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INVENTORY No. 74



Washington, D. C.

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## SEEDS AND PLANTS IMPORTED BY THE OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION, BUREAU OF PLANT INDUSTRY, DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1923 (S. P. I. NOS. 56145 TO 56790)

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### INTRODUCTORY STATEMENT

**T**HIS INVENTORY contains a record of some unusually rare plants which have been collected by Agricultural Explorer Joseph F. Rock, whose travels in the western part of the Province of Yunnan, China, have been carried on regardless of the unsettled conditions in that region. He has been obliged not only to take the usual risks of travel at high altitudes on primitive mountain passes where a misstep might mean instant death, run the usual dangers from infectious diseases, like pneumonic plague and dysentery, and bear the severe nervous strain of loneliness, but he also has had to keep out of the way of the roving bands of Tibetans and the Chinese soldiers carrying on an almost continuous conflict along the Tibetan border of Yunnan.

Collecting dried specimens or taking photographs of plants under such conditions requires great skill, an unusual knowledge of oriental languages, and a wide acquaintance with Asiatic plants. When, however, to the collecting of specimens and the taking of photographs is added the gathering and packing of living seeds and plants and getting them alive to America, requiring more than two months by letter post, the nature of the problem which Mr. Rock has had to solve is more correctly stated. Much of the material gathered on the Likiang Snow Range has had to come by special messenger as letter post over mountain passes at 12,000 feet altitude and be plunged into the torrid humidity of the Rangoon post office, to remain in that steaming atmosphere until the post bags were finally unloaded in the dry Italian air of Brindisi. To pack cuttings and seeds of high-mountain plants for such a voyage and have them arrive alive in Washington is a tribute to the attention to detail which Mr. Rock has shown, and it is to be hoped that his efforts will be repaid by the large number of species which have survived the ordeal and will thrive in this country.

By one of those fatalities of things, the trees which were most desired from Yunnan, Yunnan chestnuts and species of the related genus *Castanopsis*, are known to have very short-lived seeds which are particularly hard to transport. Although almost every conceivable method of packing was tried, nearly all the seeds of these genera perished on the way. It is believed, however, that enough lived to establish some of the species in America.

Mr. Rock's material described in this inventory came mainly from the general region of Likiang, which lies more than 8,000 feet above sea level, near the great mountain range around which the Yangtze River meanders on its way to the Pacific, a region of deep gorges and snow-capped mountain peaks.

The oriental persimmon has come into prominence as a promising fruit crop for the South, but as yet horticulturists are not satisfied with the American persimmon, *Diospyros virginiana*, or the Chinese, *D. lotus*, as a stock. Mr. Rock made a collection of undescribed species of *Diospyros* (Nos. 56308 to 56310) which may prove of particular value for this purpose. A tall, spreading species, 50 feet in height, from Tengyueh; another from an altitude of 8,500 feet on the slopes back of Likiang; and a species with black fruit the diameter of a half dollar are three forms which, added to those previously collected by him, should provide us with the stock that is needed.

The wild apple of Yunnan (*Malus yunnanensis*, Nos. 56320, 56321, and 56324), which Mr. Rock found among the limestone bowlders along the watercourses of the Likiang Snow Range at 10,000 feet altitude, is 30 to 40 feet in height, has fruits an inch in diameter borne in large clusters, and, according to Mr. Rock, is one of the handsomest trees in this region. The value of this species in this country for breeding or stock purposes time alone will determine. Mr. Rock's two other species from the same region, as yet unidentified (*Malus* spp., Nos. 56322 and 56323), or his wild species from the dense forests of the Salwin Ridge (No. 56325), or that from the Tengyueh-Sadon Trail (No. 56459), or those from the hills back of Mengka (No. 56460), or the two from Puerhfu (Nos. 56474 and 56475), may, any one of them, prove of more value.

