, 1908.

*Natsu mikan.* "The *Natsu mikan*, or 'summer orange,' is needed here as a successor of grapefruit at the season when there is nothing at all to take the place of that most refreshing fruit. Nothing equals the piercing, delicious acidity of *Natsu mikan*, which is decidedly a sour orange, not in the least like a lemon or a lime. Nothing is so refreshing on a hot summer morning as half of a *Natsu mikan*, and orangeade made of *Natsu mikan* is different from lemonade and much better.

"I remember gratefully the plates heaped with peeled sections of *Natsu mikan*, with the accompanying plates of sugar, that are offered one at private houses and at monasteries on Japanese summer days.

"It seems to me that the *Natsu mikan* is more often seen on fruit stands in Tokyo than formerly, and more often offered to the foreigner. The largest and finest, they say, come from Yamaguchi prefecture, at the foot of the Inland Sea.

"It is a great improvement on the Chinese pomelo, which is so often dry and tasteless, and I shall be glad when we can have it throughout the summer in America." (*Eliza R. Scidmore.*) (See No. 9268 for previous introduction and further description.)

## 22671 to 22696.

From Peking, Chihli, China. Received through Mr. Frank N. Meyer, agricultural explorer, April 20, 1908.

A collection of seeds and cuttings, as follows:

22671. ABIES sp. Fir.

From Peisantse Temple, Wutaishan, Shansi, China. "(No. 256, Feb. 21, 1908.) A very tall growing fir, having small light green needles and light-colored, round, oblong cones. Found growing at 6,000 to 7,000 feet altitude. Chinese name *Tchien shu.*" (*Meyer.*)

22672. ABIES sp.

From Tchailingtse Temple, Wutaishan, Shansi, China. "(No. 257, Feb. 25, 1908.) A medium-tall fir, having large, curved needles with a bluish bloom on them, and bearing long, tapering cones of a chocolate-brown color. Collected at an altitude between 8,000 and 9,000 feet. Chinese name *Tchien shu.*" (*Meyer.*)

22673. PINUS sp.

From Tchenghaitse Temple, Wutaishan, Shansi, China. "(No. 258, Feb. 27, 1908.) A tall-growing pine, fit for forestry purposes. Chinese name *Sung shu.*" (*Meyer.*)

22674. LARIX sp. Larch.

From Tchailingtse Temple, Wutaishan, Shansi, China. "(No. 259, Feb. 25, 1908.) A larch of medium-sized height, growing on sterile mountain sides at very high elevations, 7,000 to 9,000 feet. Fit as a forestry tree

## 22671 to 22696—Continued.

in cold-wintered regions, as it grows on the northern exposed mountain slopes, where the snow does not melt until way into May. Chinese name *Tsai shu.*" (*Meyer.*)

**22675.** SYRINGA VILLOSA Vahl. (?) **Lilac.**

From Nansantse Temple, Wutaishan, Shansi, China. "(No. 269, Feb. 26, 1906.) A lilac found growing at high elevations, 7,000 to 8,000 feet. Said to bear large panicles of white flowers. Chinese name *Sar shu.*" (*Meyer.*)

**22676.** CRATAEGUS sp. **Hawthorn.**

From Tchenghaitse Temple, Wutaishan, Shansi, China. "(No. 271, Feb. 27, 1908.) A hawthorn growing into a small tree having very large spines; even the trunk is covered with branched spines. Chinese name *Ling ching tse.*" (*Meyer.*)

**22677.** RHODODENDRON sp.

From Shanfengko, Shansi, Wutaishan region, China. "(No. 273, Feb. 29, 1908.) A rhododendron of dense, shrubby growth, 4 to 5 feet high, growing on cliffs at about 5,000 feet altitude; apparently rare." (*Meyer.*)

**22678.** ULMUS sp. **Elm.**

From Yento, Shansi, China. "(No. 275, Mar. 1, 1908.) A densely branched elm of shrubby growth, occasionally growing into a small tree; found growing on a sunny rocky mountain slope at about 4,000 feet altitude." (*Meyer.*)

**22679.** ABIES sp. **Fir.**

From Talautse, Shansi, China. "(No. 277, Mar. 1, 1908.) A fir of a peculiar drooping appearance; found growing in an old temple court; only one specimen. Chinese name *Tchien shu.*" (*Meyer.*)

**22680.** PINUS sp. **Pine.**

From Tongdjautchang, Shansi, China. "(No. 278, Mar. 2, 1908.) A pine of very dense foliage and growing into a stately tree of imposing appearance; rare." (*Meyer.*)

**22681.** ROSA XANTHINA Lindl. **Rose.**

From Tsintse, Shansi, China. "(No. 288, Mar. 9, 1908.) A wild yellow rose growing in large masses on dry and sterile mountain slopes. Will in the future prove to be the best grafting stock for high-class roses in sterile and arid locations; is used by the Chinese as a stock for roses in pots. Chinese name *Moo ro tse.*" (*Meyer.*)

**22682.** ULMUS sp. **Elm.**

From Tsintse, Shansi, China. "(No. 290, Mar. 9, 1908.) An elm of shrubby growth, which becomes a small tree when left alone; has small Prunus-like leaves, dense branches, ashy white bark, and very hard, tough wood, which is highly appreciated as construction material for cart wheels. Grows in dry, rocky situations. Very well fit, as a small tree, for rocky locations and Japanese gardens. Can easily be dwarfed. Probably a new species. Chinese name *Yeh yü shu.*" (*Meyer.*)

**22683.** ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Tsintse, Shansi, China. "(No. 293, Mar. 1, 1908.) A jujube (Chinese date) tree, bearing large, oblong fruits of shining red color,

## 22671 to 22696—Continued.

which are mainly used as a delicatesse, after having been soaked in weak Chinese spirits for a couple of months. They have a hard skin and are bad for the bowels. The trees can be planted close together (6 to 8 feet) and do not apparently attain great size. Chinese name *Hu ping tsao*, meaning bottle jujube. Is considered locally the best of the different varieties grown." (*Meyer.*)

**22684.** ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Tsintse, Shansi, China. "(No. 294, Mar. 10, 1908.) A jujube (Chinese date) having medium-sized, red-colored, oblong fruits which taper toward the end. The trees grow to a large size, and when old have hardly any side branches on the main limbs. Chinese name *Mu shing hong tsao;* might be called 'pointed jujube.'" (*Meyer.*)

**22685.** ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Tsintse, Shansi, China. "(No. 295, Mar. 10, 1908.) A jujube (Chinese date) said to have red oblong fruits, which crack easily when falling down. Trees medium sized. Chinese name *Tsui ling tsao*, meaning 'fragile jujube.' Said to be a very poor keeper." (*Meyer.*)

**22686.** ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Tsintse, Shansi, China. "(No. 296, Mar. 10, 1908.) A jujube (Chinese date) tree which grows very large and spreads out very much, bearing small fruits of oblong shape, red color, and of a melting, sweet taste; can not be kept long. Chinese name *Lang tsao.* Might be called 'melting jujube.'" (*Meyer.*)

**22687.** SYRINGA sp. **Lilac.**

From Tsintse, Shansi, China. "(No. 297, Mar. 10, 1908.) A very floriferous lilac, growing often as a little tree; found on dry mountain slopes. Chinese name *Shau ting hsien.*" (*Meyer.*)

**22688.** AVENA NUDA INERMIS (Koern.) Asch. & Graeb. **Oat.**

From Tchailingtse Temple, Wutaishan, Shansi, China. "(No. 927a, Feb. 25, 1908.) A hull-less oat found growing at 8,000 to 9,000 feet elevation. May be of use in the elevated sections of the Rocky Mountain regions. Chinese name *Yoh ma.*" (*Meyer.*)

**22689.** HORDEUM DISTICHON NUDUM L. **Hull-less barley.**

From Tchailingtse Temple, Wutaishan, Shansi, China. "(No. 928a, Feb. 25, 1908.) A hull-less barley found growing at 8,000 to 9,000 feet elevation. Is very rare in this region and might have been brought in from Mongolia by the Mongolian pilgrims, who visit the Wutaishan region every year by the thousands. May be of great value in the short-summered section of the United States. Chinese name *Tsao ma.*" (*Meyer.*)

**22690.** CANNABIS SATIVA L. **Hemp.**

From Tongchör, Shansi, Kwohsien District, China. "(No. 932a, Mar. 4, 1908.) Grown in mountain valleys; considered to be the best variety of hemp of the Shansi Province, and sold in all of the towns and cities for string and rope manufacture. Chinese name *Shan ma tse.*" (*Meyer.*)

**22691.** PINUS BUNGEANA Zucc. **Pine.**

From Taiyuanfu, Shansi, China. "(No. 934a, Mar. 13, 1908.) Sold on the streets as a delicatesse, and said to come from the mountains of

## 22671 to 22696—Continued.

northern Honan. Chinese name *Sung tse.* Apparently the same as No. 797a (S. P. I. No. 21997)." (*Meyer.*)

**22692.** ROSA sp. **Rose.**

From Nausantse Temple, Wutaishan, Shansi, China. "(No. 935a, Feb. 28, 1908.) A tall-growing, bushy, red-flowered rose; found in thickets on the mountain slopes. May be of use as a grafting stock for standard roses. Chinese name *Yeh hong mae kwei hua.*" (*Meyer.*)

**22693.** ROSA XANTHINA Lindl. **Rose.**

From Tsintse, Shansi, China. "(No. 936a, Mar. 9, 1908.) A wild yellow rose, called *Moo ro tse* by the Chinese. For further remarks see No. 288 (S. P. I. No. 22681)." (*Meyer.*)

**22694.** BRASSICA OLERACEA L. **Cabbage.**

From Wutaishan, Shansi, China. "(No. 937a, Feb. 28, 1908.) A cabbage, flat like our own western cabbages, but growing on a high stem. Can be kept frozen hard throughout the winter, and, after having been washed with boiling water, can be served with oil and vinegar as an excellent salad, tasting quite sweet. Grows at 4,000 to 7,000 feet altitude. Fit for the northern and the alpine regions of the United States. Chinese name *Whe tse pai tsai.*" (*Meyer.*)

**22695.** COTONEASTER INTEGERRIMA Medic.

From Nausantse Temple, Wutaishan, Shansi, China. "(No. 938a, Feb. 26, 1908.) A shrub growing in shady locations on the mountain slopes; bears black berries; height 3 to 10 feet, according to amount of light and exposure. Hard wooded. Chinese name *Shan he tsao.*" (*Meyer.*)

**22696.** SYRINGA sp. **Lilac.**

From mountains near Tsintse, Shansi, China. "(No. 944a, Mar. 10, 1908.) A very floriferous lilac found on dry mountain slopes; grows often to be a little tree. Cuttings sent under No. 297 (S. P. I. No. 22687). Chinese name *Shau ting hsien.*" (*Meyer.*)

## 22704 to 22714.

From Saigon, Cochin China. Presented by Mr. Jacob E. Conner, American consul. Received April 21, 1908.

**22704.** SAGUERUS PINNATUS Wurmb.

**22705.** ONCOSPERMA sp.

**22706.** ARCHONTOPHOENIX ALEXANDRAE (F. Muell.) Wend. & Drude.

**22707.** RHAPIS FLABELLIFORMIS L'Herit.

**22708.** DYPSIS PINNATIFRONS Mart. (?)

**22709.** SABAL sp.

**22710.** CARYOTA MITIS Lour. (?)

**22711.** LICUALA PELTATA Roxb. (?)

**22712.** ARECA OLERACEA Jacq.

**22713.** ELAEIS GUINEENSIS Jacq.

**22714.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Yellow.

## 22715 to 22730. VIGNA UNGUICULATA (L.) Walp. Cowpea.

From Clemson College, S. C. Presented by Prof. C. L. Newman. Received April, 1908.

Professor Newman made the hybrids indicated in the following list. The selections were also made by him. Descriptive notes by Mr. H. T. Nielsen.

**22715.**

(Newman's No. 2.) Evidently a hybrid between *Blackeye* and *Taylor;* seed fully as large as *Taylor.*

**22716.** *Blackeye* × *Extra Early Blackeye.*

(Newman's No. 4.) Probably *Blackeye* × *Black.* Looks like *Sport,* No. 17427, and *Watson's Hybrid,* No. 17425.

**22717.** *California Blackeye* × *Taylor.*

(Newman's No. 9.) Looks like No. 22715, but seed is smaller.

**22718.** *Blackeye* × *Black Bunch.*

(Newman's No. 12.) Not distinguishable from No. 22716.

**22719.** *Blackeye* × *Black Bunch.*

(Newman's No. 10.) Apparently identical with Nos. 22716 and 22718.

**22720.** *Blackeye* × *Black.*

(Newman's No. 13.) Looks like *Holstein,* No. 17327.

**22721.** *Blackeye* × *Extra Early Blackeye.*

(Newman's No. 16.) Appears identical with Nos. 22716, 22718, and 22719.

**22722.** Red.

(Newman's No. 26.) A selection from *Clay.*

**22723.** *Clay.*

(Newman's No. 27.) A selection from *Clay.*

**22724.** *Clay.*

(Newman's No. 28.) A self-seeding strain.

**22725.** *Holstein.*

(Newman's No. 43.) Seed exactly like No. 22720.

**22726.** *Taylor* × *Large White Spot.*

(Newman's No. 50.) Looks exactly like No. 22717.

**22727.** *Taylor* × *Browneye.*

(Newman's No. 51.) Has but very slight markings of the *Taylor* variety.

**22728.** *Warren's New Hybrid* (?).

(Newman's No. 53.) Probably a hybrid between *Warren's New Hybrid* and one of the *Lady* varieties; is similar in appearance to *Southdown,* No. 17339, but the seed is a little smaller.

**22729.** *Warren's Extra Early* × *Sugar Crowder.*

(Newman's No. 57.) This is probably the same as our No. 17422, which is also a hybrid between these two.

**22730.** *Whippoorwill* × *Lady.*

(Newman's No. 64.) Apparently identical with *Guernsey,* No. 17408.

## 22731 to 22737.

From Nimboli, Post Mangrul-Dastgir, District Amraoti, Berars, India. Presented by Mr. Anant Sitaram Dhavale, through Mr. C. V. Piper. Received April 24, 1908.

The following seeds:

**22731.** CAJAN INDICUM Spreng.

"*Tur.* A legume food crop. The dry fodder is generally fed to cattle." (*Dhavale.*)

**22732.** INDIGOFERA GLANDULOSA Wendl.

"*Divale.* An extraordinary leguminous plant; grows on good soil and shows the greatest number of root nodules. Used only for green manure." (*Dhavale.*)

**22733.** SESBAN BISPINOSA (Jacq.) Steud. (AESCHYNOMENE BISPINOSA Jacq.)

"*Shevari.* A legume forage crop; grown under irrigation; very nourishing to sheep and bullocks when fed in green state." (*Dhavale.*)

**22734.** (Undetermined.)

"*Shevari.* A legume forage crop; grown under irrigation; very nourishing; is fed to bullocks in green state." (*Dhavale.*)

**22735.** SESBAN AEGYPTIACA Pers. (?)

"*Savara.* A legume forage crop; is fed to bullocks and sheep in green state. Grows wild." (*Dhavale.*)

**22736.** CICER ARIETINUM L.

"*Harbhara.* A legume food crop; is fed to horses in green state, and the seed also when dry. Horses love it most." (*Dhavale.*)

**22737.** PSORALEA CORYLIFOLIA L.

"*Bavachi.* A legume plant; is fed to buffaloes; very rarely bears root nodules." (*Dhavale.*)

## 22738. PISUM SATIVUM L. Pea.

From Boston, Mass. Received through R. & J. Farquhar & Co., April 27, 1908.

"To be used for breeding purposes." (*Young.*)

## 22739. CUCURBITA PEPO L. Squash.

From Shanghai, Kiangsu, China. Presented by Rev. J. M. W. Farnham, Chinese Tract Society. Received April 17, 1908.

"A fine winter squash (Chinese)." (*Farnham.*)

## 22740 and 22741. COLOCASIA spp. Taro.

From Paramaribo, Dutch Guiana. Presented by Dr. C. J. J. Van Hall, through Mr. O. W. Barrett. Received April 28, 1908.

The following tubers:

**22740.**

"*Hindoc-taya.* This has been imported by British Indian coolies." (*Van Hall.*)

## 22740 and 22741—Continued.

22741.

"*Agoe-taya.* (Agoe=swine.) Is a very coarse variety." (*Van Hall.*)

"These two *taya* varieties are the only new ones I found in this colony." (*Van Hall.*)

## 22742. Toluifera pereirae (Klotz) Baill.

From San Salvador. Presented by Mr. José C. Zeledon, Botica Francesa, San José de Costa Rica. Received April 28, 1908.

"The tree from which the Peruvian balsam is obtained. Since the plant has so much economic importance commercially, it may prove interesting." (*Zeledon.*)

## 22743. Citrullus vulgaris Schrad. Watermelon.

From Panama. Presented by Miss M. M. Childs, of the United States Forest Service. Received April 29, 1908.

"This melon is of average size, lemon-yellow inside, and its flavor somewhat resembles the hickory nut. The rind is very hard and white. The pulp is much softer than the ordinary watermelon, and its juice is used to flavor ice cream. Considered very fine by Americans at Panama, and called by them *Panamanian* watermelon." (*Childs.*)

## 22744. Cananga odorata (Lam.) Hook. f. & Thoms. Ilang ilang.

From Manila, P. I. Presented by Mr. H. N. Whitford, chief, Division of Forest Investigations, Bureau of Forestry, Department of the Interior. Received April 21, 1908.

"The ilang ilang grows here (Saigon, Cochin China) in some profusion, but it has not yet been cultivated to any considerable commercial extent, as it might be, for its rare perfume. It is a handsome tree, symmetrical and stately, reaching a height of 50 feet or more. It has a smooth, hard, grayish bark resembling that of the beech. It flowers in April and May, or perhaps even earlier. The long, strap-like, yellowish petals give out a rich, spicy fragrance, somewhat resembling that of cinnamon and very pronounced just after a rain. It grows very well in this hard, black soil of Cochin China, but I am unable to say just what soil it prefers." (*Conner.*) (For further description see S. P. I. Nos. 3793, 3897, and 20908.)