Of wild pears (*Pyrus* spp.) Mr. Rock found some remarkable forms in Yunnan: One (No. 56277) bearing mellow edible fruits 3 to 4 inches in diameter, from 6,000 feet altitude; a second one (No. 56278) growing to be 70 feet tall, with fruits 2½ inches in diameter; a third (No. 56279), from 6,500 feet, which is 30 feet tall and has greenish brown fruits the size of bullets, and a fourth (No. 56280), from 7,000 feet altitude, which grows to be 60 feet in height and has fruits 2½ inches in diameter.

On the Hoching Range, near Likiang, Mr. Rock collected seeds of one of the rare genera of Chinese conifers (*Keteleeria* sp., No. 56316). Since only two species of this conifer appear to be known, and as the one which Robert Fortune discovered in China has grown well in Italy, this species of Rock's may thrive in California and Florida.

Two wild olives (*Olea* spp., Nos. 56328 and 56329) which make trees 50 feet in height, from the forests beyond Wolung and the Shweli Valley, should be added to the California collections of olives and their relatives, for some time, perhaps, a plant breeder may find it possible to cross them and get forms for uses now unknown.

*Pinus armandi* (No. 56333), one of the tallest of the oriental pines, attaining a height of 90 feet, belongs unfortunately to the 5-leaved pines, which appear to be subject to the white-pine blister rust and may be of doubtful value for forestry purposes. But Rock's wild cherry (*Prunus* sp., No. 56335) from the Likiang Snow Range, his remarkable collection of 10 wild pears (*Pyrus* spp., Nos. 56338 to 56347) and 1 (*Pyrus* sp., No. 56491) from Puerhfu, which has already been used as a stock for pears in Yunnan, his 7 species of oak (*Quercus* spp., Nos. 56348 to 56354), his 10 species of Rhododendrons (Nos. 56355 to 56364), his *Rubus lutescens* (No. 56369), his 4 species of Sorbus (Nos. 56373 to 56376), and 7 as yet unclassified viburnums (Nos. 56379 to 56385) will surely interest amateurs and park superintendents in those regions where they will grow.

*Corylus colurna* has been a pronounced success in the Arnold Arboretum and the Rochester parks, and another tree filbert (*Corylus* sp., No. 56490) that Mr. Rock discovered at 10,000 feet altitude in the Likiang Snow Range, growing 50 feet high and from 2 to 3 feet in diameter and producing good-sized edible nuts, can scarcely fail to be a real addition to our parks and may even prove a profitable nut-producing tree.

Whether the giant lily (*Lilium* sp., No. 56778) that Mr. Rock found west of Tengyueh, which grows 15 feet high, will be easier of culture than *Lilium giganteum* remains to be determined, but already the lily breeders of the country are interested in it.

In Great Britain, the Chinese shrub *Photinia serrulata* is considered by Bean as "undoubtedly one of the finest evergreens ever introduced," and Rock's Yunnan species (*Photinia* sp., No. 56779), which he remarks is "one mass of deep orange-red fruits in November," may prove slightly different from this species and better adapted to American conditions.

In addition to the material collected by Mr. Rock, the following new introductions are worthy of special mention:

*Asculus wilsonii* (No. 56390), a narrow-leaved species of horsechestnut from central China, has been tried in the State of Washington and found better suited to the windy conditions there than the European species.

*Acer sterculiaceum* (No. 56399), a rare species of maple growing 80 feet high in the Himalayas at an altitude of 9,000 feet, has been sent by G. H. Cave, of Darjiling, India, as has also the handsome Himalayan birch (*Betula utilis*, No. 56400), which is still a rare tree in Great Britain.

C. A. Reed, nut expert of the Department of Agriculture, during his mission to China to study the walnut industry secured among other things a collection of walnuts (*Juglans regia*, Nos. 56409 to 56425) from the northern limit of the culture of this species in China which ought to prove decidedly valuable for American growers of this nut.

*Cudrania javanensis* (No. 56787), a thorny shrub which was introduced in 1915 from Taiwan and has grown unusually well on the rocky soils of southern Florida, is again introduced from New South Wales. Its value as a fruiting shrub or, as suggested, for hedge purposes deserves to be studied. It is related to the Chinese species, *Cudrania tricuspidata*, and to the Osage orange, *Toxylon pomiferum*, and as crosses between the two genera have been successfully made plant breeders may do something worth while with them.

*Hydnocarpus alpina* (No. 56445), a relative of one of the chaulmoogra-oil-producing trees of Burma, *H. wightiana*, and *H. anthelmintica*, from the Nilghiri Hills of southern India, were sent in by Edmond Versin, of St. Jean le Blanc, France.

Four rare species of maple (*Acer* spp., Nos. 56453 to 56456), from Darjiling, which may thrive in the State of Washington and add their beauty to the parks there, have come from G. H. Cave.

Through Dr. H. L. Shantz seeds have come from Capt. Charles M. F. Swynerton, of Kilossa, Tanganyika Territory, East Africa, of the Johnston clover, *Trifolium johnstoni* (No. 56458). In the high altitudes of East Africa this is one of the prominent forage plants.

Dr. Carl Hartley sent in on request seeds of the large edible chestnut of western Java, *Castanopsis argentea* (No. 56461), which, because of its excellent quality, is worthy of the consideration of tropical horticulturists. The possibilities of a tropical chestnut for the northern markets, we believe, have not yet been considered.

In 1911 Sir Percy Fitzpatrick, of Johannesburg, Transvaal, sent the seeds of *Asparagus africanus*, with his opinion that it is better in flavor than any of the cultivated varieties. In view of the possibility of this species being adapted to certain conditions in America for which our ordinary varieties of *A. officinalis* are not suitable, we are glad to get an additional lot of seeds (No. 56483) through Mr. Gossweiler, of Loanda, Angola.

In 1919 Mr. Gossweiler sent seeds of a remarkable vegetable, *Rumex abyssinicus*, which made an unusual growth in American gardens, often attaining 7 feet in height, and because of its entire freedom from fiber and its delicate texture it has recommended itself for general use in the Southern States as a new source of summer "greens," a class of vegetable much desired by residents there. Mr. Gossweiler has sent another lot of seed (No. 56486) for further experimentation.

*Tecoma garrocha* (No. 56535), a native of Argentina, may supplant with its slender raceme of bright-yellow and scarlet flowers the well-known *T. stans* so commonly grown in Florida. Doctor Proschowsky has sent seeds from Nice, France.

From Hobart, Tasmania, the Secretary of Agriculture has sent a collection of seeds which includes three handsome acacias (*Acacia* spp., Nos. 56559 to 56561), a species of Casuarina new to Florida (*C. suberosa*, No. 56564), the Wallaby grass (*Danthonia seminularis*, No. 56566), a perennial tufted fodder grass (*Stipa pubescens*, No. 56569), and *Eucalyptus regnans* (No. 56567), the tallest of the genus, even reaching, according to earlier records, 400 feet in height; in other words, one of the tallest trees of which there is any record.

Twelve selected varieties of sugarcane (*Saccharum officinarum*, Nos. 56617 to 56628) representing a long series of selections and plant-breeding experiments to produce plants resistant to the mosaic disease have been received from Robert M. Grey. Field tests will show whether these are highly resistant under other conditions than those about Cienfuegos, Cuba, where Mr. Grey carried on his breeding experiments.

A collection of mango varieties (*Mangifera indica*, Nos. 56648 to 56659) from Rio de Janeiro, presented by Dr. P. H. Rolfs, of Vicosia, Minas Geraes, although inferior in size and color to the East Indian mangos, may be valuable for southern Florida, where the anthracnose is so prevalent, on account of their resistance to that disease.

*Aleurites montana* (No. 56676), the mu-oil tree of southern China, bears nuts that yield the southern tung oil of commerce, which appears to be indistinguish-

able from the northern tung oil obtained from *A. fordii*. In view of the increasing use for this oil southern Florida may become a domestic source of supply through the growth of the southern species.