## 22745. Aralia racemosa L. Spikenard.

From North Clarendon, Vt. Presented by Mr. James Barrett. Received April 29, 1908.

"Natural habitat is a partly shady place where it can have leaf mold to feed on." (*Barrett.*) (For further description see S. P. I. No. 21658.)

## 22746 to 22753.

From Buitenzorg, Java. Presented by Dr. M. Treub, director, Department of Agriculture. Received April 27, 1908.

Seed of each of the following:

22746. Vigna sesquipedalis (L.) W. F. Wight.

"Speckled, reddish brown seeds, similar to No. 21562, but seeds are shorter." (*Nielsen.*)

## 22746 to 22753—Continued.

22747. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

"Reddish brown seeds, lighter in color than No. 22746." (*Nielsen.*)

22748. CLITORIA HETEROPHYLLA Lam.

22749 to 22753. CLITORIA TERNATEA L.

22749. Fl. *alba.*
22750. Fl. *atrocoerulea.*
22751. Fl. *Bryni.*
22752. Fl. *coerulea.*
22753. Fl. *violacea.*

## 22754. POA EAQUATORIENSIS Hack. (?)

From Ecuador. Presented by Mr. L. Ordonez, 537 Harrison street, San Francisco, Cal., through Mr. C. V. Piper. Received April 20, 1908.

"This is considered one of the best native grasses of Ecuador; grows very well on light soil with irrigation, but thrives also on dry land." (*Ordonez.*)

## 22755. BRASSICA RAPA L. **Turnip.**

From Helsingfors, Finland. Purchased from Mr. V. F. Sagulin. Received April 29, 1908.

*Petrowski.* "We grew this turnip last season at the stations at Sitka, Rampart, and Copper Valley, and at none of these places was this variety of turnip attacked by the pest (root maggot), although other varieties growing alongside were badly affected." (*Prof. C. C. Georgeson, Alaska Agricultural Experiment Station.*) (For other introduction see No. 19554.)

## 22756 and 22757. BRASSICA RAPA L. **Turnip.**

From Helsingfors, Finland. Presented by Mr. V. F. Sagulin. Received April 25, 1908.

22756. *Flat Round Yellow Finnish.*

22757. *Yellow Round Red-Top.*

## 22758 to 22761.

From India. Presented by T. F. Main, esq., Deputy Director of Agriculture, Poona, Bombay, India. Received April 28, 1908.

From Dharwar District:

22758. VIGNA CATJANG (Burm.) Walp.

From Surat District:

22759. VIGNA CATJANG (Burm.) Walp.

Similar in appearance to S. P. I. No. 21292.

22760. VIGNA CATJANG (Burm.) Walp.

22761. PHASEOLUS ACONITIFOLIUS Jacq. **Moth bean.**

## 22762 and 22763. OLEA EUROPAEA L. **Olive.**

From Sfax, Tunis. Purchased from Chatel & Jacquemart. Received April 29, 1908.

*Chemlali.* Truncheons and seed. (See S. P. I. No. 13567 for description.)

**22764.** ANDROPOGON SERICEUS R. Br.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Transvaal Department of Agriculture. Received May 1, 1908.

"*New South Wales Bluegrass.* The seed is this year's crop grown in the Transvaal." (*Davy.*)

**22765 to 22770.** COLOCASIA ESCULENTA (L.) Schott. **Taro.**

From Buitenzorg, Java. Presented by Dr. M. Treub, director, Department of Agriculture, through Mr. O. W. Barrett. Received May 1, 1908.

The following tubers. The nomenclature is mainly that of Hasskarl, Cat. Pl. Hort. Bogor., 55. The Malay names are also quoted.

**22765.** Variety *polyrrhiza* Hsskl., subvariety *viridis*. "Kimpoel idjoh."

**22766.** Variety *monorrhiza* Hsskl., subvariety *rubri-nervis*. "Talus romah banteng."

**22767.** Variety *monorrhiza* Hsskl., subvariety *rubra*. "Talus lampoeng-merah."

**22768.** Variety *monorrhiza* Hsskl., subvariety *rubra*. "Talus bajabon."

**22769.** Variety *monorrhiza* Hsskl., subvariety "Talus goenoeng tjisalak."

**22770.** Variety *monorrhiza* Hsskl., subvariety "Talus kekes."

**22771.** MUSA PARADISIACA L. **Banana.**

From Port of Spain, Trinidad, British West Indies. Presented by Dr. E. André, through Mr. O. W. Barrett. Received May 1, 1908.

"This banana is of the small kind known here as *Fig.*" (*Andre.*)

"A small ornamental banana which has small fruits and numerous seeds." (*Barrett.*)

**22772 to 22774.**

From Port of Spain, Trinidad, British West Indies. Presented by Dr. E. André. Received May 1, 1908.

**22772.** TOUNATEA SIMPLEX (Vahl.) Taub.

"A small, smooth-barked tree, branching like an elm. Leaves short petioled, alternate, 3 inches long, smooth; veins on under surface yellowish. Flowers borne in three-flowered racemes, in axils of leaves, at the tips of the branches. Corolla 1½ inches long, pale yellow. Wood hard and fine grained; used for lathe work." (*H. Pittier.*)

**22773.** GLIRICIDIA MACULATA H. B. & K.

"An unarmed tree, with alternate, compound leaves. Flowers resembling those of black locust in size, but pink." (*H. B. & K.*)

**22774.** CYNOMETRA TRINITENSIS Oliv.

"A small tree of the senna family. Leaves alternate, compound, of two obliquely oblong leaflets, 3 to 4 inches long. Flowers in small, many-flowered, axillary, sessile clusters. Fruit a one-seeded, globular legume, 1 to 2 inches in diameter." (*Oliv.*)

**22775 to 22778.**

From Asmara, Eritrea, North Africa. Presented by the director, Colonial Agricultural Experiment Station. Received April 29, 1908.

**22775.** JUNIPERUS PROCERA Hochst.

## 22775 to 22778—Continued.

"A handsome tree, growing 25 to 40 meters in central Africa, its native habitat, and its wood is useful in the manufacture of various small articles." (*Wight.*)

22776. OXYTENANTHERA ABYSSINICA (Rich.) Munro.

22777. ACACIA LAHAI Steud. & Hochst.

22778. ALBIZZIA ANTHELIMINTICA (A. Rich.) Brongn.

## 22779. CITRUS sp.

From Algiers, Algeria. Presented by Dr. L. Trabut, government botanist. Received April 27, 1908.

"*Zenboua.* Large tree; spiny; large leaves with a short petiole, slightly winged. Fruit large, depressed, terminated by a flat protuberance. It has been propagated at El-Kantara, in the oasis, where it attains large dimensions. It is very nearly related to the 'Pomme de Adam' and the rough lemon of Florida. Resists gummosis at El-Kantara, near Biskra. Would constitute a good grafting stock for the oasis." (*Trabut.*)

## 22781 to 22783.

From Georgetown, British Guiana. Presented by Mr. A. W. Bartlett, government botanist, Botanic Gardens, through Mr. C. V. Piper. Received May 1, 1908.

The following seeds:

22781. SOPHORA TOMENTOSA L.

A small tree, with large, odd-pinnate leaves. Flowers yellow, in stout racemes, about 6 inches long. Distribution, tropical shores throughout the world. (*Extract from H. Trimen, Handb. Fl. Ceyl.*)

22782. VINCA ROSEA L. **Madagascar periwinkle.**

"Tender, erect subshrub with oblong leaves. Flowers rosy or white, often with a pink eye; produced all summer. Sometimes called Cape periwinkle and *Old Maid.*" (*Bailey, Cycl. Amer. Hort.*)

22783. CAMPOMANESIA CERASOIDES (Cambess.) A. Gray.

"A shrub with opposite, elliptical, petioled leaves, bearing white flowers in the axils. Fruit the size of a cherry. A native of Brazil." (*Cambessedes.*)

## 22784. MEDICAGO SATIVA L. **Alfalfa.**

From Alicante, Spain. Procured through the consular agent at Alicante, by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received May 4, 1908.

"*Elche.* This variety, called in Spanish the 'broad-leaved of Elche,' was called to my attention by Doctor Trabut, of Algiers. It is supposed by him to be a distinct strain of alfalfa which is grown quite generally near the town of Elche, Spain." (*Fairchild.*)

## 22785 and 22786.

From Belize, British Honduras. Presented by Mr. E. J. F. Campbell, superintendent, Botanic Station. Received April 30, 1908.

## 22785 and 22786—Continued.

22785. (Undetermined.)

"Indigenous velvet bean." (*Campbell.*)

22786. (Undetermined.)

"Indigenous handsome blue-flowered legume." (*Campbell.*)

## 22787. ANDROPOGON SORGHUM (L.) Brot. Sorgo.

From Hoxie, Kans. Presented by Mr. M. G. Blackman, through Mr. Carleton R. Ball. Received May 1, 1908.

"*Club Head.* A sorgo or sweet sorghum not identical with any known variety; possibly a hybrid between *Amber* and *Orange*—at any rate related to *Amber*." (*Ball.*)

## 22788 to 22790. MEDICAGO SATIVA L. Alfalfa.

From Tashkend, Turkestan. Purchased from Mr. H. W. Duerrschmidt. Received May 4, 1908.

*Turkestan.*

22788. From the district of Aulieata, severe winter, average summer.

22789. From Tschimkent, average summer, not cold winter.

22790. From Khiva, hot summer, mild winter.

## 22791 to 22793.

From Manila, P. I. Presented by Mr. H. N. Whitford, chief, Division of Forest Investigations, Bureau of Forestry, Department of the Interior. Received May 4, 1908.

22791. CHRYSOPHYLLUM sp. (?)

"This is a rare species, growing in the forests, with a fruit about the size of a Japanese persimmon. It has a slightly agreeable taste." (*Whitford.*)

22792. STERCULIA FOETIDA L.

"*Calumpang.* An oil is made from these seeds." (*Whitford.*) (For further description see No. 17139.)

22793. PITHECOLOBIUM ACLE (Blanco) Vidal.

"*Acle* is one of our valuable timber trees. In quality it is the nearest wood we have to walnut." (*Whitford.*)

## 22794 to 22796.

From Saigon, Cochin China. Presented by Mr. J. E. Conner, American consul. Received May 4, 1908.

22794. IRVINGIA OLIVERI Pierre.

22795. ANONA SQUAMOSA L. (For description see No. 9024.)

22796. ANONA RETICULATA L. (For description see No. 5210.)

## 22797 to 22809.

From Chihuahua, Mexico. Presented by Dr. Edward Palmer. Received May 2, 1908.

## 22797 to 22809—Continued.

The following seeds, with Mexican names:

**22797 to 22802.** PHASEOLUS COCCINEUS L. **Scarlet runner.**

"*Frijol patol.* There are six different colored beans under this name. Cultivation may reveal some new novelties and it may prove a fine ornamental; it is much grown here to run over arbors. The green pods are eaten." (*Palmer.*)

**22797.** White.

**22798.** Black.

**22799.** Lavender, mottled with black.

**22800.** Mauve, mottled with lavender.

**22801.** Mauve, mottled with black.

**22802.** Black, mottled with mauve and gray.

**22803.** CAPSICUM FRUTESCENS L. **Pepper.**

"*Chile quipin.* From the mountains. It is locally much used, especially in vinegar." (*Palmer.*)

**22804 to 22809.** CAPSICUM ANNUUM L. **Pepper.**

**22804.** "*Chile tapatio.*" Cultivated in Guadalajara, Jalisco, Mexico.

**22805.** "*Chile negro.*" Cultivated in Julimez, Chihuahua, Mexico.

**22806.** "*Chile mirosoe.*" Cultivated in Aguascalientes, Mexico.

**22807.** "*Chile colorado.*" Cultivated in Chihuahua City, Mexico.

**22808.** "*Chile bolito.*" Cultivated in Sta. Rosalia, Chihuahua, Mexico.

**22809.** "*Chile pasilla.*" Cultivated in San Pablo and Meoqui, Chihuahua, Mexico.

## 22810. CUCURBITA PEPO L. **Pumpkin.**

From Jerusalem, Palestine. Presented by Mr. John E. Dinsmore, American Colony, through Mr. Thomas R. Wallace, American consul. Received April 29, 1908.

"The Arabic name is *Kusa.* It is probably a variety of vegetable marrow and is prepared for food in several ways: It may be boiled, fried, stewed, baked, etc. The most common way of cooking it in the Orient is to scoop out the inside and to stuff it with rice, meat, and butter, which is highly seasoned, and then boil it until well done.

"Plant the seeds in hills 2 inches deep, two or three in each hill, in a very light, well-worked loam. Until the plants appear above ground, care must be taken that the ground does not become caked, as otherwise the plants will be destroyed. In Palestine they grow without any rain whatsoever, but there are heavy dews." (*Dinsmore.*)

## 22811 to 22818.

From Saigon, Cochin China. Presented by Mr. J. E. Conner, American consul. Received May 6, 1908.

The following tubers:

**22811.** CALADIUM BICOLOR (Ait.) Vent.

**22812.** AMORPHOPHALLUS CAMPANULATUS (Roxb.) Blume.

## 22811 to 22818—Continued.

22813. PINELLIA COCHINCHINENSE (Blume) W. F. Wight. (ARISAEMA COCHINCHINENSE Blume.)

22814. COLOCASIA INDICA (Lour.) Kunth.

22815. XANTHOSOMA SAGITTAEFOLIUM (L.) Schott.

22816. ALOCASIA MACRORRHIZA (L.) Schott.

22817. ARUM sp. (?)

22818. COLOCASIA ESCULENTA (L.) Schott.

"As many as seven species of the Colocasia are found native in Cochin China, two of which are edible. Of these two, the *Colocasia indica* and the *Colocasia esculenta*, known to the natives as *Khoia mon sen* and *Khoia mon sap*, respectively, the latter, which is by far the best species for food as well as in yield, includes two additional varieties, known as *Mon ding* and *Mon mink tia*.

"In addition to these edible species, there are as many as four ornamental varieties, and one, the *Pinellia cochinchinense*, is a medicinal herb; all flourish in a wild state.

"The cultivation of the edible species should begin in March or April. They require a marshy soil and are planted in ridges like sweet potatoes, about 30 cm. apart, with about twice that space between the ridges. Young offshoots from the bottom of the plants are also used for plant propagation, and the time necessary to mature is six months.

"The tubers are eaten boiled, the same as the sweet potato, and a kind of flour is also made from them. The price of a picul of 60 kilograms is 1 piaster 80—less than 7 cents per pound." (*Conner.*)

## 22819. DENDROCALAMUS STRICTUS (Roxb.) Nees. **Bamboo.**

From India. Presented by Mr. Jean Houzeau de Lehaie, Saint Symphorien, Belgium, through Lady Brandis, 21 Kaiserstrasse, Bonn, Germany. Received May 6, 1908.

See S. P. I. No. 21548 for description.

## 22820 to 22824. ANDROPOGON SORGHUM (L.) Brot.

From Entebbe, Uganda. Presented by Mr. M. T. Dawe, officer in charge, Botanical, Forestry, and Scientific Department. Received April 6, 1908.

Seed of the following sorghums; varietal descriptions by Mr. Carleton R. Ball:

22820.

Apparently a sweet sorghum from discoloration of pith; seed and glumes similar in shape and size to *Sumac* sorgo, but branches longer and spreading. Seeds remarkably small.

22821.

Similar to No. 22820; pith also discolored; head much longer; seeds larger.

22822.

Large head; long spreading branches; glumes short, black, shining; seeds flattened, somewhat pointed at tip, orange-red or paler to nearly dirty white.

22823.

Similar to No. 22822, but head and branches smaller; seeds dirty white or with pinkish tinge.

**22820 to 22824**—Continued.

**22824.**

Similar to No. 22823, but branches heavier; head more compact; seeds nearly white.

All except No. 22820 are closely related in general character, varying chiefly in color of seed and size of head. The first differs by much smaller and blunter seeds.

**22825.** ULMUS PUMILA L. **Elm.**

From Fengtai, near Peking, Chihli, China. Received through Mr. Frank N. Meyer, agricultural explorer, May 9, 1908.

"(No. 664, Mar. 26, 1908.) Var. *pendula*. A new form of a weeping elm; said to be the only tree of its kind in existence. Growing on a grave at Fengtai. Well fit as a cemetery tree in the semiarid regions of the United States. Chinese name *Lung tsao yu shu*, meaning dragon's claw elm, on account of the rather gnarled branches." (*Meyer.*)

**22826.** CITRUS AURANTIUM SINENSIS L. **Sweet orange.**

From Kabylia, Algeria. Presented by Dr. L. Trabut, government botanist, Algiers, Algeria. Received May 11, 1908.

"Garden orange. Matures last of April to May. Fruit very sweet." (*Trabut.*)

**22827.** CACARA EROSA (L.) Kuntze.

From Porto Rico. Presented by Mr. William Allan, 136 W. 79th street, New York, through Mr. C. V. Piper. Received May 11, 1908.

"Beans found growing wild over our place in Porto Rico; the pods are more the shape of cowpeas, but not over 4 inches long, and contain a brown bean. The plant is bushy, standing about 18 to 24 inches high. It does not run and seems to make only one growth per year; it has a large, bulbous root, similar to a ruta-baga turnip, some of them I have seen plowed up measuring 6 to 8 inches in diameter; very starchy when cut open." (*Allan.*) (For further description see S. P. I. No. 22971.)

**22828 to 22832.** DIOSCOREA spp. **Yam.**

From Sibpur, Calcutta, India. Presented by Mr. W. W. Smith, officiating superintendent, Royal Botanic Garden, through Mr. O. W. Barrett. Received May 11, 1908.

The following tubers, vernacular names in italic:

**22828.** DIOSCOREA ALATA L.
*Kham alu.*

**22829.** DIOSCOREA RUBELLA Roxb.
*Guraniya alu.*

**22830.** DIOSCOREA PURPUREA Roxb.
*Rakto guraniya alu.*

**22831.** DIOSCOREA FASCICULATA Roxb.
*Susni alu.*

"The above are cultivated generally, and edible when cooked." (*Smith.*)

**22832.** DIOSCOREA ANGUINA Roxb.
*Kukur alu.*
"This variety is wild; not eaten." (*Smith.*)

## 22833. PANICUM MAXIMUM Jacq.

From Pretoria, Transvaal, South Africa. Presented by Mr. J. Burtt Davy, government agrostologist and botanist, Transvaal Department of Agriculture. Received May 11, 1908.

"*Bush-Buffel* grass, one of our best perennial pasture and hay grasses. In the 'Flora Capensis,' Stapf refers this to *Panicum maximum*, but cultivated side by side with the latter for several years at my experiment station it shows marked and constant differences; these may not prove to be other than varietal, but are sufficient for cultural purposes. Our Buffel grass is finer in texture than Guinea grass and is not so tropical in its requirements. It is found in very dry country at an altitude of about 2,500 to 2,600 feet; it is somewhat sensitive to frost, the tops dying but the roots not being killed in winter. It may prove a useful grass on light soils in the Southern States and is worth trial also in Arizona and southern California. This is the principal feed of stock which trek down to the 'Winter's veld' in winter, and it is said to have great fattening properties even when dry. Seed does not ripen evenly." (*Davy.*)

## 22834. MEDICAGO SATIVA L. Alfalfa.

From near San Pedro, near Pacasmayo, Peru. Purchased in Peru by Wessel, Duval & Co., New York, N. Y. Secured from them by Mr. C. J. Brand. Received May 12, 1908.

*Andean.* "This alfalfa was secured through the same firm as was the Peruvian alfalfa, S. P. I. No. 9303, described in Bulletin 118, Bureau of Plant Industry." (*Brand.*)

"The parties in Peru who secured the seed state: 'The price to-day (June 9) is about 75 soles per 100 pounds Spanish, on board, Pacasmayo, packed in double bags. San Pedro seed is considered the best on the coast, but in our opinion that harvested in other parts of the province is just as good.

"'Alfalfa is generally sown (when there is water) in the months of June to September (the winter months), when the pasture grows highest, for in the summer months the alfalfa does not flourish and remains small. In general, the alfalfa fields last for four or more years, being cut down every 45 days. Alfalfa is sown in all kinds of earth, except in that containing saltpeter, which kills the plant. (Loose, sandy soil with moist subsoil is the best.)

"'As to harvesting the seed, this is uncertain. Very often the alfalfa fields flower in the best way, but with one or two nights of low temperature, all the flowers fall off and consequently the harvest of seed is bad. It is not possible to state the quantity of seed which can be gathered in this province in one year, for this depends on the abundance of alfalfa and the number of fields which are left for seed. The older the alfalfa fields the better seed they yield. During this year many of the fields which were left for seed have failed, for the reasons given above; still we consider that about 2,000 quintals of seed will have been gathered.'" (*Wessel, Duval & Co.*)

## 22835 to 22860. PHOENIX DACTYLIFERA L. Date.

From the Persian Gulf region. Received through Mr. William C. Magelssen, American consul, Bagdad, Turkey, May 14, 1908.

22835. *Maktum* (Asfar).
22836. *Maktum* (Ahmar).
22837. *Ascherasi.*
22838. *Khastawi.*
22839. *Halawi.*
22840. *Khadrawi.*

## 22835 to 22860—Continued.

22841. *Sukeri.*
22842. *Shukker Modabel.*
22843. *Barban.*
22844. *Beneffshi.*
22845. *Hussein Effendi.*
22846. *Taberzel*
22847. *Zehdi.*
22848. *Maiah.*
22849. *Jozi.*
22850. *Shukker.*
22851. *Shitwi Asfar.*
22852. *Duggal* (Omkom-el Ahmar).
22853. *Duggal* (Sultani).
22854. *Duggal* (Shomaieh).
22855. *Duggal* (Hilwa).
22856. *Aschcrasi* (Male).
22857. *Khastawi* (Male).
22858. *Barban* (Male).
22859. *Zehdi* (Male).
22860. *Khadrawi* (Male).

## 22861 to 22873.

From Peking, Chihli, China. Received through Mr. Frank N. Meyer, agricultural explorer, at the Plant Introduction Garden, Chico, Cal., May 4, 1908.

The following seeds and cuttings:

22861. POPULUS sp. **Poplar.**

From Wutaishan, Shansi, China. "(No. 260, Feb. 27, 1908.) A white-barked poplar, standing apparently between *P. alba tomentosa* (Carr.) Wesm. and *P. balsamifera suaveolens* (Fisch.) Wesm. Growing at 5,000 to 8,000 feet elevation. Used extensively for sand and stone binding, and planted at the mouth of ravines so as to prevent the mountain torrents carrying their débris into the cultivated lands of the valleys. Of use to us for the same purpose, and as a cheerful avenue tree for winter effects. Chinese name *Ching yang shu*, meaning green poplar, on account of the bark being very green as long as the tree is young." (*Meyer.*)

22862. (Undetermined.)

From Tchailingtse Temple, Wutaishan, Shansi, China. "(No. 265, Feb. 25, 1908.) A shrub resembling a Lonicera, but spiny on the young shoots and of a very open growth. Found in shady, sandy spots in a larch forest at about 8,000 feet elevation. Chinese name *Tcheng pee.*" (*Meyer.*)

22863. PHILADELPHUS sp. (?)

From Tchailingtse Temple, Wutaishan, Shansi, China. "(No. 266, Feb. 25, 1908.) A low shrub growing in open places in a larch forest at about 8,000 feet elevation. Chinese name *Lu tao mo.*" (*Meyer.*)

22864. HYDRANGEA sp.

From Tchenghaitse Temple, Wutaishan, Shansi, China. "(No. 267, Feb. 27, 1908.) Probably *Hydrangea vestita pubescens* Maxim.; found growing in dense shade, as the borders of a pine-tree plantation. Apparently the same as No. 187 (S. P. I. No. 21925). Chinese name *Mar pa tse.*" (*Meyer.*)

22865. VIBURNUM sp.

From Tchenghaitse Temple, Wutaishan, Shansi, China. "(No. 268, Feb. 27, 1908.) Found growing in thickets on mountain slopes at high altitudes." (*Meyer.*)

## 22861 to 22873—Continued.

**22866.** (Undetermined.) **Sedge.**

From near Taichou, Shansi, China. "(No. 279, Mar. 2, 1908.) A sedge growing on strongly alkaline lands of a light sandy nature. Seems to be able to stand any amount of drought." (*Meyer.*)

**22867.** TAMARIX sp.

From near Taiyuanfu, Shansi, China. "(No. 287, Mar. 9, 1908.) A Tamarix growing on sandy and strongly alkaline soils; might be utilized in the alkaline sections of the western United States. Mostly seen as a low shrub, but when left alone grows up into a small tree. The twigs are used for basket making and for fuel. Chinese name *Shan cheng liu.*" (*Meyer.*)

**22868.** FUNKIA sp.

From Tsingyuenhsien, Shansi, China. "(No. 662, Mar. 12, 1908.) This plant is said to bear large, white, fragrant flowers. Has to be kept indoors in winter time. Chinese name *Pai yu tcheng hua.*" (*Meyer.*)

**22869.** PAEONIA ALBIFLORA Pall. **Peony.**

From Bimoyen Temple, mountains west of Peking, Chihli, China. "(No. 663, Mar. 18, 1908.) A very fine, white, double-flowered, fragrant peony (herbaceous). Chinese name *Pai shoo yoo hua.*" (*Meyer.*)

**22870.** GLYCYRRHIZA GLABRA L. **Licorice.**

From near Mapootoo, Hsintchan District, Shansi, China. "(No. 939a, Mar. 8, 1908.) Found growing along dry and exposed ridges." (*Meyer.*)

**22871.** EUONYMUS sp.

From near Tongchangdi, Kwohsien District, Shansi, China. "(No. 940a, Mar. 5, 1908.) Seeds picked up from the ground in a loess gorge, where the small shrubs themselves were in unapproachable situations." (*Meyer.*)

**22872.** EUONYMUS sp.

From Taiyuanfu, Shansi, China. "(No. 941a, Mar. 13, 1908.) A shrubby Euonymus, semideciduous, bearing many white capsules, out of which the scarlet seeds peep. Is grown sparsely by the Chinese as a pot plant for winter table decoration. Local name *Shi yüe mae.*" (*Meyer.*)

**22873.** RHAMNUS sp.

From mountains near Tsintse, Shansi, China. "(No. 942a, Mar. 9, 1908.) A very dwarfy Rhamnus, found growing on dry, exposed mountain slopes. Well fit for rockery purposes." (*Meyer.*)

## 22874 to 22885. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Tokyo, Japan. Purchased from the Tokyo Plant, Seed, and Implement Company. Received May 14, 1908.

The following seeds, varietal identifications and descriptions made by Mr. H. T. Nielsen:

**22874.** Green.

**22875.** *Flat King.* Same as Nos. 19982 and 17252.

**22876.** Yellow. Similar in appearance to *Hollybrook*, No. 17269.

**22877.** *Okute.* Apparently identical with No. 19986.

**22878.** *Butterball.* Apparently identical with Nos. 19981 and 17273.

## 22874 to 22885—Continued.

22879. Yellow. Evidently two varieties; most of the seed very similar in appearance to *Acme*, No. 14954.

22880. Yellow. Quite closely resembling *Hollybrook*.

22881. Green.

22882. Yellow. Apparently identical with No. 20892.

22883. *Buckshot*. Apparently identical with No. 19987.

22884. Yellow, with a slight purple marking on many of the seeds.

22885. *Amherst*. Apparently identical with Nos. 19983 and 17275.

## 22886 to 22888.

From Swatow, Kwangtung, China. Presented by Mr. William Ashmore, jr., through Rev. J. M. W. Farnham, Chinese Tract Society, Shanghai, China. Received May 14, 1908.

The following seeds, varietal descriptions by Mr. H. T. Nielsen:

22886. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

Black.

22887. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

Red with one end and half of keel white.

22888. VIGNA CATJANG (Burm.) Walp.

Similar in appearance to *Chinese Red*, Nos. 17328 and 22635, but seeds are smaller.

## 22891 to 22895.

From Bridgetown, Barbados, British West Indies. Presented by Mr. John R. Bovell, superintendent, Agricultural Department, at the request of the Imperial Commissioner of Agriculture for the West Indies. Received May 13, 1908.

The following tubers:

22891. COLOCASIA sp. **Taro.**
*Japanese taro.*

22892. COLOCASIA sp. **Taro.**
*Malanga* (via) Cuba.

22893. COLOCASIA sp. **Taro.**
*Trinidad Yellow.*

22894. COLOCASIA sp.
*Dasheen.*

22895. XANTHOSOMA sp. **Yautia.**
*Amarilla.*

For previous shipment and remarks, see Nos. 22513 to 22523.

## 22896. (Undetermined.)

From southern Brazil. Presented by Mr. H. Nehrling, Gotha, Fla., through Mr. R. A. Young. Received May 18, 1908.

"A new root crop from southern Brazil, where it is called *Mangaridas*. The tubers look much like Caladium tubers, but the foliage differs from that genus. It is undoubtedly an aroid, but what it may be I do not know. It is cultivated largely in southern Brazil for its edible tubers. It is certainly no *Xanthosoma*, and it is no *Colocasia*." (*Nehrling.*)

## 22897 to 22903.

From Paotingfu, Chihli, China. Presented by Rev. J. W. Lowrie, D. D., through Rev. J. M. W. Farnham, Chinese Tract Society, Shanghai, China. Received April 22, 1908.

The following seeds. Chinese names in italic as given by Mr. Lowrie. Descriptions of varieties by Mr. H. T. Nielsen.

**22897 to 22901.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

**22897.** *Da ching don.*

Green. Similar to No. 17857.

**22898.** *Hwang don.*

Yellow.

**22899.** "*Hei don.* Boiled as a fodder for mules and horses. Oil expressed from it, and refuse used as manure." (*Lowrie.*)

Black. Similar to *Cloud*, No. 16790.

**22900.** "*Da wu don.* Tends to vary after successive plantings." (*Lowrie.*)

Black. Similar in appearance to *Nuttall*, Nos. 17253 and 19183, but has green cotyledons.

**22901.** *Hsiao bai hei don.*

Smoky yellow.

**22902.** VIGNA SESQUIPEDALIS (L.) W. F. Wight.

*Tsai don.*

Red.

**22903.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

*Giang don.*

Mottled. Similar in appearance to Nos. 17339 and 18617.

## 22904 to 22906.

From Shanghai, Kiangsu, China. Received through Mr. Frank N. Meyer, agricultural explorer, at the Plant Introduction Garden, Chico, Cal., August, 1907.

The following seeds:

**22904.** MYRICA NAGI Thunb.

From Dongsi, Chehkiang, China. "(No. 732a, June 25, 1907.) Large-fruited variety, called by foreigners the 'strawberry tree,' by the Chinese *Yang mae*. A small evergreen tree or large shrub, bearing round, wine red colored fruits which are very pleasing to the taste and can be eaten fresh, stewed, or preserved in spirits. The Chinese say the tree can not bear transplanting, so confine their roots by sowing them one or two seeds in each pot." (*Meyer.*)

**22905.** MYRICA NAGI Thunb.

From Dongsi, Chehkiang, China. "(No. 733a, June 25, 1907.) Medium-sized fruits. For further information see preceding number (S. P. I. No. 22904). Besides being a very agreeable fruit, the tree is also decidedly ornamental, especially when loaded with its carminic fruits. Loves, apparently, sheltered, well-drained locations." (*Meyer.*)

**22904 to 22906**—Continued.

**22906.** MYRICA NAGI Thunb.

From Dongsi, Chehkiang, China. "(No. 734a, June 25, 1907.) Small-fruited variety. For further remarks, see Nos. 732a and 733a (S. P. I. Nos. 22904 and 22905). The Chinese graft the large, sweet-fruited varieties upon the wild seedlings, but even among the seedlings there is a large variation in size of fruits and in productiveness." (*Meyer.*)

For previous importations see S. P. I. Nos. 9164 and 9314.

**22907.** CAREX TRIANGULARIS Boeckler. **Sedge.**

From Texas. Collected by Mr. F. W. Clarke, special agent in charge of matting-rush investigations. Received May, 1908.

"This seed was collected from plants growing in ditches and marshy places along and back from the Victoria division of the S. P. R. R. between Wharton and El Campo, Tex. No seed was gathered from a stalk less than 3 feet tall, and most of the seed was secured from plants 3 feet 6 inches high and upwards. This Carex occurs in abundant quantities from Crowley, La., to Victoria, Tex., and I presume it covers the whole coast country, but it is probably most plentiful in the black, waxy rice belt of Texas." (*Clarke.*) (For previous introduction see S. P. I. No. 20990.)

**22908.** LENS ESCULENTA Moench.

From Mexico. Secured by Mr. David Griffiths, assistant agriculturist, United States Department of Agriculture, on the market at Laredo, Tex. Received May 6, 1908.

"*Lanteja.* A common leguminous plant grown in Mexico extensively and used in about the same way as the chick pea." (*Griffiths.*)

**22909.** PICEA OBOVATA SCHRENKIANA (Fisch. & Mey.) Masters.

From St. Petersburg, Russia. Presented by Dr. A. Fischer von Waldheim, Imperial Botanic Gardens. Received March 27, 1908.

Tall, pyramidal tree, with pendulous branchlets and dull green leaves. Native of central Asia. (*Extract from Bailey.*)

**22910.** XANTHOSOMA sp. **Yautia.**

From Barbados, British West Indies. Presented by Mr. Valpierre Croney, 9 East 97th street, New York, through Mr. O. W. Barrett. Received May 11, 1908.

*Nut Eddo.*

**22911 to 22913.** ANDROPOGON SORGHUM (L.) Brot.

From Tsungming Island, China. Obtained through Rev. J. Ware and presented by Mr. S. P. Barchet, interpreter, American consulate, Shanghai, China. Received May 20, 1908.

**22911.** **Kowliang.**

*Brown.*

**22912.** **Kowliang.**

*Black-Hull.*

## 22911 to 22913—Continued.

**22913.** **Sorgo.**

*Chinese.*

"The white variety (S. P. I. No. 22912) is considered inferior to the red (S. P. I. No. 22911, *Brown*), though planted in the same way. It is planted in richly manured land, in rows 6 inches wide covered lightly with half an inch of earth. If plants come up too thick or crowded, the plants which should be removed are not pulled, but cut off with a sharp knife, so as not to disturb the roots of neighboring plants." (*Barchet.*)

## 22914 and 22915.

From Shanghai, Kiangsu, China. Received through Mr. Frank N. Meyer, agricultural explorer, May 19, 1908.

**22914.** ZIZYPHUS SATIVA Gaertn. **Chinese date.**

From Tientsin, Chihli, China. "(No. 667, Apr. 6, 1908.) Variety *tortuosa*. The *Crooked* or *Dragon's Claw* Chinese date. Cuttings of a very peculiar variety of the Chinese date, making a quaint and real Chinese impression. A rare plant, and very expensive in China. Chinese name *Lung tsao tsao shu*. Said to be very difficult to graft." (*Meyer.*)

**22915.** CASTANOPSIS TIBETANA Hance. **Chestnut.**

From Shanghai, Kiangsu, China. "(No. 959a, Apr. 14, 1908.) A very large leaved, evergreen chestnut, growing into a stately, ornamental tree bearing edible nuts. Very rare in China. Obtained through Bishop G. E. Moule, of Hangchow. These trees will grow in the localities where oranges thrive." (*Meyer.*)

## 22916 to 22918.

From Gyangze, Tibet. Procured from the British trade agent at Gyangze and presented by Dr. Robert T. Morris, 616 Madison avenue, New York, through Mr. O. W. Barrett. Received May 19, 1908.

**22916.** TRITICUM AESTIVUM L. **Wheat.**

**22917.** HORDEUM DISTICHON NUDUM L. **Barley.**

**22918.** PISUM ARVENSE L. **Field pea.**

"I would not presume to venture any opinion about the value of these seeds, but they grow in very high mountain regions and must at least be hardy in trying climates." (*Morris.*)

## 22919 to 22922. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Ingchung, via Fuchau, China. Presented by Mr. J. Willis Hawley. Received May 22, 1908.