Vicary Gibbs has given us his Aldenham flowering apple (*Malus sylvestris*, No. 56693), said to be a chance hybrid originating at Aldenham and one of the very finest of all the red-flowered apples, for our parks and dooryards. He has sent also seeds of *Stranvaesia davidiana* (Nos. 56695 and 56696), a handsome bush or small standard tree which is evergreen and hardy at Washington and because of its bright foliage worthy of a place in any small garden.

After many years of fruitless effort there have been collected at last, through the kindness of C. T. White, Government botanist of Queensland, the seeds of the two unusually hardy species of *Garcinia*, *G. mestoni* (No. 56699) and *G. gibbsiae* (No. 56698), both native to the forests of the Bellenden Ker Hills of Queensland at altitudes of 2,000 feet. Since these may grow better in southern Florida than the more tropical species of *Garcinia*s, they have a special interest for those interested in the establishment of the mangosteen in the Western Hemisphere. *Garcinia mestoni* has a large, very juicy fruit of a pleasant acid flavor, but ripe fruits of *G. gibbsiae* have not yet been eaten by any collector who could describe its character. Although the seeds sent by Mr. White failed to live, he is now growing plants in Brisbane for shipment to America.

Thirty-six seedling sweet-potato varieties (*Ipomoea batatas*, Nos. 56710 to 56745) from plantings of the Big Wig, Key West "yam," and Black Rock varieties which it is believed were crossed naturally, for trial in the sweet-potato regions of this country, were sent by J. B. Thompson, of St. Croix, Virgin Islands.

Consul Charles E. Allen, of Damascus, sent a collection of apple varieties (*Malus sylvestris*, Nos. 56746 to 56755) from the Plain of Zebdani, which lies northwest of Damascus and is 3,500 feet above the sea. It is possible that some of these may prove better adapted to the Mohave Desert apple region of California than are the Jonathan, Rome Beauty, Yellow Newtown, and other varieties now being tried there.

The botanical determinations of introductions have been made and the nomenclature determined by H. C. Skeels, and the descriptive matter has been prepared by Paul Russell, who has had general supervision of this inventory.

DAVID FAIRCHILD,  
*Agricultural Explorer in Charge.*

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,  
Washington, D. C., July 25, 1924.

## INVENTORY<sup>1</sup>

### 56145. RUBUS sp. Rosaceæ.

#### Raspberry.

From Stavanger, Norway. Plants presented by Thoralf Bryne. Received March 1, 1923.

"Paradise berry. A large red raspberry, almost as large as the largest variety known in cultivation, which is the English variety 'The Royal.'" (Bryne.)

### 56146 and 56147.

From Brisbane, Queensland. Seeds presented by C. T. White, Government botanist. Received January 4, 1923.

#### 56146. DAVIDSONIA PRURIENS F. Muell. Cunoniaceæ.

A small (30 to 40 feet) tree of graceful erect habit with long drooping pinnate leaves and pendulous clusters of reddish flowers. The oval fruit about the size of a goose egg is covered with short stiff hairs. Rubbing with a rough cloth quickly and easily removes these and exposes the smooth, plumlike, purple skin. The soft fleshy pulp is rich purple and has a sharply acid flavor; it contains a few flat, irregularly shaped seeds which are small for the size of the fruit, a feature not frequently occurring in wild fruits. This "plum," as it is called, is largely used by settlers in Queensland for making jam and jelly. The hard dark-brown, close-grained wood is tough and durable and is used for tool handles and mallets. This tree is a native of tropical Queensland; a smaller form is found in southern Queensland and adjoining parts of New South Wales.

For previous introduction, see S. P. I. No. 54785.

#### 56147. EUCALYPTUS STAIGERIANA F. Muell. Myrtaceæ. Lemon-scented ironbark.

"This is a valuable oil-yielding species which so far has not been exploited because the trees grow in rather isolated places in North Queensland." (White.)

A tree of medium size with oval or narrow blue-green leaves covered with numerous oil dots. The foliage of this tree yields a large quantity of oil, equal in fragrance to that of lemons, for which it is an agreeable substitute. The proportion of oil obtained from dry leaves is 2¼ per cent; the specific gravity of the oil is 0.901. (Adapted from Bailey, *Synopsis of the Queensland Flora*, p. 176.)