The following seeds. Varietal descriptions by Mr. H. T. Nielsen:

**22919.** Black. Very similar to No. 22886.

**22920.** Yellowish green.

**22921.** Yellow. Very similar to No. 22714.

**22922.** Yellow. Seed resembles *Mammoth* very closely, but slightly smaller.

**22923.** STIZOLOBIUM sp. **Velvet bean.**

From Pensacola, Fla. Presented by Mr. P. K. Yonge, through Prof. S. M. Tracy, Biloxi, Miss. Received May 23, 1908.

*White.*

**22924 and 22925.**

From Italy. Presented by Dr. Robert T. Morris, 616 Madison avenue, New York, through Mr. O. W. Barrett. Received May 22, 1908.

**22924.** LAGENARIA VULGARIS Ser. **Gourd.**

"*Zucctuni.* Similar to *Zucchette* (S. P. I. No. 22925), but having smaller fruits." (*Morris.*)

**22925.** CUCURBITA PEPO L. **Pumpkin.**

"*Zucchette.* Climbing vine; very long fruit; used like cucumber, sliced and in salads; also boiled like turnip, and may be stuffed with meat and boiled or fried." (*Morris.*)

**22926.** ZINZIBER OFFICINALE Rosc. **Ginger.**

From Kingston, Jamaica. Presented by Mr. W. Harris, superintendent, Department of Agriculture, Hope Gardens, at the request of Dr. R. H. True. Received May 29, 1908.

Procured for Dr. R. H. True's experiments at the Drug Plant Garden, Orange City, Fla.

**22927.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Shanghai, Kiangsu, China. Presented by Rev. J. M. W. Farnham, Chinese Tract Society. Received May 27, 1908.

Black. "Identical with *Shanghai*, No. 14952; cotyledons are green." (*Nielsen.*)

**22928.** CUCURBITA MAXIMA Duch. **Venetian squash.**

From Milan, Italy. Purchased from Fratelli Ingegnoli. Received May 28, 1908.

"*Zucca marina.* Sow in April in ground well manured and watered, making the holes distant from each other 50 centimeters; fill each one with good soil mixed with manure in which place two or three seeds and press down the earth. When the plants have developed, leave the more robust ones. Nourish and water abundantly with water mixed with liquid manure.

"To have large fruit leave only two or three fruits on each plant and remove the superfluous branches." (*Fratelli Ingegnoli.*)

**22929 to 22933.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Mount Silinda, Melsetter District, Rhodesia, South Africa. Presented by Rev. Columbus C. Fuller. Received May 18 and 23, 1908.

The following seeds, descriptions of varieties by Mr. H. T. Nielsen:

**22929.** Similar in appearance to *Unknown*, but has a slight purplish tinge.

**22930.** Similar in appearance to *Macassar*, Nos. 21006 and 21299.

**22931.** Similar in appearance to *New Era*, but seed is a trifle smaller.

**22929 to 22933**—Continued.

**22932.** Black. Similar to our common black varieties, but seed a trifle smaller and many of them marked with small, gray specks.

**22933.** Similar in appearance to *Taylor*, No. 17342, but not quite so large.

"The smaller varieties are best for our rather poor soil." (*Fuller.*)

**22934.** DOLICHOS LABLAB L.

From Karlsruhe, Germany. Presented by Prof. L. Graebener, director, Botanical Gardens. Received May 28, 1908.

**22935 and 22936.**

From Tekhôe, via Fuchau, Fuhkein, China. Presented by Miss Jessie Alice Marriott. Received June 1, 1908.

**22935.** VIGNA SESQUIPEDALIS (L.) W. F. Wight.

**22936.** PISUM ARVENSE L. **Field pea.**

**22937.** FICUS sp.

From Mokanshan, Chehkiang, China. Received through Mr. Frank N. Meyer, agricultural explorer, June 2, 1908.

"(No. 668, Apr. 22, 1908.) An ornamental creeping Ficus covering here and there rocks, bowlders, and tree trunks. Of use as a covering vine in the mild, moist-wintered regions of the United States. Closely allied to the well-known *Ficus repens*." (*Meyer.*)

**22938.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Pará, Brazil. Presented by Mr. C. F. Baker, Museu Goeldi. Received June 1, 1908.

"*Feijaõ manteiga.* One of the highest priced beans in the Pará market. Would make one of the very best soiling crops for this region." (*Baker.*)

"One of the *Lady* peas, probably *Conch*." (*Nielsen.*)

**22939.** CITRUS AURANTIUM SINENSIS L. **Sweet orange.**

From Pará, Brazil. Presented by Mr. C. F. Baker, Museu Goeldi. Received June 1, 1908.

"One of the largest, finest oranges grown at Pará." (*Baker.*)

**22940.** MEDICAGO SATIVA L. **Alfalfa.**

From Lima, Peru. Received from E. Sayan Palacios & Co., through Mr. C. J. Brand, May 20, 1908.

"This is a distinct Peruvian type of alfalfa as distinguished from the Chilean." (*Palacios.*)

"This will no doubt prove to be very similar to, if not identical with, S. P. I. No. 9303." (*Brand.*)

**22941.** SAGUERUS PINNATUS Wurmb. **Sugar palm.**

From Buitenzorg, Java. Presented by Dr. M. Treub, director, Department of Agriculture. Received June 4, 1908.

"In Java the *Arenga saccharifera* (*Saguerus pinnatus*) is not cultivated in regular plantations; it needs much room and light and may be planted at

**22941**—Continued.

distances of 15 to 18 feet; the planting holes have to be 2 to 3 feet in breadth and in depth. At an altitude of 3,000 feet above sea level the tree is fit to be tapped at an age of about 16 years. It yields more at an altitude of 1,800 feet, where it fruits after 12 or 13 years. In the lowlands, too, it will succeed, but I can not say when it fruits there.

"The *aren idjo* (green arenga) is considered to be the most productive variety of our country. In the high regions it produces during about four years, in lower parts during three years; the quantity of juice and sugar continue getting less as the tree grows older. At the first tapping—this means when the first male peduncle is tapped—the tree produces about 7 liters of juice per twenty-four hours during about two and one-half months. Of some trees a second peduncle may be tapped immediately after the first one; of others, only after some time (three months). An arenga tree may be tapped from three to ten times, with an average of six times. At the second and following tappings the arenga produces at every tapping for a period of about forty-five days about 5½ liters of juice (per twenty-four hours) of a declining sugar content; about 3½ liters of juice of the first tapping give about 0.617 kilo of sugar; the following tappings give the same quantity of sugar to a production of 5½ liters of juice. The production of sugar of one tree during its whole lease of life may be stated at about 225 kilos, with a local value of 13 cents (about 5 American cents) per kilo, or in total about 30 Dutch guilders (12 American dollars).

"The sugar is prepared by boiling the juice. This boiling takes much fuel, which fact gives no trouble in the interior of Java; however, if wood had to be bought for the purpose—as it would be in towns of Java—the value of the sugar would not make good the expenses for fuel. Sugar, therefore, is not manufactured in and near the towns.

"As to the method of tapping, I beg to refer to the work of A. Tschirch, Indische Heil und Nutzpflansen, Berlin, 1892, page 160. This book does not mention that the male peduncle has to be swung to and fro during some days, and afterwards beaten effectively before the inflorescence is cut off; further, that every day during the tapping a slice of the peduncle has to be cut off. Experiments made here some years ago by Professor Molisch have shown that without any doubt stimuli have a great effect on the flow of sugar-containing juice.

"Taking the figures given above as a basis for calculation, an acre can be planted with 160 trees of *A. saccharifera* (*S. pinnatus*), which, producing 500 pounds of sugar per tree, will theoretically give a total production of 80,000 pounds, equal to 35 tons per acre, at the end of from fifteen to twenty years, or an average of from 2 to 2¾ tons per year.

"Personally, I am inclined to think the actual production will be considerably below these figures, one reason for this being that with such close planting the trees will not be able to develop fully; probably an average of about 100 fully developed producing trees will be nearer the mark, but even then a production of over 1 ton per year will be obtained.

"The great drawback is that, from the nature of the sugar palm, it will probably not be possible to grow catch crops after the third or fourth year; during the first twelve to sixteen years no profits are obtained; then comes a big harvest during three or four years, after which the plantation is valueless, and it will entail considerable expense to again clear the land for other crops. Moreover, taking into consideration that most people, and especially tropical people, are not inclined to wait a dozen years or longer before they get any

**22941**—Continued.

return for their labor, I should not consider it advisable to make regular plantations of *A. saccharifera* (*S. pinnatus*). Quite a different matter is to plant the tree in village gardens along roads, alternating with the shade trees. In such locations, under which the labor of planting and cultivating is next to nothing, the people of Porto Rico can afford to wait for the returns, which will probably prove quite remunerative." (*Treub.*)

## 22942 to 22944.

From Uitenhage, Cape Colony, South Africa. Presented by Mr. H. Fairey, Public Park and Gardens. Received June 4, 1908.

**22942.** ANDROPOGON SORGHUM (L.) Brot. **Sorgo.**

"This sorgo has pyramidal spreading panicles similar to *Amber*, but with larger spikelets and seed." (*Ball.*)

**22943.** PENNISETUM AMERICANUM (L.) Schum. **Pearl millet.**

"This seed is from Rhodesia, South Africa, and is known as *Myouti* by the Mashona natives (pronounced something like Meout). The seed is much used, I am told, for poultry feeding, and an oil can also be extracted from it." (*Fairey.*)

**22944.** (Undetermined.)

"A legume of no economic value so far as I know, but is useful for edgings to walks and beds in this country, but would not withstand your winters." (*Fairey.*)

## 22945. PHASEOLUS sp. **Bean.**

From Java. Presented by Mr. P. D. Mulder, Banda-Neira, Molukken Islands, East Indies. Received June 4, 1908.

"*Kratok.* The seeds when young are used by the natives for food. When the beans are older they are exported. In Java it is planted for making the bottom lands more fertile, and much profit is derived from it." (*Mulder.*)

## 22946. MEDICAGO SATIVA L. **Alfalfa.**

From Mitchell, S. Dak. Grown by Prof. W. A. Wheeler. Received through Mr. C. J. Brand, June 3, 1908.

"(P. L. H. No. 3332.) The so-called Baltic alfalfa, grown from South Dakota Agricultural Experiment Station No. 167. The original source of the seed is unknown, the parent seed having been purchased in 1896 from a seed dealer at Hartford, S. Dak. This is a very free seeding variety and is unusually hardy." (*Brand.*)

## 22947. MEDICAGO SATIVA L. **Alfalfa.**

From Excelsior, Minn. Secured by Mr. C. J. Brand from Prof. W. A. Wheeler, Mitchell, S. Dak., and was probably grown by Mr. A. B. Lyman, of Excelsior, Minn., from whom Professor Wheeler purchased it. Received June 3, 1908.

*Grimm.* (P. L. H. No. 3333.)

**22948.** MEDICAGO SATIVA L. **Alfalfa.**

From Guaranda, Ecuador. Received from Mr. H. R. Dietrich, consul-general, Guayaquil, Ecuador, through Mr. C. J. Brand, June 8, 1908.

"(P. I. H. No. 3326.) A rapid-growing form of alfalfa from the Andean plateau, similar in many respects to the Peruvian alfalfa described in Bulletin No. 118, Bureau of Plant Industry." (*Brand.*)

**22949.** MEDICAGO SATIVA L. **Alfalfa.**

From Chile, South America. Presented by Mr. José D. Husbands, Limávida, Chile, through Mr. C. V. Piper. Received June 3, 1908.

"Wild alfalfa found in the foothills of the Cordillera, in a section of moist, virgin land, upon which the alfalfa appears as a weed when field crops are planted for the first time." (*Husbands.*)

**22955.** GARCINIA BINUCAO (Blanco) Choisy.

From Manila, P. I. Presented by Mr. W. S. Lyon. Received June 11, 1908.

"This has the widest range of any species (of Garcinia) which I know; its fruiting season covers the longest time (March to July); it is fairly robust, sometimes 40 meters high, and is the most cosmopolitan of any species we have. I have seen it at sea level and up to 3,000 feet. This *binucao*, or *camangis*, or *gatasan*, et al. is found in rock fissures; in dry, gravelly, sterile washes; on the margins of swamps, and in rich, fat valley soils." (*Lyon.*)

**22956.** ANONA RETICULATA L. **Custard apple.**

From Port of Spain, Trinidad, British West Indies. Presented by Dr. E. André. Received June 10, 1908.

**22957.** BELOU MARMELOS (L.) W. F. Wight. (AEGLE MARMELOS (L.) Correa.) **Bael tree.**

From Nyaunglebin, Burma, India. Presented by Rev. Henry W. Hale, Box 30, R. F. D. No. 1, Savannah, Ga. Received June 8, 1908.

"These seeds are from the very best bael fruit." (*Hale.*)

"The bael tree of India ascends to an altitude of 4,000 feet. It grows to a height of 40 feet. The fruit has matured near Rockhampton, Australia (23° S. lat.) The plant is readily propagated from root cuttings and is otherwise of easy cultivation. The fruit is of medicinal, particularly antidysenteric, value. The root and the leaves are also used medicinally." (*Extract from Von Mueller's Select Extra-Tropical Plants.*) (For previous introduction see S. P. I. No. 19367.)

**22958 to 22960.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Mount Silinda, Malsetter District, Rhodesia, South Africa. Presented by Rev. Columbus C. Fuller. Received June 13, 1908.

The following seeds. Descriptions of varieties by Mr. H. T. Nielsen:

**22958.** Black with gray specks. The seed has the same general appearance as many of the hybrids between *Black* and *Iron.*

**22959.** Red. Similar to *Red Ripper*, but seed is larger.

**22960.** *Clay.*

**22961.** PHALARIS COERULESCENS Desf.

From Bathurst, New South Wales, Australia. Presented by Mr. R. W. Peacock, manager, Experimental Farm, through Mr. C. V. Piper. Received June 13, 1908.

"This new fodder plant has been tried by Mr. J. Furphy, of Hill End, in the Moe District, West Gippsland, who says it supplies what has long been wanted—a winter feed for stock, as it resists the frosts and keeps growing right through the winter months. Mr. Furphy states that he obtained a few plants and transplanted them at the end of April of last year, putting them out in drills 3 feet apart and 2 feet in the drills. By the end of June they had made a growth of 2 feet, sending out shoots until, by the end of the season, as many as 167 stems had been produced by one plant, the highest averaging 7 feet, while some of the stronger stems obtained a height of 8½ feet, the clumps measuring 2 feet across. Although it was a severe winter, not a yellow leaf could be seen, and the growth was continuous, with nice, succulent blades up to the flowering stems. The roots are fibrous, the foliage very dense, and color a bright green in the middle of winter. It seems to succeed in the colder districts where other plants do not thrive. Autumn planting is recommended, and Mr. Furphy favors giving the plants plenty of room. His plot yielded at the rate of 60 bushels of seed and 8 tons of hay to the acre. He cut the crop at the end of January, this year, and in 45 days it had grown a second crop nearly 3 feet high, the weather meantime being very dry. As to the milk-producing qualities of the grass, judging by its succulent quality and the abundance of the crop, Mr. Furphy is convinced that it will prove a most valuable fodder for the dairy herd." (*Journ. Dept. Agric. Western Australia*, vol. 15, p. 652. 1907.)

**22962.** MEDICAGO SATIVA L. **Alfalfa.**

From about 50 miles south of Lan Chow, Kansu, China. Presented by Rev. David Ekvall, Tehtao, Kansu, China, through Mrs. Edward Q. Knight, Takoma Park, D. C. Received June 16, 1908.

"The natives say this seed must be sown with something else to grow well." (*Ekvall.*)

**22963 to 22968.**

From Argentina, South America. Presented by Señor Mario Estrada, Division of Agriculture, Buenos Aires. Received June 10, 1908.

**22963** to **22965.** From province of Buenos Aires.

**22963.** ERAGROSTIS sp.

**22964.** ERAGROSTIS sp.

**22965.** RUMEX CRISPUS *L.*

**22966.** ANDROPOGON SACCHAROIDES Sw.

From province of Santa Fé.

**22967.** BRIZA sp.

From province of Santa Fé.

**22968.** PANICUM BERGI Arech.

From province of Buenos Aires.

**22969.** GLADIOLUS SALMONEUS Baker. **Gladiolus.**

From Merea, Durban, Natal. Presented by Dr. J. Medley Wood, director, Natal Botanic Gardens. Received June 18, 1908.

"Corms of a handsome but not very common species." (*Wood.*)

**22970.** MANGIFERA INDICA L. **Mango.**

From Bombay Province, India. Procured by Mr. Wm. H. Michael, consul-general, Calcutta, India. Received June 19, 1908.

*White Alfonso.* "The Advocate of India has this to say of the *White Alfonso* mango: 'We have at this moment on the office table a specimen of mango which has been sent to us, the like of which has never before been grown. It is a *White Alfonso*, perfect in shape, with a beautiful satin skin and a subtle aroma which faithfully indicates the delicate flavor of its golden pulp. It is a triumph in every respect, and with the smallest stone for its size. Yet it is of gigantic weight and proportions. A good specimen of the *Golden Alfonso*, so far our best mango, does not weigh more than about 4 ounces. The *White Alfonso* just fails to tip the beam at the weight of 2½ pounds. The *White Alfonso*, or *Safeda Afoos*, is grown about 20 miles outside Bombay city, in the direction of Borivill, and although the fruit has reached gigantic size, this is the first occasion on which the trees have borne fruit. There is only a limited supply at present, but the new fruit seems destined to wrest the pride of place from the still glorious specimen, the *Golden Alfonso*. A peculiarity of the pulp is its pale rose colored hue. The few which have been offered to the public have found ready purchasers at 15 rupees, or $5 per dozen.'" (*Michael.*)

**22971.** CACARA EROSA (L.) Kuntze. **Hicama.**

From Guadalajara, Mexico. Presented by Señor Luis Rosas, through Mr. Frederic Chisolm. Received June 20, 1908.

"The plant, which in both Guam and the Philippines bears its Mexican name, was probably brought (to Guam) from Mexico. It is now common in the woods, climbing among the bushes and trees and twining about everything with which it comes in contact. The young root is much like a turnip in shape and consistency, and is easily peeled like a turnip. It is usually eaten raw, and may be prepared with oil and vinegar in the form of a salad. According to Dr. Edward Palmer it is extensively cultivated in Mexico, where the natives pinch off the blossoms and seed pods, giving as a reason that if the seeds are allowed to mature the roots are not good. In Mexico the roots are much eaten raw, but are also pickled, boiled in soup, and cooked as a vegetable. As they come from the ground they are crisp, sweet, juicy, and of a nutty flavor. They are nourishing and at the same time quench the thirst, so that they are much liked by travelers. One way of preparing the raw roots is to cut them in thin slices and sprinkle sugar over them. They may also be boiled and prepared with batter in the form of fritters, and in Mexico they are often minced or grated, and with the addition of sugar, milk, eggs, and a few fig leaves for flavoring, made into puddings." (*Safford's Useful Plants of Guam.*)

"The Jicama (Hicama) de agua is one of the most widely popular vegetables grown in Mexico, and when in season one rarely meets an Indian who is not munching a large specimen. For the table I have seen them peeled, thinly sliced, and served with sliced oranges, forming the dessert dish called 'pico de gallo'—cock's bill. In the hot season the tubers are delightfully refreshing, whether eaten out of hand or sliced as a made dish. The plant cultivated is usually planted either in hills or on the ridge of ordinary rows, and should be given rather careful cultivation, the tips of the vines and all flower buds being pinched off in order to make the plant develop large tubers." (*Chisolm.*)

## 22972 and 22973. MEDICAGO SATIVA L. Alfalfa.

From Chile. Presented by Mr. Rea Hanna, American consul, Iquique. Received June 19, 1908.

**22972.**

From Pica, Tarapacá, Chile. "The man from whom I procured it says that the alfalfa from which it was obtained has been planted 12 years and produces from six to eight crops per year." (*Hanna.*)

**22973.**

From Matilla, Chile. "I do not know that there is any difference between this and the above (S. P. I. No. 22972), except that it comes from another small oasis near Pica. Many of these fields have been planted for nearly 100 years without reseeding and give remarkable crops, and the plants may have acquired some new qualities of virility from the wonderful soil and atmosphere." (*Hanna.*)

## 22974 to 23038.

From China. Received through Mr. Frank N. Meyer, agricultural explorer, and brought by him to the Plant Introduction Garden, Chico, Cal., June, 1908.

The following plants:

**22974.** SOPHORA JAPONICA L.

From Fengtai, near Peking, Chihli, China. "(No. 331, Mar. 31, 1908.) The well-known Pagoda tree, of which there are two varieties in China, one with a whitish bark and the other with black. Both varieties are supposed to be among this lot, but it is not until after a few years that one is able to see the difference between the trees; when young they all look alike. Chinese name *Huai shu.*" (*Meyer.*)

**22975.** ULMUS PUMILA L. Elm.

From Fengtai, near Peking, Chihli, China. "(No. 332, Mar. 31, 1908.) The Chinese elm, used all over northern China and Manchuria as an avenue, shade, and timber tree. Resists droughts, extremes of heat and cold, and neglect remarkably well; will be a good shade tree for the semiarid northern regions of the United States. The Chinese carts are mainly constructed from the wood of this tree. Chinese name *Dja yü shu*, meaning family elm tree." (*Meyer.*)

**22976.** ERIOBOTRYA JAPONICA (Thunb) Lindl. Loquat.

From Tangsi, Chehkiang, China. "(No. 333, Mar., 1907, and Apr., 1908.) A loquat said to bear white or at least very pale yellow colored fruits, which have a very fine flavor. A rare variety. Chinese name *Pai bibaw.*" (*Meyer.*)

**22977.** MYRICA NAGI Thunb.

From Tangsi, Chehkiang, China. "(No. 334, Mar., 1907.) The so-called 'strawberry tree' of central China; produces nice edible fruits which can be preserved or used in pastries, fruit sirups, etc. Chinese name *Yang mae.*" (*Meyer.*)

**22978.** VIBURNUM MACROCEPHALUM Fortune.

From Soochow, Kiangsu, China. "(No. 335, Apr. 26, 1908.) The giant Chinese snowball. A tall bush bearing enormous umbels of white flowers, sometimes over 1 foot in diameter. The plants are mostly used

## 22974 to 23038—Continued.

in gardens to cover up a corner or hide a wall, but they are also often grafted upon the wild form which has single flowers, and grown then in a dwarfed state in tubs or pots. Probably not hardy north. Chinese name *Mu bun sen chu.*" (*Meyer.*)

**22979.** ILEX CORNUTA Lindl. & Paxt. (?)

From Soochow, Kiangsu, China. "(No. 336, Apr. 26, 1908.) The Chinese holly. A very ornamental bush or small tree loaded in winter with scarlet berries. A slow grower, and probably not hardy north. Chinese name *Ta hu tse.*" (*Meyer.*)

**22980.** CAESALPINIA sp.

From Soochow, Kiangsu, China. "(No. 337, Apr. 26, 1908.) A very rare shrub, only one specimen in Soochow. Not hardy north. Chinese name *Pai chi mei.*" (*Meyer.*)

**22981.** CARAGANA sp.

From Soochow, Kiangsu, China. "(No. 338, Apr. 26, 1908.) A low-growing Caragana, bearing bronze-yellow flowers; is cultivated in pots as an ornamental plant and is far from being common. Probably not hardy north. Chinese name *Fei chong.*" (*Meyer.*)

**22982.** LOROPETALUM CHINENSE R. Br.

From Soochow, Kiangsu, China. "(No. 339, Apr. 26, 1908.) An ornamental, evergreen shrub, sometimes growing into a small tree, bearing small, elliptical, dark green leaves, while in spring it is covered with masses of white, fringed flowers, which are delightfully fragrant; it is very rarely found cultivated, and wild specimens do not stand transplanting readily. Chinese name *Chuck mei.*" (*Meyer.*)

**22983.** AZALEA sp. **Azalea.**

From Soochow, Kiangsu, China. "(No. 340, Apr. 26, 1908.) A rare variety of Azalea having wine purple colored, semidouble flowers ('hose-in-hose,' this variation is called). Chinese name *Tsze ja tau.*" (*Meyer.*)

**22984.** CYDONIA sp. **Quince.**

From Soochow, Kiangsu, China. "(No. 341, Apr. 26, 1908.) A very small form of a quince. Chinese name *Lo hai tang.*" (*Meyer.*)

**22985.** (Undetermined.)

From Soochow, Kiangsu, China. "(No. 342, Apr. 26, 1908.) *Zelkova* or *Ulmus.* Often dwarfed by the Chinese and grown in all kinds of earthen vessels; also found wild in the mountains. Chinese name *Yu shu.*" (*Meyer.*)

**22986.** ELAEAGNUS PUNGENS Thunb. (?)

From Soochow, Kiangsu, China. "(No. 343, Apr. 26, 1908.) A tall shrub or small tree with silvery leaves, flowering in early spring with masses of tiny, pale yellow colored flowers which emit a delightful perfume and attract many honey-collecting insects. May serve for a hedge tree, as it is somewhat spiny and grows very dense. Probably not hardy north. Chinese name *Tan kwan tou.*" (*Meyer.*)

**22987.** (Undetermined.)

From Soochow, Kiangsu, China. "(No. 344, Apr. 26, 1908.) Small-leaved, evergreen shrub; grown rarely as a dwarfed tree in vessels. Chinese name *Chuck mei tsang.*" (*Meyer.*)

## 22974 to 23038—Continued.

**22988.** LIGUSTRUM sp.

From Soochow, Kiangsu, China. "(No. 345, Apr. 26, 1908.) A dwarfy privet of spreading habit." (*Meyer.*)

**22989.** PRUNUS sp. **Plum.**

From Soochow, Kiangsu, China. "(No. 346, Apr. 26, 1908.) A red-flowered plum, much used for house and shop decoration during Chinese New Year; it is generally grafted upon *Amygdalus davidiana* (Carr.) Dipp., the remarkable hardy 'original' peach. These plants are being forced by the thousands and sell for high prices. Chinese name *Hong mei.*" (*Meyer.*)

**22990.** PRUNUS sp. **Plum.**

From Soochow, Kiangsu, China. "(No. 347, Apr. 26, 1908.) A white-flowered plum; for remarks see the preceding number (S. P. I. No. 22989). Chinese name *Lu mei.*" (*Meyer.*)

**22991.** PRUNUS JAPONICA Thunb. (?)

From Soochow, Kiangsu, China. "(No. 348, Apr. 26, 1908.) A dwarfy shrub, bearing dense masses of small, double, white flowers on its slender branches. Apparently the white variety of No. 669 (S. P. I. No. 23007); as such see this number for remarks. Chinese name *Sui li.* Can be propagated by slips with a heel left to them." (*Meyer.*)

**22992.** RIBES sp. **Currant.**

From Soochow, Kiangsu, China. "(No. 349, Apr. 26, 1908.) A currant grown in pots and in tubs; rarely seen. Apparently collected in the mountains. Chinese name *Chi ching.*" (*Meyer.*)

**22993.** SPIRAEA sp.

From Soochow, Kiangsu, China. "(No. 350, Apr. 26, 1908.) A bushy, white-flowered Spiraea. Fit to be grown as an ornamental garden shrub. Chinese name *Yang teng.*" (*Meyer.*)

**22994.** DAPHNE sp. (?)

From Soochow, Kiangsu, China. "(No. 351, Apr. 26, 1908.) An ornamental, spring-flowering shrub. Chinese name *Chi hsian.*" (*Meyer.*)

**22995.** EUONYMUS ALATUS (Thunb.) Rupr.

From Soochow, Kiangsu, China. "(No. 352, Apr. 26, 1908.) A deciduous shrub, having characteristic four-winged, white-colored fruits hanging down in long peduncles, which contrast greatly with the bright scarlet hues of the leaves in autumn. Chinese name *Pau shu.*" (*Meyer.*)

**22996.** (Undetermined.)

From Soochow, Kiangsu, China. "(No. 353, Apr. 26, 1908.) Ericaceous shrub. A very rare shrub, having glossy, green, laurel-like leaves and bearing red, bent-down flowers. Not very hardy. Chinese name *Yu kwei.*" (*Meyer.*)

**22997.** LESPEDEZA sp.

From Soochow, Kiangsu, China. "(No. 354, Apr. 26, 1908.) A low, shrubby Lespedeza, with large pinnate leaves and bearing graceful racemes of flowers, either purple or white, as there are two varieties. Can be used to advantage in small gardens and in rockeries; also as pot plants. Probably not quite hardy. Chinese name *Lu chuen yuen.*" (*Meyer.*)

## 22974 to 23038—Continued.

**22998.** CARISSA BISPINOSA (L.) Desf.

From Soochow, Kiangsu, China. "(No. 355, Apr. 26, 1908.) A strange, beautiful, little plant; very spiny, with very small, dark green, glossy leaves and bright red berries; very ornamental, and well fit for table decoration during the winter holidays. Wants cool, shady situations and is not hardy in the cold-wintered regions. Chinese name *Shau hu tsi.*" (*Meyer.*)

**22999.** HEDERA sp.

From Soochow, Kiangsu, China. "(No. 356, Apr. 26, 1908.) A rare, variegated form of the Chinese yellow-berried ivy. Probably not hardy north. Chinese name *Yu chuck.*" (*Meyer.*)

**23000.** (Undetermined.)

From Soochow, Kiangsu, China. "(No. 357, Apr. 26, 1908.) A purple-flowered, terrestrial orchid, said to grow wild near Hangchow. An ornamental plant for gardens in the southeastern United States. Chinese name *Yo lan.*" (*Meyer.*)

**23001.** (Undetermined.)

From Soochow, Kiangsu, China. "(No. 358, Apr. 28, 1908.) A red-flowering lily. Chinese name *Yang pou an.*" (*Meyer.*)

**23002.** (Undetermined.)

From Soochow, Kiangsu, China. "(No. 359, Apr. 26, 1908.) A white-flowering lily. Chinese name *Ouc su.*" (*Meyer.*)

**23003.** ACORUS sp.

From Soochow, Kiangsu, China. "(No. 360, Apr. 26, 1908.) A pigmy variety of a sweet flag; grown in small pots in saucers of standing water; fit to be grown in aquariums as a small, ornamental plant. Chinese name *Chang pu.*" (*Meyer.*)

**23004.** (Undetermined.)

From Hangchow, Chehkiang, China. "(No. 361, June 27, 1907.) An epiphytic orchid, obtained from Bishop G. E. Moule, in whose garden it grows on a cryptomeria tree in the shade." (*Meyer.*)

**23005.** (Undetermined.)

From Ningpo, Chehkiang, China. "(No. 362, July 3, 1907.) An epiphytic orchid, coming from the neighboring mountains and sold on the streets as medicine." (*Meyer.*)

**23006.** BUDDLEIA ASIATICA Lour.

From Shanghai, Kiangsu, China. "(No. 363, May 15, 1908.) A very ornamental plant for winter flowering in a moderately warm greenhouse; has beautiful white drooping racemes, and the potted plants can be used very advantageously in decorative work. It needs about the same cultural treatment as the *Euphorbia pulcherrima* Willd.—that is, it needs a rest in spring and to be kept dry; after that the old plants can be cut back or young plants can be made from the young sprouts." (*Meyer.*)

**23007.** PRUNUS JAPONICA Thunb. (?)

From Hangchow, Chehkiang, China. "(No. 669, June 28, 1907.) A low shrub with elliptical, lanceolate leaves, covered in spring with masses of small, double, rosy flowers; much used in forcing during the Chinese holi-

**22974 to 23038**—Continued.

days (January and February); may also be used for planting out in beds or rockeries. Chinese name *Bai loa.*" (*Meyer.*)

**23008.** VIBURNUM TOMENTOSUM Thunb.

From Hangchow, Chehkiang, China. "(No. 670, June 28, 1907.) A Chinese snowball bearing masses of short, white umbels in early summer; somewhat stiff in appearance, but still very ornamental; often grown in pots when dwarfed, but mostly seen as a garden shrub growing as high as 12 feet. Chinese name *Geh dyo tsu.*" (*Meyer.*)

**23009.** RUBUS ROSAEFOLIUS Smith.

From Hangchow, Chehkiang, China. "(No. 671, June 28, 1907.) Flowering in early summer with great masses of large, white, double flowers. Often grown in pots or tubs; also seen in gardens, where it has been planted for covering up an old wall or an unsightly place. Spreads rapidly through the ground by means of its suckers. Chinese name *Yang ching yen teung.*" (*Meyer.*)

**23010.** LARIX sp.

From Hangchow, Chehkiang, China. "(No. 672, June 28, 1907.) A pretty larch much grown as a pot plant when dwarfed; if planted out, it grows into a medium-sized tree. Seems to be able to grow on sterile mountain sides and may be fit for forestation purposes in the southeastern United States. Chinese name *Ching sung.*" (*Meyer.*)

**23011.** LYCHNIS FULGENS Fisch. (?)

From Hangchow, Chehkiang, China. "(No. 673, June 28, 1907.) An herbaceous perennial of a dwarfy habit, bearing brilliant scarlet flowers. Grown as an ornamental pot plant by the Chinese. Chinese name *San dia lau yang.*" (*Meyer.*)

**23012.** BUXUS SEMPERVIRENS L.

From Hangchow, Chehkiang, China. "(No. 674, June 28, 1907.) Var. *lanceolata.* Mostly grown as a dwarf tree in vessels; also seen in gardens as a shrub or small tree, clipped or twisted in many grotesque shapes. Reaches a great age, several centuries. The wood is used in the manufacture of fine combs and knife handles. Chinese name *Kua tse huang yang.*" (*Meyer.*)

**23013.** (Undetermined.)

From Hangchow, Chehkiang, China. "(No. 675, June 28, 1907.) An evergreen shrub, probably growing into a small tree; bears greenish white, bell-shaped flowers; grown in pots when dwarfed; seen rarely as a garden shrub. Chinese name *Mou li.*" (*Meyer.*)

**23014.** ASPARAGUS sp.

From Hangchow, Chehkiang, China. "(No. 676, June 28, 1907.) A very small, herbaceous asparagus, attaining a height of only 3 to 5 inches; is used as a lining along paths in small gardens; requires a shady situation." (*Meyer.*)

**23015.** ASPARAGUS sp.

From Soochow, Kiangsu, China. "(No. 677, Apr. 26, 1908.) A feathery, graceful, herbaceous asparagus; grown as an ornamental pot plant in shady situations. Chinese name *Wen chu.*" (*Meyer.*)

## 22974 to 23038—Continued.

**23016.** ASPARAGUS sp.

From Shanghai, Kiangsu, China. "(No. 678, May 12, 1908.) A plumy, herbaceous asparagus, used as an ornamental pot plant and as cut green in bouquets; requires a shady situation." (*Meyer.*)

**23017.** PINUS BUNGEANA Zucc. **Pine.**

From Taiyuanfu, Shansi, China. "(No. 679, Mar. 13, 1908.) The beautiful and striking white-barked pine tree, growing to be very old, perhaps up to twenty centuries. These trees are said to come from Honan. Chinese name *Pai kua sung shu.*" (*Meyer.*)

**23018.** PINUS BUNGEANA Zucc. **Pine.**

From Fengtai, near Peking, Chihli, China. "(No. 680, Mar. 31, 1908.) These trees are said to come from central Shansi. For further remarks see preceding number (S. P. I. No. 23017)." (*Meyer.*)

**23019.** PINUS BUNGEANA Zucc. **Pine.**

From Soochow, Kiangsu, China. "(No. 681, Apr. 26, 1908.) These trees are called here *Pai pu sung.* For further remarks see Nos. 679 and 680 (S. P. I. Nos. 23017 and 23018)." (*Meyer.*)

**23020.** ABIES sp. **Fir.**

From Fengtai, near Peking, Chihli, China. "(No. 682, June 1, 1908.) A rare, bluish fir, valued highly by the Chinese. Probably very hardy in the drier regions of the United States. Chinese name *Lou han sung shu.*" (*Meyer.*)

**23021.** ABIES sp. **Fir.**

From Tientsin, Chihli, China. "(No. 683, Apr. 3, 1908.) The same as the preceding number (S. P. I. No. 23020); as such see remarks applying to it." (*Meyer.*)