### 56148. PAPPEA CAPENSIS Eckl. and Zeyh. Sapindaceæ.

From Pretoria, Transvaal, Union of South Africa. Seeds presented by I. B. Pole Evans, Chief, Division of Botany. Received January 5, 1923.

A shrub or small tree which occurs abundantly in the vicinity of the Fish River, Cape Province,

South Africa. The wood is white, close-grained, and hard and is used for farm implements and furniture. The leathery, hard fruit, about half an inch in diameter, usually contains one reddish brown seed with a brittle shell; within is a soft kernel which is yellow and very oily. The kernel constitutes about 65 per cent of the entire seed. The entire seeds contain 47.8 per cent of oil, which is golden yellow and fairly viscous. The oil is of the "nondrying" type and probably could be used either for soap manufacture or as a lubricant. The residual meal left after extracting the oil has a fairly good nutritive value, but also a small quantity of a saponin, and feeding trials would be necessary to determine whether the meal could be used as cattle feed. (Adapted from *Bulletin of the Imperial Institute, London*, vol. 17, p. 488.)

### 56149. LILIUM sp. Liliaceæ. Lily.

From Burma. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 3, 1923.

"(No. 6732. Kachin Hills. November 13, 1922.) A tall lily 10 feet high, with a stem 2 inches in diameter, collected along a brook in a rhododendron thicket on the Mengka-Sadon Trail, in northern Burma, on the Changtiang Mountains at an altitude of 9,400 feet. The leaves are broadly triangular, and although the plant was seen only in the fruiting stage, it is probable that the flowers are large. In the region where this species grows it is now extremely cold, ice forming on the brooks at about 4 p. m." (Rock.)

### 56150 to 56152.

From China and India. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 5, 1923. Quoted notes by Mr. Rock.

#### 56150. MALUS sp. Malaceæ. Apple.

"(No. 6725. Hpunkaw, Burma. November 11, 1922.) A tree 60 to 70 feet tall, with a trunk 3½ feet in diameter, found in sandy soil in dense forests on the ridge above the Kachin village of Hpunkaw. The branches are apt to have long spinelike branchlets near the trunk, but these do not occur on the older branches. The fruits, about 2 inches in diameter, are somewhat oval, with firm aromatic flesh."

#### 56151 and 56152. PYRUS spp. Malaceæ. Pear.

##### 56151. PYRUS sp.

"(No. 6730. Mengka, Yunnan. November 12, 1922.) A tree 30 feet high, with long spreading branches, found wild in sandy loam on a small plain at an altitude of 5,400 feet. The large oblong leaves are acute at both ends, and the very numerous, spherical-compressed, russet-brown fruits are an inch in diameter. Where this species grows it is very cold; ice forms now every day in the late afternoon."

<sup>1</sup> It should be understood that the varietal names of fruits, vegetables, cereals, and other plants used in this inventory are those under which the material was received when introduced by the Office of Foreign Seed and Plant Introduction and, further, that the printing of such names here does not constitute their official publication and adoption in this country. As the different varieties are studied, their identity fully established, their entrance into the American trade forecast, and the use of varietal names for them in American literature becomes necessary, the foreign varietal designations appearing in this inventory will be subject to change with a view to bringing the forms of the names into harmony with recognized American codes of nomenclature.

## 56150 to 56152—Continued.

56152. *PYRUS* sp.

"(No. 6731. Mengka, Yunnan. November 12, 1922.) A wild pear which grows in company with the preceding, No. 6730 [S. P. I. No. 56151], but has smaller leaves and fruits; the latter are oblong pear shaped, reddish yellow, and very numerous."

56153 to 56157. *FRAGARIA* spp. **Rosa-**  
**ceae. Strawberry.**

From Bourg la Reine, Seine, France. Plants presented by Millet & Fils. Received January 5, 1923. Quoted notes from catalogue of Millet & Fils.

Secured for department horticulturists experimenting with small fruits.

56153. *FRAGARIA* sp.

"*Belle Lyonnaise*. Plant thickset, vigorous; fruit round, very fragrant, with white flesh."

56154. *FRAGARIA* sp.

"*Docteur Morère*. Fruit very large and sweet; one of the best varieties; forces well."

56155. *FRAGARIA* sp.

"*Madame Meslé*. A very vigorous giant variety with enormous brilliant vermilion red fruits with pink flesh; a good commercial variety of large yield. Season medium."

56156. *FRAGARIA* sp.

"*St. Fiacre*. This is the best variety obtained thus far; the plant is very vigorous, with dark-green foliage, and the fruits very large, of a brilliant red and extra quality. The yield is large the first season, and the variety is excellent for forcing and quantity production."

56157. *FRAGARIA* sp.

"*Marguerite Lebreton*. A very early variety, with abundant elongated fruits. One of the best forcing varieties."

56158. *GUILIELMA UTILIS* Oerst. **Phœ-**  
**nicaceae. (Bactris utilis Benth.) Pejibaye.**

From San Jose, Costa Rica. Seeds purchased from Otón Jimenez. Received January 16, 1923.

A shipment of seeds of the pejibaye. For an extended account of this interesting food palm, see the *Journal of Heredity*, vol. 12, pp. 154-166, April, 1921.

For previous introduction, see S. P. I. No. 54776.

56159 to 56175. *FRAGARIA* spp. **Ro-**  
**saceae. Strawberry.**

From Maidstone, England. Plants purchased from George Bunyard & Co. Received January 6, 1923. Quoted notes from Bunyard's Catalogue of Fruit Trees.

These varieties, not in the American trade, have been secured for department specialists engaged in strawberry breeding.

56159. *FRAGARIA* sp.

"*Bedford Champion*. Plant robust, with fine foliage; fruit large, with refreshing acid flavor. Season medium."

56160. *FRAGARIA* sp.

"*Black Prince*. Fruit small, dark red with scarlet flesh, one of the best for preserving, as the flesh turns a deep red and has a delicious flavor. This is the earliest ripening strawberry here."

## 56159 to 56175—Continued.

56161. *FRAGARIA* sp.

"*Countess*. Fruit handsome, wedge shaped, dark crimson, and of first-rate flavor. A moderate cropper. Season late."

56162. *FRAGARIA* sp.

"*Hibberd's George the Fifth*. Fruits large, some cockscomb shaped, very bright shining scarlet, with carmine, very firm flesh and a flavor equal to the best. This should not be confounded with *Laxton's George the Fifth*. Season late."

56163. *FRAGARIA* sp.

"*Laxton's Tidbit*. Fruit firm, brilliant scarlet, with white flesh of an exquisite flavor. Central fruits are ovate wedge shaped. Season medium."

56164. *FRAGARIA* sp.

"*Little Scarlet*. Fruit small, firm, light red, very freely produced, recommended especially for jam. Season early."

56165. *FRAGARIA* sp.

"*Madame Kooi*. Fruit enormous, hollow, poor flavor, white flesh, crop large. Of Dutch origin. Season medium."

56166. *FRAGARIA* sp.

"*President*. Fruit handsome, of pale color, with rich pine flavor; fine for forcing, as it retains its flavor and bears well. One of the best all-round sorts as regards quality and productiveness for main crop. Season medium."

56167. *FRAGARIA* sp.

"*Royal Hautbois*. A fine form of alpine strawberry, of rich aromatic flavor; good free habit."

56168. *FRAGARIA* sp.

"*St. Fiacre*. The berries, as large as Royal Sovereign, are freely produced and are of a bright color and rich flavor. Bears well in the summer without spoiling the autumn crop which ripens in September and October. A prolific bearer."

56169. *FRAGARIA* sp.

"*Sir Douglas Haig*. Fine flavor, brilliant color, early, and of large size. Season early."

56170. *FRAGARIA* sp.

"*The Bedford*. Constant and free bearer; fruit round, of fine appearance, first-rate sweet flavor; foliage ample. Season medium."

56171. *FRAGARIA* sp.