**23022.** JUNIPERUS sp. **Juniper.**

From Fengtai, near Peking, Chihli, China. "(No. 684, Mar. 31, 1908.) A very rare, ornamental variety of juniper of a deep bluish color; not hardy north, and in winter should be stored in a cool greenhouse. These specimens are grafted on to *Thuya orientalis.* Chinese name *Tsui bai.*" (*Meyer.*)

**23023.** JUNIPERUS sp. **Juniper.**

From Tientsin, Chihli, China. "(No. 685, Apr. 3, 1908.) A specimen of remarkable beauty, also grafted, apparently. Said to come from southwestern Shantung. For further remarks see preceding number (S. P. I. No. 23022)." (*Meyer.*)

**23024.** CUPRESSUS FUNEBRIS Endl. (?)

From Fengtai, near Peking, Chihli, China. "(No. 686, Mar. 31, 1908.) A rare, drooping Thuya, grafted upon *Thuya orientalis.* Beloved by the Chinese on account of its queer, characteristic appearance. Not hardy; in winter should be put in a cool greenhouse. Chinese name *Hsien bay.*" (*Meyer.*)

**23025.** JUNIPERUS CHINENSIS PENDULA Franchet.

From Fengtai, near Peking, Chihli, China. "(No. 687, Mar. 31, 1908.) A rare and graceful weeping juniper, grafted upon *Thuya orientalis.* Not hardy, in winter should be kept in a cool greenhouse. Chinese name *Ying lou sung.*" (*Meyer.*)

## 22974 to 23038—Continued.

**23026.** EPHEDRA sp.

From Taiyuenfu, Shansi, China. "(No. 688, Mar. 13, 1908.) The rare and strange horsetail plant. A hardy, evergreen garden shrub, for arid regions. These plants are said to come from Honan. Chinese name *Ma whou sung.*" (*Meyer.*)

**23027.** EUONYMUS sp.

From Taiyuenfu, Shansi, China. "(No. 689, Mar. 31, 1908.) A semi-evergreen Euonymus, loaded in winter with white capsules, out of which peep scarlet berries. Grown drawfed in pots and fit for table decoration during the winter holidays. This plant may not be quite hardy north, as the Chinese keep it in a frostproof cellar in winter. Chinese name *Shi yuen mae.*" (*Meyer.*)

**23028.** CITRUS LIMONUM Risso (?) **Lemon.**

From Fengtai, near Peking, Chihli, China. "(No. 690, Mar. 31, 1908.) Ornamental lemon. This lemon is grown as a pot plant when dwarfed, and is very much appreciated by the Chinese higher classes as a decorative plant in winter. At that season a small plant often has a dozen large lemons hanging on its branches and sometimes sells for $10. Protect from frost. Can be slipped in sandy soil in flat pots. Chinese name *Hsien yuang.*" (*Meyer.*)

**23029.** LONICERA sp.

From Tientsin, Chihli, China. "(No. 691, Apr. 3, 1908.) A dwarf honeysuckle grown in pots as an ornamental plant. The flowers are remarkably fragrant in the evening. Seems to be semitender, as the Chinese keep them in pits in winter. Chinese name *Ching yin hua.*" (*Meyer.*)

**23030.** SYRINGA OBLATA Lindl. (?) **Lilac.**

From Fengtai, near Peking, Chihli, China. "(No. 692, Mar. 31, 1908.) A fragrant, ornamental, large, purple-flowered lilac, growing into a big bush or a small tree; very drought resistant. Chinese name *Tse ting hsien.* This variety and the following one (S. P. I. No. 23031) are often grafted in central China upon high-stemmed *Ligustrum lucidum*, making then a fine effect." (*Meyer.*)

**23031.** SYRINGA OBLATA Lindl. (?) **Lilac.**

From Fengtai, near Peking, Chihli, China. "(No. 693, Mar. 31, 1908.) A medium-sized, white-flowering lilac. See preceding number (S. P. I. No. 23030) for remarks. Chinese name *Pai ting hsien.*" (*Meyer.*)

**23032.** SYRINGA sp. **Lilac.**

From Fengtai, near Peking, Chihli, China. "(No. 694, Mar. 31, 1908.) A small-leaved lilac, bearing many panicles of purple flowers, grafted upon a small-leaved privet. Used much in forcing; quite rare and expensive; not hardy. Chinese name *Shau ting hsien.*" (*Meyer.*)

**23033.** SYRINGA sp. **Lilac.**

From Tientsin, Chihli, China. "(No. 695, Apr. 3, 1908.) A small-leaved lilac, the same species as the preceding number (S. P. I. No. 23032), but apparently of slightly different colors. There are two white-flowering ones among them; otherwise the same remarks apply to it as to No. 694 (S. P. I. No. 23032). Keep them protected from heavy frosts.

**22974 to 23038**—Continued.

Has a future for the western people as a very graceful, spring-flowering shrub of dwarfy habits." (*Meyer.*)

**23034.** ROSA XANTHINA Lindl. **Rose.**

From Fengtai, near Peking, Chihli, China. "(No. 696, Mar. 31, 1908.) A yellow rose, remarkably hardy, resisting drought and extremes of dry heat and dry cold to an unusual degree. For further remarks see Nos. 67, 68, and 254 (S. P. I. Nos. 17469 and 22452)." (*Meyer.*)

**23035.** ROSA sp. **Rose.**

From Tientsin, Chihli, China. "(No. 697, Apr. 3, 1908.) A red rose said to be very floriferous, but the flowers are small. Hardy in the uncongenial climate of Tientsin, where it passes the winter unprotected in the open. Chinese name *Tcu hong shoo mei kwei.*" (*Meyer.*)

**23036.** ROSA sp. **Rose.**

From Soochow, Kiangsu, China. "(No. 698, Apr. 26, 1908.) Small-leaved red rose; rare. Chinese name *Hong si ya chi.*" (*Meyer.*)

**23037.** ROSA sp. **Rose.**

From Soochow, Kiangsu, China. "(No. 699, Apr. 26, 1908.) Small-flowered white rose. Apparently a rambler. Chinese name *Pai si ya chi.*" (*Meyer.*)

**23038.** ROSA sp. **Rose.**

From Soochow, Kiangsu, China. "(No. 700, Apr. 26, 1908.) Small-flowered yellow rose. Apparently a rambler. Chinese name *Hwang si ya chi.*" (*Meyer.*)

**23039.** ENTEROLOBIUM CYCLOCARPUM (Jacq.) Griseb.

From Gorgona, Canal Zone, Panama. Presented by Mr. V. Allan Rutherford. Received June 3, 1908.

"This tree grows 40 feet high, covering a radius of 20 to 30 feet, and forms a beautiful shade. It bears a pod about 5 to 6 inches and is good food for cattle. There are other peculiar features of the tree that make it valuable for shade; when 4 or 5 years old it is from 25 to 30 feet high. I think this tree would make a fine shade tree for the South and Southwestern States, where there is so much prairie land." (*Rutherford.*) (See No. 11592 for further description.)

**23040.** CACARA EROSA (L.) Kuntze. **Hicama.**

From San Juan, P. R. Presented by Mr. Wm. Allan, through Mr. C. V. Piper. Received June 23, 1908.

See No. 22971 for description.

**23041 to 23199.** SOLANUM TUBEROSUM L. **Potato.**

From Chile, South America. Procured by Mr. José D. Husbands, Limávida via Molina, Chile, at the request of Prof. L. C. Corbett. Received June 24, 1908.

The following tubers, descriptions of varieties by Mr. W. V. Shear:

**23041 to 23086.**

From the archipelago of Chiloé. "The archipelago of Chiloé is situated in the southern part of Chile and is the indigenous home of potato tubers (*Solanum tuberosum*). It is from here that the Spanish obtained

## 23041 to 23199—Continued.

### 23041 to 23086—Continued.

the potatoes which they took to Spain early in the sixteenth century, and thereby gave to the civilized world the 'Irish' potatoes of Chilean nativity. The flavors, size, forms, abundant production, and general excellence of 'Chiloé potatoes' are well known and justly famous; unequaled and unapproached in any part of the world, they stand alone as the highest classed potatoes known. It is surprising that all these beauteous tubers still remain solely in their original birthplace. The Chilenos have been and are still indifferent to the class of potatoes they plant and eat. The remoteness of Chiloé and the want of kindred conditions to produce like results elsewhere may play a part in the fact that Chiloé potatoes are to be found only in Chiloé. Island intercommunication is rare and extremely hazardous. Swift ocean currents run riot among them and there are also unknown rocks, exposing the voyager to perils of no ordinary character. Commerce is infrequent and deficient, as well as extremely limited, except in parts of the island of Chiloé itself. Rare and dangerous navigation is costly. Potatoes are the sole food of the inhabitants. They make bread of pounded raw potatoes mixed with a little grease. There are over 250 known wild varieties, so long cultivated as to have become classes of potatoes in the island of Chiloé alone, without considering the archipelago of Guaitecas and Chonos and the hundreds of islands which form the grand archipelago of Chiloé. The following are different wild varieties of *Solanum tuberosum*, which have become fixed classes by long cultivation." (*Husbands.*)

**23041.** Small, oblong, violet-colored tubers.

**23042.** Medium-sized, yellowish, round to oblong, flattened tubers.

**23043.** Medium-sized, long, cylindrical, white tubers.

**23044.** Round to oblong violet tubers.

**23045.** Small, roundish, uneven, deep-eyed, purple tubers.

**23046.** Small, oblong, uneven, deep-eyed, violet tubers.

**23047.** Medium-sized, round, deep-eyed, violet tubers.

**23048.** Medium-sized, oblong, compressed, deep-eyed, mottled violet and cream tubers.

**23049.** Large, roundish, smooth, white tubers, flattened on one side near stem end.

**23050.** Medium-sized, oblong, white tubers.

**23051.** Small, roundish, uneven, mottled violet tubers.

**23052.** Medium-sized, uneven, compressed, deep-dyed, pinkish mottled, russet tubers.

**23053.** Medium-sized, oblong, shallow-eyed, pink tubers.

**23054.** Medium-sized, roundish flattened, pink tubers.

**23055.** Long, cylindrical, white tubers.

**23056.** Medium-sized, round to oblong, compressed, violet tubers.

**23057.** Small to medium-sized, roundish oblong, somewhat flattened, yellow tubers.

**23058.** Medium-sized, round, flattened, medium deep eyed, mottled purple and yellow tubers.

**23059.** Medium-sized, round to oblong, uneven, white tubers.

## 23041 to 23199—Continued.

23041 to 23086—Continued.

23060. Medium-sized, oblong, white tubers.

23061. Medium-sized, round to oblong, light violet mottled tubers.

23062. Round to oblong violet-mottled tubers.

23063. Small, round to oblong, white tubers.

23064. Small, round, deep-eyed, yellow tubers.

23065. Medium-sized, round, yellow tubers.

23066. Medium-sized, cylindrical, pink tubers.

23067. Medium-sized, round, uneven, deep-eyed, yellow tubers.

23068. Medium-sized, roundish flattened, violet tubers.

23069. Large, round, flattened, shallow-eyed, yellow tubers.

23070. Medium-sized, round to oblong, violet-mottled tubers.

23071. Small, oblong, white tubers.

23072. Small, round, white tubers.

23073. Large, oblong, somewhat flattened, yellow tubers.

23074. Medium-sized, oblong, white, violet-tinged tubers.

23075. Small, round, yellow tubers.

23076. Large, oblong, flattened, mottled violet and white, shallow-eyed tubers.

23077. Medium-sized, round, uneven, deep-eyed, mottled violet and yellow tubers.

23078. Medium-sized, round, uneven, deep-eyed, pink tubers

23079. Medium-sized, uneven, white tubers.

23080. Medium-sized, round, deep-eyed, pinkish yellow tubers.

23081. Large, smooth, oblong, somewhat flattened, yellow tubers. Handsome.

23082. Medium-sized, round to oblong, somewhat flattened, yellowish tubers.

23083. Small, round, deep-eyed, yellow tubers.

23084. Small, oblong, somewhat flattened, yellow tubers.

23085. Medium-sized, round to oblong, smooth, yellow tubers.

23086. Round to oblong, deep-eyed, pink tubers.

23087 to 23103.

From archipelago of Chiloé. "Wild sorts annually resow their seeds, producing, by nature's care alone, limitless thousands of undomesticated tubers of every color and form, all of which are delicious eating. Among the islands there are new and distinct strains, whose tubers and plants have no similarity to known varieties. I gathered one. It had a snow-white skin with small, bright crimson eyes which were shaded with dark crimson. The flesh was sweet as sugar. The plant was upright, thick, and waxlike; the leaves were like a three-leafed clover; no one would have taken it for a potato plant. This, as well as many other kinds of wild potatoes, matures in the spring month of October, equivalent to May in the United States. All endure hard frosts, but the ground is never frozen. They remain in the wet about five months during the continuous rains of a Chilean winter, and seem to like it. In this collection there are many potatoes having a like form and appearance; they

## 23041 to 23199—Continued.

### 23087 to 23103—Continued.

are not duplicates, but are taken from different islands, or at a great distance upon the mainland, each under separate and different conditions of soil, plant food, moisture, etc. Tubers of medium to small size are included. Wild potatoes are especially fine baked. Seedlings are inclined to dissolve when boiled, more especially the black-skinned kinds, until after they have been cultivated a year or two.

"This collection is totally unknown to any botanist in Chile or to anyone except in parts of the several localities where found. Even these people seemed surprised to learn they had so many kinds of potatoes growing unknown about them. Many thousands have been dug to make up this assortment. All wild seedlings show some difference, but generally not sufficient to be classed as new strains. It would be wise, however, to plant all that grow here but for the expense and difficulties of transportation inland. Travel is confined to horseback. It is laborious and perplexing to properly arrange and transport large quantities of such tubers in a condition fit to send to the United States. They resent the slightest bruise. I do not give the names of potatoes sent, as they have no significance, being local names from the Chilote Indian dialect. In other districts having other tribes the same tubers are called by other names having no general meaning; local appellations are omitted. The potatoes sent are but selections from many kinds in their native, indigenous, uncultivated state." (*Husbands.*)

**23087.** Small, oblong, yellow, smooth tubers.

**23088.** Small, oblong, deep-eyed, mottled violet and yellow tubers.

**23089.** Small, round, violet-colored tubers.

**23090.** Small, round, violet tubers.

**23091.** Long, slender, cylindrical, violet tubers.

**23092.** Small, round, uneven, purple tubers.

**23093.** Medium-sized, oblong, pink, rather deep eyed tubers. Large enough for food.

**23094.** Long, curved, cylindrical, numerous and deep eyed, violet and white tubers.

**23095.** Small, round, yellow tubers.

**23096.** Small, round, flattened, pink tubers.

**23097.** Small, oblong-conical, pink tubers.

**23098.** Small, round to oblong, mottled pink and yellow tubers.

**23099.** Small, round, pinkish yellow tubers.

**23100.** Small, roundish flattened, violet tubers.

**23101.** Small, round, yellow tubers.

**23102.** Small, oblong, pinkish yellow tubers.

**23103.** Long, cylindrical, somewhat curved, deep purple tubers.

### 23104 to 23114.

From the mainland along the coast of the province of Valdivia. "In the mountainous southern province of Valdivia grow potatoes of other sorts, but still of rare excellence as to flavor, form, size, and yield. These are selected as samples representing the many kinds to be had there. Those along the coast are said to be of a richer flavor or sweeter taste

## 23041 to 23199—Continued.

### 23104 to 23114—Continued.

than those of the interior. To me, they are not unlike the Chilotes. However, I have tested so many kinds lately that they all taste alike for the moment. Some of these are extra early; none very late. In this province their names are from the Mapocho Indian dialect. The following are wild varieties which have become permanent strains by long cultivation." (*Husbands.*)

23104. Large, round, deep-eyed, yellowish white tubers.

23105. Small, round, somewhat uneven, white tubers.

23106. Medium-sized, round, somewhat uneven, yellow tubers.

23107. Very long, rather uneven, cylindrical, pinkish yellow tubers.

23108. Small, oblong, white tubers.

23109. Medium-sized, dumb-bell shaped, violet-colored tubers.

23110. Medium-sized, round, uneven, yellow tubers.

23111. Medium-sized, round, uneven, white and violet tubers.

23112. Large, oblong, violet-colored tubers.

23113. Medium-sized, oblong, white tubers.

23114. Long, curved, cylindrical, numerous-eyed tubers.

### 23115 to 23120.

From the interior of the province of Valdivia. "Potatoes grown in the interior of the province of Valdivia have no especial peculiarities to describe except that they are of extra good form and very productive. While said to be of less flavor and merit than those of the coast, I believe that they are equal in quality, but have different flavors. In the entire south of Chile, including Chiloé, potatoes having red, yellow, or white skins with yellow flesh are the sweetest; boiled, baked, or fried, they are delicious. The names are Mapocho. The following are wild varieties which have become established classes by long cultivation." (*Husbands.*)

23115. Large, smooth, oblong, white tubers.

23116. Medium-sized, oblong, white tubers.

23117. Medium-sized, pink-colored tubers.

23118. Compound, medium-sized, light violet colored tubers.

23119. Large and small, oblong, flattened, smooth, white tubers.

23120. Medium-sized, round, somewhat flattened, smooth, yellow tubers.

### 23121 to 23134.

From the province of Valdivia, both coastwise and from the interior. "In wild varieties of potatoes the black predominate, nearly all of which mature in the springtime. There are many kinds formed and new ones constantly being created by self-sown seeds. Like all wild Chile potatoes they are extra-fine eating. If planted they increase in size for 4 or 5 consecutive years, at which time they reach perfection of size and fixed flavors, and may be considered as standard classes of potatoes. The following are still different wild, uncultivated varieties." (*Husbands.*)

23121. Very small, round, purple tubers.

23122. Small, round, white tubers.

## 23041 to 23199—Continued.

### 23121 to 23134—Continued.

23123. Small, uneven, violet-colored tubers.

23124. Very small, round, pinkish yellow tubers.

23125. Very small, round, violet-colored tubers.

23126. Small, round, uneven, pink tubers.

23127. Small, round, yellow tubers.

23128. Small, round, uneven, mottled violet and yellow tubers.

23129. Very small, round tubers; some white, some violet, and some purple with yellow eyes.

23130. Small, round, mottled purple and yellow tubers.

23131. Small, round, purple tubers.

23132. Small, long, cylindrical, purple tubers.

23133. Small, round, pinkish yellow tubers.

23134. Small, compound, yellow tubers.

### 23135 to 23160.

From the far interior in the vicinity of the volcano Llima. "The following are two-year-old seedlings; are a rare lot and all of superb quality. Some are extra-long keepers and do not sprout until planting time, when they are still hard and sound as when harvested.