"*The Earl*. This may be best described as a much improved *Viscountesse de Thury*, larger in size, more vigorous, and free cropping. Season late."

56172. *FRAGARIA* sp.

"*The Queen*. An improved *British Queen*. Season medium."

56173. *FRAGARIA* sp.

"*Twentieth Century*. Large bright-red fruits, produced in enormous quantity; constitution very vigorous."

56174. *FRAGARIA* sp.

"*Utility of Laxton*. Good color, size, and flavor; the finest late strawberry yet produced."

56175. *FRAGARIA* sp.

"*Waterloo*. Plant heat resistant, runners few; fruit large, remarkable for its black mulberrylike appearance. Season late."

**56176. CITRUS GRANDIS (L.) Osbeck.**  
Rutaceæ. **Grapefruit.**

From Bangkok, Siam. Seeds presented by Dr. Y. S. Sanitwongse, through Maurice P. Dunlap, American consul. Received January 9, 1923.

"*Thong Dee* or '*Golden pummelo*. Fruit neither globose nor pear shaped, but somewhat flattened with one side of pistil end somewhat cheeked; size large, measuring 6 inches wide and only 4½ inches high; rind averaging half an inch thick, slightly colored pink in pithy part, especially near the flesh; flesh colored like that of *Daang Ai Chaa*, except that it is rather of a light brown than deep red and the color appears only in streaks in a flesh which is in reality quite white; seeds many; pulp vesicles large and easily separating from membrane, very juicy; flavor good but not so delicious as *Kao Pan*; general shipping qualities not so favorably reported as many other varieties; tree vigorous and reported to produce fruits of attractive flavor and juiciness under somewhat adverse conditions." (*G. Weidman Groff*.)

**56177 and 56178. AMYGDALUS COMMUNIS L. Amygdalaceæ. Almond.**  
(*Prunus amygdalus* Stokes.)

From Serai, Bagdad, Mesopotamia. Seeds presented by G. S. Cameron, officiating director of agriculture. Received January 8, 1923. Quoted notes by Mr. Cameron.

Seeds of two native almond varieties of Mesopotamia.

56177. "Sweet almonds with a thin, soft shell."

56178. "Sweet almonds with a hard, thick shell."

**56179. TRIFOLIUM PRATENSE L. Fabaceæ. Red clover.**

From Milan, Italy. Seeds purchased from Fratelli Ingegnoli. Received January 24, 1923.

Seeds of a giant red clover introduced for cultural and comparison tests.

**56180. GUILIELMA UTILIS Oerst. Phœnicaceæ. (Bactris utilis Benth.) Pejibaye.**

From Limon, Costa Rica. Seeds presented by G. P. Chittenden, manager, United Fruit Co. Received January 16, 1923.

For previous introduction, see S. P. I. No. 56158.

**56181 and 56182. TRIFOLIUM PRATENSE L. Fabaceæ. Red clover.**

From Paris, France. Seeds purchased from Vilmorin-Andrieux & Co. Received January 31, 1923.

Locally grown red-clover seeds introduced for cultural and comparison tests.

56181. *Surchoix Extra*. Grown northwest of Paris.

56182. *Violet de Bretagne*. Grown in Brittany.

**56183 to 56191.**

From Brisbane, Queensland. Seeds presented by E. W. Bick, curator, Botanic Garden. Received January 22, 1923.

56183 and 56184. ACACIA spp. Mimosaceæ.

56183. ACACIA FASCICULIFERA F. Muell.

A tall acacia from southwest Queensland, where it sometimes reaches a height of 70 feet. The phyllodia or "leaflike stems" are leathery, very narrow, with

**56183 to 56191—Continued.**

callous tips, and from 4 to 6 inches long. The flower heads, each containing 20 to 30 flowers, are borne in small axillary clusters. The very hard red wood is close grained and commonly used for building.

56184. ACACIA JUNCIFOLIA Benth.

A large slender-branched shrub, native to Queensland, with rushlike phyllodia 6 inches long or more and tipped with erect or curved points. The small fuzzy globular flower heads are borne singly or in pairs.