"These are all distinct varieties. Some have very little plant growth and are great yielders. They will continue to improve by planting. Many are regular in size. In this province potatoes bear names from the Pehuencha Indian dialect." (*Husbands.*)

23135. Medium-sized, compound, violet-yellow tubers.

23136. Small, round, violet tubers.

23137. Small, round, white tubers.

23138. Medium-sized, round to oblong, yellow, deep-eyed tubers.

23139. Small, oblong, violet tubers.

23140. Medium-sized, pinkish yellow, deep-eyed tubers.

23141. Medium-sized, oblong, smooth, violet-colored tubers.

23142. Small, round to oblong, smooth, yellow tubers.

23143. Very small, round, violet-colored tubers.

23144. Very small, round, smooth, violet-colored tubers.

23145. Medium-sized, uneven, deep-eyed, yellow tubers.

23146. Medium-sized, uneven, yellowish tubers.

23147. Small, round, smooth, yellowish tubers.

23148. Small, round, smooth, some yellowish and some violet-colored tubers.

23149. Medium-sized, oblong, yellowish tubers.

23150. Medium-sized, smooth, round, violet-colored tubers.

23151. Medium-sized, round, smooth, medium deep eyed, violet-yellow tubers.

23152. Medium-sized, oblong, smooth, many medium deep eyed, yellowish tubers. "A long keeper."

23153. Small, round, mottled violet and yellow tubers.

## 23041 to 23199—Continued.

### 23135 to 23160—Continued.

**23154.** Medium-sized, oblong, flattened, violet tubers.

**23155.** Medium-sized, small, oblong, smooth, shallow-eyed, netted-skinned, violet-tinged tubers.

**23156.** Small, round, violet-tinged tubers.

**23157.** Small, oblong, yellowish tubers.

**23158.** Medium-sized, oblong, flattened, smooth, violet-colored tubers.

**23159.** Medium-sized, round, somewhat uneven, yellowish tubers.

**23160.** Medium-sized, oblong, numerous and deep-eyed, yellowish tubers.

**23161.**

From the far interior in the vicinity of the volcano Llima. "A potato from the United States which by being cultivated in Chile has completely changed its shape and flavor. These are sent as samples of what changes may be made by transplanting from a distant part to another having distinct and different conditions in climate, seasons, soil foods, etc. For example, from seaward to remote inland; plain to mountain; and vice versa." (*Husbands.*)

Large, smooth, oblong, flattened, white tubers.

**23162.**

"A potato from Germany. Originally a round, black-skinned variety. Grown but one year in Chile; still, changes have already commenced." (*Husbands.*)

Medium-sized, oblong, pale violet colored, smooth tubers.

**23163.**

"A potato from England, *Nignum bonum*. Long cultivated in Chile, it has completely changed by deterioration instead of the usual improvement. From among those taken from the hills, as planted and grown, are found ill-shaped, worthless sorts, suggesting that it has grown back to the worst wild varieties." (*Husbands.*)

Small, white, round to oblong tubers.

**23164.**

"A southern Chilean potato of a very fine kind, but its irregular shape made it almost useless. Being from the mountainous interior, I removed it to a point far distant upon the seacoast and am making a good-shaped tuber of it." (*Husbands.*)

Medium-sized, oblong, pointed, smooth, shallow-eyed, violet-pink tuber.

**23165.**

"A Chilean potato of unknown origin." (*Husbands.*)

Very large, oblong, violet-colored tubers.

**23166.**

"*Papas Blancos*, white potato. The class most generally cultivated in central Chile." (*Husbands.*)

Medium-sized, oblong, white, numerous, and rather deep-eyed tubers.

**23167 to 23199.**

"Seeds are very scarce at the time potatoes should be gathered. All the following are worth sowing and the seedlings planted and replanted

## 23041 to 23199—Continued.

23167 to 23199—Continued.

again before throwing them aside. Many a great man was once a worthless baby." (*Husbands.*)

23167 to 23169.
Seed of cultivated kinds.

23170 and 23171.
Seed from cultivated seedlings.

23172 to 23194.
Seed from wild varieties.

23195 to 23198.
Seed from Chiloé, wild varieties.

23199.
Seed of a wild variety.

**23201.** MELINIS MINUTIFLORA Beauv.

From São Paulo, Brazil. Presented by Dr. H. M. Lane, president, Mackenzie College, through Mr. C. V. Piper. Received June 22, 1908.

"This is known as *Capim catingueiro*, or *melado*, or *gordura*, one of the best forage grasses of this section. It grows well on poor ground and will stand long absence of rain. It also makes good hay." (*Lane.*)

**23202.** LITCHI CHINENSIS Sonner. **Leitchee.**

From Honolulu, Hawaii. Procured by Mr. J. E. Higgins, horticulturist, Hawaii Experiment Station. Received June 25, 1908.

"Seeds of the large-seeded variety." (*Higgins.*) (For description see Nos. 10670 to 10673, 14888, and 16237 to 16243.)

**23203.** MEDICAGO SATIVA L. **Alfalfa.**

From Turkestan. Purchased from Mr. H. W. Duerrschmidt, Tashkend, Turkestan. Received June 24, 1908.

*Turkestan.* "Werny or Tschilik alfalfa, from the most northern alfalfa-producing part of Turkestan." (*Duerrschmidt.*)

**23204.** TRIGONELLA FOENUM-GRAECUM L. **Fenugreek.**

From Tunis, Tunis. Presented by Mr. F. Foëx, National School of Agriculture, Mexico City, Mexico. Received June 15, 1908.

See No. 7029 for description.

**23205.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Shanghai, Kiangsu, China. Presented by Dr. S. P. Barchet, interpreter, American consulate. Received June 30, 1908.

"Similar in appearance to *Ebony*, No. 17254." (*Nielsen.*)

"An important bean for dry rice land. Chinese name *Pu chi.*" (*Barchet.*)

**23206.** CUCUMIS MELO L.

From Afghanistan. Presented by Mr. L. A. Ault, president, The Ault & Wiborg Company, Cincinnati, Ohio. Received June 29, 1908.

"I ran across this melon in Peshawar, and taken altogether it is the most delicious fruit in the way of a melon that I have ever tasted." (*Ault.*)

## 23207 to 23232.

From China. Received through Mr. Frank N. Meyer, agricultural explorer, and brought by him to the Plant Introduction Garden, Chico, Cal., June, 1908. Forwarded to Washington, D. C., and received July 6, 1908.

The following seeds:

**23207.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Soochow, Kiangsu, China. "(No. 960a, Apr. 27, 1907.) A large, greenish soy bean, grown around Soochow on the rather low-lying lands. Used when slightly sprouted as a vegetable. Chinese name *Tsin tou.*" (*Meyer.*)

**23208.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Tangsi, Chehkiang, China. " (No. 961a, Apr. 20, 1908.) A large, yellow soy bean, often purplish colored on one side. Considered locally a very good variety. Chinese name *Sian chu tou.* Grows on the ridges around inundated rice fields." (*Meyer.*)

**23209.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Tangsi, Chehkiang, China. " (No. 962a, Apr. 20, 1908.) The ordinary variety of yellow soy bean as grown around Tangsi on the ridges and strips of land around and between inundated rice fields. Chinese name *Huang tou.*" (*Meyer.*)

**23210.** PHASEOLUS ANGULARIS (Willd.) W. F. Wight. (DOLICHOS ANGULARIS Willd.)

From Tangsi, Chehkiang, China. "(No. 963a, Apr. 20, 1908.) Different varieties of small beans, grown by the Chinese on the higher lands in the neighborhood of Tangsi. Used as a vegetable when sprouted; also boiled in soups, and when pounded up with sugar it is used as a sweetmeat in cakes and pastry. Chinese name *Chi tou.*" (*Meyer.*)

**23211.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Tangsi, Chehkiang, China. "(No. 964a, Apr. 20, 1908.) A very dark brown colored soy bean, grown near Tangsi; said to be very productive. Chinese name *Tsze pi tou.*" (*Meyer.*)

**23212.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Hangchow, Chehkiang, China. "(No. 965a, Apr. 24, 1908.) An early-ripening, yellow soy bean, called the sixth month's bean, meaning ripening in the Chinese sixth month (our July). Chinese name *Lu ya pai mou tou.*" (*Meyer.*)

**23213.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Hangchow, Chehkiang, China. "(No. 966a, Apr. 24, 1908.) A yellow soy bean called the seventh month's bean, meaning ripening in the Chinese seventh month (our August). Called in Chinese *Chi ya pai mou tou.*" (*Meyer.*)

**23214.** VIGNA SESQUIPEDALIS (L.) W. F. Wight.

From Tangsi, Chehkiang, China. "(No. 967a, Apr. 20, 1908.) Chinese string beans, used as a green vegetable like the western kinds. Chinese name *Chang kiang tou.*" (*Meyer.*)

**23215.** DOLICHOS LABLAB L.

From Tangsi, Chehkiang, China. "(No. 968a, Apr. 20, 1908.) A white bean which is mostly grown for its green pods, which are sliced or broken and when boiled furnish an agreeable vegetable. The dried beans are

## 23207 to 23232—Continued.

also sparingly used in soups, but only by the better classes, as they are rather expensive. Chinese name *Pai pien tou.*" (*Meyer.*)

**23216.** CANAVALI ENSIFORME (L.) DC.

From Tangsi, Chehkiang, China. "(No. 969a, Apr. 20, 1908.) A very rare edible bean, used mainly as a stomach-strengthening food, and for this reason only to be had in medicine shops. Said to be an erect grower (?). Chinese name *Tau tou.*" (*Meyer.*)

**23217.** STIZOLOBIUM sp. (?)

From Mokanshan, Chehkiang, China. "(No. 970a, Apr. 22, 1908.) A wild climbing bean found in a thicket. The pods are covered with bristling hairs, which break off easily in one's skin, but do not cause any harm." (*Meyer.*)

**23218.** SAPIUM SEBIFERUM (L.) Roxb. **Tallow tree.**

From Tangsi, Chehkiang, China. "(No. 971a, Apr. 23, 1908.) The tallow tree, the seeds of which yield a valuable fatty substance. Grown extensively along the canals in the Chehkiang Province. The best varieties are top-grafted upon seedling stock." (*Meyer.*)

**23219.** FIRMIANA SIMPLEX (L.) W. F. Wight. (HIBISCUS SIMPLEX L.) (STERCULIA PLATANIFOLIA L. f.)

From Soochow, Kiangsu, China. "(No. 972a, Apr. 27, 1908.) Seeds of a tree called in Chinese *Wu tung tsze;* they are sold in one or two shops as a delicatesse, but are not very tasty. They may turn out to be the ordinary *Firmiana simplex* (L.) (*Hibiscus simplex* L.), which is a great favorite with the Chinese as a shade tree in temple gardens and in courtyards." (*Meyer.*)

**23220.** PINUS KORAIENSIS S. & Z.

From Soochow, Kiangsu, China. "(No. 973a, Apr. 27, 1908.) Sold as a delicatesse by a few shops, and as such they are not bad. Said to come from Shantung, but I suspect them to have been collected in eastern Siberia from *Pinus mandshurica* or an allied form. Chinese name *Sung tsze.*" (*Meyer.*)

**23221.** CITRULLUS VULGARIS Schrad. **Watermelon.**

From Hangchow, Chehkiang, China. "(No. 974a, Apr. 24, 1908.) Said to be a very fine variety of yellow-fleshed watermelon. Grown around Hangchow on rather low lands. Chinese name *Huang si kua.*" (*Meyer.*)

**23222.** CITRULLUS VULGARIS Schrad. **Watermelon.**

From Tangsi, Chehkiang, China. "(No. 975a, Apr. 20, 1908.) A watermelon with yellow flesh, said to be good; growing on low fields around Tangsi. Chinese name *Huang lien kua.*" (*Meyer.*)

**23223.** CITRULLUS VULGARIS Schrad. **Watermelon.**

From Hangchow, Chehkiang, China. "(No. 976a, Apr. 24, 1908.) Said to be a very fine white-fleshed watermelon. Grown around Hangchow on rather low lands. Chinese name *Pai si kua.*" (*Meyer.*)

**23224.** CITRULLUS VULGARIS Schrad. **Watermelon.**

From Tangsi, Chehkiang, China. "(No. 977a, Apr. 20, 1908.) A white-fleshed watermelon, grown on low fields around Tangsi. Chinese name *San pai tsa kua.*" (*Meyer.*)

## 23207 to 23232—Continued.

**23225.** CITRULLUS VULGARIS Schrad. **Watermelon.**

From Tangsi, Chehkiang, China. "(No. 978a, Apr. 20, 1908.) A red-meated watermelon, grown on lowlands around Tangsi. Chinese name *Wu pi hong lien kua.*

"The region around Tangsi is famous for its good watermelons. Test Nos. 975a, 977a, and 978a (S. P. I. Nos. 23222, 23224, and 23225) on lowlands in the South." (*Meyer.*)

**23226.** ASTRAGALUS SINICUS L.

From Hangchow, Chehkiang, China. "(No. 979a, Apr. 24, 1908.) A red-flowered leguminous plant; grows wild on lowlands; is also used as a fertilization crop on low-lying fields, being plowed under as a fertilizer for rice. The young leaves are much eaten as a vegetable. Chinese name *Huang tsai.*" (*Meyer.*)

**23227.** ASTRAGALUS SINICUS L.

From Hangchow, Chehkiang, China. "(No. 980a, Apr. 24, 1908.) A leguminous plant, said to bear red flowers, probably a form of No. 979a (S. P. I. No. 23226); as such give it the same treatment. Chinese name *Hong tsai,* which is probably fictitious." (*Meyer.*)

**23228.** SESAMUM ORIENTALE L. **Sesame.**

From Tientsin, Chihli, China. "(No. 981a, Apr. 4, 1908.) White sesame seed for a trial in the semiarid Southwestern States. These seeds contain a fine, sweet oil, excellent for culinary purposes. The seeds themselves can be used in the making of candies, taffies, and as a sprinkling on cakes. Chinese name *Pai tse ma.*" (*Meyer.*)

**23229.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Tientsin, Chihli, China. "(No. 982a, Apr. 4, 1908.) A dark brown colored soy bean; rare. Said to grow near Tientsin. Used for human food; boiled in soups or as a vegetable when slightly sprouted. Chinese name *Tse doh.*" (*Meyer.*)

**23230.** ANDROPOGON SORGHUM (L.) Brot. **Kowliang.**

*Brown.*

From Chusan Islands, China. "(No. 983a, April, 1908.) A tall-growing variety of sorghum, coming from the Chusan Islands, called *Chang tsun.* Obtained from Dr. S. P. Barchet at Shanghai, China." (*Meyer.*)

**23231.** ANDROPOGON SORGHUM (L.) Brot. **Kowliang.**

*Brown.*

From Chusan Islands, China. "(No. 984a, April, 1908.) A dwarfy form of a sorghum, coming from the Chusan Islands, called *Tuan tsun.* Obtained from Dr. S. P. Barchet at Shanghai, China." (*Meyer.*)

**23232.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Shanghai, Kiangsu, China. "(No. 985a, May 11, 1908.) The *Barchet* soy bean, growing on wet rice lands. Chinese name *Ma liao tou.* Obtained through Dr. S. P. Barchet, of Shanghai, who procured these soy beans from Chinhuafu, in the Chehkiang Province, central China." (*Meyer.*)

## 23233 to 23262. Bamboo.

From China. Received through Mr. Frank N. Meyer, agricultural explorer, June, 1908, and brought by him from China to the Plant Introduction Garden, Chico, Cal.

The following plants:

23233.

From vicinity of Tangsi, Chehkiang, China. "(No. 301, autumn, 1907.) Timber bamboo. Chinese name *Mao tsoh*. The largest and most common kind; attains a height of 100 feet and a diameter at its base of 6 to 8 inches; grows only on mountain slopes, preferably in a rich red loam. Used in many, many ways; for instance, in the manufacture of big ladders, water pipes, gutters, tiles on roofs, construction material for large sheds, etc." (*Meyer.*)

23234.

From vicinity of Tangsi, Chehkiang, China. "(No. 302, autumn, 1907.) Timber bamboo. Second in size of the timber bamboos; grows in valleys and at the foot of mountains. Chinese name *Tae tsoh*. This is utilized in furniture manufacture and for poles and boat-hook handles." (*Meyer.*)

23235.

From vicinity of Tangsi, Chehkiang, China. "(No. 303, autumn, 1907.) A timber bamboo, resembling very much the preceding one (S. P. I. No. 23234). Grows on flat, level land and has a very open stand. Is used for tool handles, small light ladders, etc. Chinese name *Tae tsoh* and also *Kang tsoh*." (*Meyer.*)

23236.

From vicinity of Tangsi, Chehkiang, China. "(No. 304, autumn, 1907.) Timber bamboo, having long joints, but not a large-growing kind. Much used for basket manufacture when the stems have been split up in long, narrow, flexible strips. Chinese name *Wang kon tsoh*." (*Meyer.*)

23237.

From vicinity of Tangsi, Chehkiang, China. "(No. 305, autumn, 1907.) Timber bamboo, called the *Stone* bamboo, on account of the stems being very hard. Mostly used in the manufacture of fine bamboo furniture, it being a very strong kind. Chinese name *Sah tsoh*." (*Meyer.*)

23238.

From vicinity of Tangsi, Chehkiang, China. "(No. 306, autumn, 1907.) Timber bamboo. A variety called the *Wooden* bamboo, having solid stems. It is rather small but strong. Chinese name *Moh tsoh*." (*Meyer.*)

23239.

From vicinity of Tangsi, Chehkiang, China. "(No. 307, autumn, 1907.) A small but strong variety, called the *Bitter* bamboo. Chinese name *Kow tsoh*." (*Meyer.*)

23240. PHYLLOSTACHYS NIGRA (Lodd.) Munro.

From vicinity of Tangsi, Chehkiang, China. "(No. 308, autumn, 1907.) Timber bamboo. A small but strong variety, growing on mountain slopes. Used for making walking canes, pipestems, and fancy articles. Chinese name *Yu tsoh*, meaning oil bamboo, on account of its shining stems." (*Meyer.*)

## 23233 to 23262—Continued.

**23241.**

From vicinity of Tangsi, Chehkiang, China. "(No. 309, autumn, 1907.) A bamboo growing on rich plains and producing edible shoots. Chinese name *Mao tchin tsoh.*" (*Meyer.*)

**23242.**

From vicinity of Tangsi, Chehkiang, China. "(No. 310, autumn, 1907.) Vegetable bamboo. An edible bamboo growing on the plains. Chinese name *Oo chin tsoh.*" (*Meyer.*)

**23243.**

From Tangsi, Chehkiang, China. "(No. 311, autumn, 1907.) Vegetable bamboo. The ordinary edible bamboo grown in nearly every back yard in central China. Chinese name *Pah koh poo chi.*" (*Meyer.*)

**23244.**

From Tangsi, Chehkiang, China. "(No. 312, autumn, 1907.) Vegetable bamboo. Another common, edible bamboo, abounding on the plains. Chinese name *Hua koh poo chi.*" (*Meyer.*)

**23245.**

From vicinity of Tangsi, Chehkiang, China. "(No. 313, autumn, 1907.) Vegetable bamboo. A very early variety, producing edible sprouts. Chinese name *Tsao ri tsoh.*" (*Meyer.*)

**23246.**

From vicinity of Tangsi, Chehkiang, China. "(No. 314, autumn, 1907.) Ornamental bamboo, called the *Purple* bamboo, on account of having bronze reddish colored stems. Nice when in a clump. Chinese name *Tsi tsoh.*" (*Meyer.*)

**23247.**

From vicinity of Tangsi, Chehkiang, China. "(No. 315, autumn, 1907.) Ornamental bamboo. The stems of this small, ornamental bamboo are used for pipestems and canes. Chinese name *Mae loh tsoh.*" (*Meyer.*)

**23248.**

From vicinity of Tangsi, Chehkiang, China. "(No. 316, autumn, 1907.) Ornamental bamboo. The noted square bamboo, which is difficult to grow; requires partial shade. The stems are used for canes and pipestems. Chinese name *Fang tsoh.*" (*Meyer.*)

**23249.**

From vicinity of Tangsi, Chehkiang, China. "(No. 317, autumn, 1907.) Ornamental bamboo. A variety called the *Honey* bamboo. Chinese name *Mih tsoh.*" (*Meyer.*)

**23250.**

From Tangsi, Chehkiang, China. "(No. 318, autumn, 1907.) A low-growing bamboo, the leaves of which are used for wrapping rice, flour, or millet dumplings, the same as the Mexicans use the hull leaves of the corncobs to boil their tamales in. Chinese name *Tsong mah tsoh.*" (*Meyer.*)

**23251.**

From Ningpo, Chehkiang, China. "(No. 319, autumn, 1907.) A bamboo from Ningpo, called *Wu tsoh.*" (*Meyer.*)

## 23233 to 23262—Continued.

**23252.**

From Ningpo, Chehkiang, China. "(No. 320, autumn, 1907.) A bamboo from Ningpo, called *Loong su tsoh.* A tall, yellow-stemmed variety." (*Meyer.*)

**23253.**

From Ningpo, Chehkiang, China. "(No. 321, autumn, 1907.) A bamboo from Ningpo, called *Tsin tsoh.*" (*Meyer.*)

**23254.**

From Ningpo, Chehkiang, China. "(No. 322, autumn, 1907.) A bamboo from Ningpo, called *Huang ʌo tsoh.*" (*Meyer.*)

**23255.**

From Ningpo, Chehkiang, China. "(No. 323, autumn, 1907.) A bamboo from Ningpo, called *Man tsoh.*" (*Meyer.*)

**23256.**

From Ningpo, Chehkiang, China. "(No. 324, autumn, 1907.) A bamboo from Ningpo, called *Tan tsoh.* A tall-growing, green-stemmed variety." (*Meyer.*)

**23257.**

From Ningpo, Chehkiang, China. "(No. 325, autumn, 1907.) A bamboo from Ningpo, called *Tsze tsoh.* A tall, purple-stemmed variety." (*Meyer.*)

**23258.**

From Ningpo, Chehkiang, China. "(No. 326, autumn, 1907.) A bamboo from Ningpo, called *Mei lu tsoh.* A variety having spotted stems." (*Meyer.*)

**23259.**

From Ningpo, Chehkiang, China. "(No. 327, autumn, 1907.) A bamboo from Ningpo, without name." (*Meyer.*)

**23260.**

From Hangchow, Chehkiang, China. "(No. 328, June 28, 1907.) Square bamboo. Obtained from Dr. Duncan Main at Hangchow. For further remarks see No. 316 (S. P. I. No. 23248)." (*Meyer.*)

**23261.**

From Fengtai, near Peking, Chihli, China. "(No. 329, June 1, 1907, and Mar. 31, 1908.) The so-called *Hardy* bamboo, growing in gardens in and around Peking and Tientsin, where the climatic conditions are not what might be called favorable for the growth of bamboos. These plants may be trusted to be hardy as far north as Philadelphia, and can be grown commercially farther south, perhaps, to supply flower stakes. Chinese name *Chu tse.*" (*Meyer.*)

**23262.**

From Soochow, Kiangsu, China. "(No. 330, Apr. 26, 1908.) A very dwarfy bamboo, grown in pots and other vessels as an ornamental plant where it rarely reaches over 1 foot in height; when planted out it seems to grow higher. Chinese name *Feng pi chu.*" (*Meyer.*)

## 23263. NOTHOFAGUS OBLIQUA (Mirb.) Bl.

From Santa Ines, Chile. Presented by Señor Salvador Izquierdo. Received June 29, 1908.

"The *Roble* of Chile, called *Coyam* by the original inhabitants. It is a tall tree with a straight stem, attaining 3 to 4 feet diameter. The wood is heavy and durable, well adapted for posts, beams, girders, rafters, and joists, but not for flooring. One of the few Chilean trees with deciduous foliage." (*Doctor Philippi.*)

## 23267 to 23289.

From Chile, South America. Presented by Mr. José D. Husbands, Limávida via Molina, through Mr. C. V. Piper. Received June 24, 1908.

The following seeds:

**23267.** ZEA MAYS L. **Indian corn.**

**23268.** NOTHOFAGUS OBLIQUA (Mirb.) Bl. **"Chilean red oak."**

See No. 23263 for description.

**23269.** QUILLAJA SAPONARIA Mol. **Quillai.**

"A colossal tree, fit not only for loamy but also sandy and peaty soil. The bark is rich in saponin, and therefore valuable for dressing wool and silk; also for various cleansing processes." (*Von Mueller.*)

**23270.** KAGENECKIA OBLONGA Ruiz & Pav. **Bollen.**

"This is allied to *Quillaja saponaria*, and provides tan bark locally." (*Dr. J. A. de los Rios.*)

**23271.** DRIMYS CHILENSIS DC. **Canelo.**

"This tree attains in river valleys a height of 60 feet. The wood is never attacked by insects. Bark used for medicinal purposes." (*Extract from Von Mueller.*)

**23272.** MAYTENUS BOARIA Mol. **Maiten.**

See No. 3394 for description.

**23273.** CRINODENDRON PATAGUA Mol. **Patagua.**

See No. 3354 for description.

**23274.** RHEUM sp. (?)

**23275.** TRITICUM POLONICUM L. (?) **Wheat.**

**23276.** TRITICUM POLONICUM L. (?) **Wheat.**

**23277.** ERODIUM MOSCHATUM (L.) L'Herit. **Alfilerilla.**

**23278.** MELILOTUS INDICA (L.) All.

**23279.** MELILOTUS INDICA (L.) All.

**23280 to 23284.** MEDICAGO ARABICA (L.) All.

**23285.** (Undetermined.)
Grass.

**23286.** (Undetermined.)
Grass.

**23287.** TRIFOLIUM PRATENSE L. **Red clover.**

**23288.** TRIFOLIUM sp. (?)

**23289.** TRIFOLIUM PRATENSE L. (?)
"Wild pink clover."

## 23290 to 23312.

From China. Received through Mr. Frank N. Meyer, agricultural explorer, and brought by him to the Plant Introduction Garden, Chico, Cal., June, 1908; forwarded to Washington, D. C., and received July 6, 1908.

The following seeds:

**23290.** PISUM ARVENSE L. **Field pea.**

From Wutaishan, Shansi, China. "(No. 921a, Feb. 26, 1908.) Peas used as a food, either sprouted or boiled as they are. Grow at 5,000 to 6,000 feet elevation. Chinese name *Wau doh.*" (*Meyer.*)

**23291.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Wutaishan, Shansi, China. "(No. 922a, Feb. 26, 1908.) Black soy bean, growing at 5,000 to 6,000 feet elevation. Are considered by the Chinese the best food for their hard-working mules and horses; they must always be boiled before being fed to the animals; otherwise they may cause colic; the Chinese also mix a liberal quantity of sorghum seed and chopped straw with these beans. Chinese name *Ghae doh.*" (*Meyer.*)

**23292.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Wutaishan, Shansi, China. "(No. 923a, Feb. 26, 1908.) Yellow soy bean. Growing at 5,000 to 6,000 feet elevation. They are used all through northern China for making bean curd and bean vermicelli. Chinese name *Huang doh.*" (*Meyer.*)

**23293.** PHASEOLUS VULGARIS L. **Bean.**

From Wutaishan, Shansi, China. "(No. 924a, Feb. 26, 1908.) Red beans, growing at 5,000 to 6,000 feet elevation; they like a black, rich soil. Used as a vegetable when boiled. Chinese name *Lien doh.*" (*Meyer.*)

**23294.** VICIA FABA L. **Horse bean.**

From Wutaishan, Shansi, China. "(No. 925a, Feb. 26, 1908.) A small horse bean, growing at 5,000 to 6,000 feet elevation. Mostly used as a delicatesse after having been roasted with oil and salt; also eaten as a vegetable when slightly sprouted." (*Meyer.*)

**23295.** AVENA NUDA INERMIS (Koern.) Asch. & Graeb. **Naked oat.**

From Wutaishan, Shansi, China. "(No. 926a, Feb. 26, 1908.) These oats grow all through the higher mountain districts and form the staple food of the natives; they require apparently a short season for maturing and seem to thrive in quite sterile locations. Chinese name *Yoh ma.*" (*Meyer.*)

**23296.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Taichou, Shansi, China. "(No. 929a, Mar. 2, 1908.) Yellow soy beans, found growing on strongly alkaline lands. Chinese name *Huang doh.* For further remarks see No. 923a (S. P. I. No. 23292)." (*Meyer.*)

**23297.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Taichou, Shansi, China. "(No. 930a, Mar. 2, 1908.) Black soy bean. Grows on strongly alkaline lands. Chinese name *Ghae doh.* For further remarks concerning their uses see No. 922a (S. P. I. No. 23291)." (*Meyer.*)

**23298.** CANNABIS SATIVA L. **Hemp.**

From Soolungko, Shansi, Kwohsien District, China. "(No. 931a, Mar. 3, 1908.) Found growing in mountain valleys and considered a good hemp. Chinese name *Shan ma tse.*" (*Meyer.*)

## 23290 to 23312—Continued.

**23299.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Tsintse, Shansi, south of Taiyuanfu, China. "(No. 933a, Mar. 12, 1908.) Black and yellow. A rare local variety of a strange soy bean used as a vegetable when slightly sprouted, and after having been scalded for a few minutes in boiling water is eaten with a salt sauce; the skin must be removed before scalding. Chinese name *Yang yen doh*, meaning sheep's eye bean." (*Meyer.*)

**23300.** PANICUM MILIACEUM L.

From the plains of northern China. "(No. 943a, autumn, 1907.) Hulled drooping millet. Is eaten all over northern China as a high-class food. Boiled very often with Chinese dates; small, sticky, sweet cakes and simple wholesome candies are also prepared from this grain; tastes very good with milk and sugar as a breakfast or light evening food and may also serve as an infant's food. Chinese name *Huang mi.*" (*Meyer.*)

**23301.** PHASEOLUS ANGULARIS (Willd.) W. F. Wight.

From Hupehko, Chihli, China. "(No. 947a, Dec. 13, 1907.) A large variety of a gray-blackish bean, which is able to grow on rather sandy and on alkaline lands. Is used as a vegetable when sprouted; also pounded up with sugar and used in small cakes as a stuffing. Chinese name *Ghae shau doh.*" (*Meyer.*)

**23302.** PHASEOLUS VULGARIS L.

From Hupehko, Chihli, China. "(No. 948a, Dec. 13, 1907.) A large, white bean, used as a vegetable boiled in soups. Growing on sandy and on alkaline lands. Chinese name *Ta pai doh.*" (*Meyer.*)

**23303.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Shiling, Chihli, China. "(No. 949a, Jan. 25, 1908.) Yellow soy bean. Chinese name *Ta huang doh.* For further remarks see No. 923a (S. P. I. No. 23292)." (*Meyer.*)

**23304.** PHASEOLUS ANGULARIS (Willd.) W. F. Wight.

From Peking, Chihli, China. "(No. 950a, Feb. 8, 1908.) A small, red bean, which is used as a sweetmeat and as a stuffing in cakes. Chinese name *Hong shau doh.*" (*Meyer.*)

**23305.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Peking, Chihli, China. "(No. 951a, Feb. 8, 1908.) Large, light yellow soy bean. Used mostly as a vegetable when slightly germinated, and eaten with a salt sauce. Chinese name *Ta huang doh.*" (*Meyer.*)

**23306.** GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Peking, Chihli, China. "(No. 952a, Feb. 8, 1908.) Large, black soy bean, green inside. Comes from Manchuria and is used mostly like the preceding number (S. P. I. No. 23305.) Chinese name *Ta ghae doh.*" (*Meyer.*)

**23307.** VIGNA UNGUICULATA (L.) Walp. **Cowpea.**

From Peking, Chihli, China. "(No. 933a, Feb. 8, 1908.) Mottled. A rather rare variety, used like No. 950a (S. P. I. No. 23304). Chinese name *Hua chiang doh.*" (*Meyer.*)

## 23290 to 23312—Continued.

23308. PHASEOLUS VULGARIS L.

From Peking, Chihli, China. "(No. 954a, Feb. 8, 1908.) Lemon-colored beans. A rare variety used as a vegetable in soups. Chinese name *Huang yueng doh.*" (*Meyer.*)

23309. GOSSYPIUM HIRSUTUM L. **Cotton.**

From Pingkuhsien, Chihli, China. "(No. 955a, Nov. 7, 1907.) The ordinary short-fibered variety of cotton grown all over northern China. Chinese name *Ta tse mien hua.*" (*Meyer.*)

23310. GOSSYPIUM INDICUM Lam. **Cotton.**

From Pingkuhsien, Chihli, China. "(No. 956a, Nov. 7, 1907.) A very good variety of cotton, being long fibered and silky. The city of Pingkuhsien is famous throughout North China for the cotton cloth made from this variety. Chinese name *Chan yung mien hua.*" (*Meyer.*)

23311. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Shiling, Chihli, China. "(No. 957a, Jan. 25, 1908.) Large, green soy bean. Used as a vegetable when slightly sprouted, after having been scalded in boiling water. Chinese name *Ta ching doh.*" (*Meyer.*)

23312. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Pautingfu, Chihli, China. "(No. 958a, Jan. 28, 1908.) A rare, local variety of soy bean, being small and of greenish yellow color. Chinese name *Shau ching doh.*" (*Meyer.*)

## 23313 to 23315.

From Bangalore, British India. Presented by the superintendent of the Mysore Government Botanical Gardens. Received June 25, 1908.

The following seeds:

23313. BAUHINIA MONANDRA Kurz. (?)

"Leaves round-ovate, truncate at base. Racemes short, terminal, pubescent. Petals 1¼ inches, probably whitish." (*J. G. Baker, in Fl. Brit. Ind.*)

23314. MANIHOT GLAZIOVII Muell. Arg. **Ceara rubber.**

"Ceara rubber has not been cultivated in the West Indies to any extent, but it is like cassava in its capability of growing in dry, sandy soil. It would probably yield more rubber if grown in districts where irrigation is possible." (*Wm. Fawcett, in Bailey.*)

23315. SAPINDUS TRIFOLIATA L. **Soapnut tree.**

"A stout tree, native of India. Leaves alternate, pinnate. Flowers dull white. Berries the size of a cherry, saponaceous.

"This fruit is used in southern India as a substitute for soap. An oil is also extracted from the berries. The wood is yellow and hard and is used in house building and for combs, boxes, etc." (*G. Watt, Dict. Econ. Prod. Ind.*)

## 23316 to 23322.

From Guatemala, South America. Collected by Dr. W. A. Kellerman. Received through Dr. J. N. Rose, U. S. National Herbarium, June 25, 1908.

**23316 to 23320.** **Cactus.**

The following cacti were introduced for investigation as to their possible value for forage:

**23316.**

From El Rancho. "*Old Man* cactus. (No. 7061, Jan. 12, 1908.) Fruit red, depressed globular, smooth (no prickles), 1½ inches in diameter." (*Kellerman.*)

**23317.**

From El Rancho. (Kellerman's No. 7055, Jan. 12, 1908.)

**23318.**

"Cuttings of S. P. I. No. 23317. Very spiny and prickly." (*Young.*)

**23319.**

From Los Amates. (Kellerman's No. 7107, Feb. 15, 1908.)

**23320.**

From Antigua. "(No. 7117.) A spineless cactus found climbing over stone fences." (*Kellerman.*)

**23321 and 23322.** DAHLIA sp. **Dahlia.**

**23321.**

From Volcano Agua. (Kellerman's No. 7099.)

**23322.**

(Kellerman's No. 7096.)

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