56185. BRACHYCHITON DISCOLOR F. Muell. Sterculiaceæ. (*Sterculia discolor* F. Muell.)

A large tree native to southern Australia, with roundish heart-shaped leaves, 4 to 6 inches in diameter, with white-velvety lower surfaces. The rose-red flowers, up to 2 inches long, are borne in few-flowered clusters in the upper axils. The wood is soft, light colored, and of rather coarse grain; when dried, however, it hardens and makes good shingles.

56186. CASSIA BREWSTERI TOMENTELLA F. Muell. Cæsalpiniaceæ.

An erect slender tree 20 to 30 feet high, found in thickets about Obum Obum, Queensland, where it is known as "bean tree." The branches, under surface of the leaflets, and small yellow flowers are covered with fine white hairs. The cylindrical pods, 1 or 2 feet long, are bright reddish brown. (Adapted from *Bailey, Queensland Flora*, pt. 2, p. 456.)

For previous introduction, see S. P. I. No. 37137.

56187 and 56188. ERYTHRINA spp. Fabaceæ.

56187. ERYTHRINA TOMENTOSA R. Br.

A small tree 10 to 15 feet high, with thick, rough, prickly bark, native to South Africa. The trifoliolate long-stemmed leaves, 10 to 14 inches long and wide, are densely hairy on both surfaces, and the bright-crimson flowers are borne in many-flowered spike-like clusters. The woody pods, velvety on the surface, are alternately swollen and contracted, which gives them a bizarre appearance. (Adapted from *J. Medley Wood, Natal Plants*, vol. 4, pls. 334, 335.)

56188. ERYTHRINA VESPERTILLO Benth. Coral tree.

Usually a small tree with prickly branches, broadly 3-lobed leaves, and numerous erect showy racemes of red flowers. The soft straw-colored wood is very light and spongy and is used by the natives for making shields. The roots are eaten raw.

56189. EUCALYPTUS RARIFLORA F. M. Bailey. Myrtaceæ.

A tall eucalypt from Queensland, where it appears to be rather rare. The slender branchlets are of a pleasing red, and the very variable leaves are almost circular on young trees, becoming very narrow on the older wood. The slender panicles contain usually only a few scattered flowers. (Adapted from *Queensland Agricultural Journal, new series*, vol. 1, p. 62.)

56190. EVODIA ACEDENS Blume. Rutaceæ.

An erect tree 70 to 80 feet in height, native to damp scrubby places throughout Queensland. The light-colored bark is somewhat corky, and the papery trifoliolate leaves are up to 5 inches long. The small pink flowers, which turn bluish as they die away, are borne in dense lateral clusters. The wood is very white, light, and soft.

## 56183 to 56191—Continued.

56191. *FLINDERSIA OXLEYANA* F. Muell.  
Meliaceæ.

A tall, much-branched tree, often becoming 100 feet in height, with opposite compound leaves which are crowded under the loose, many-flowered panicles. The bright-yellow, strong and fibrous wood is used in cabinet work; it is not readily attacked by white ants. (Adapted from *Bailey, Queensland Flora, pt. 1, p. 259.*)

56192. *RAPHANUS SATIVUS* L. Brassicaceæ. **Radish.**

From Algiers, Algeria, North Africa. Seeds presented by Dr. L. Trabut, Government botanist. Received January 5, 1923.

"Variety *campestris*. An improved giant radish, with large roots, used as cattle feed. The seeds are sown at the beginning of the rainy season, from August to October." (*Trabut.*)

56193 to 56195. *COIX LACRYMA-JOBI MA-YUEN* (Rom.) Stapf. Poaceæ. **Ma-yuen.**

From Buitenzorg, Java. Seeds presented by H. de Veer, chief of the plant-breeding station for annual crops, Java Department of Agriculture. Received January 8, 1923. Quoted notes by Mr. de Veer.

The *ma-yuen* is an edible soft-hulled variety of Job's-tears (*Coix lacryma-jobi*) quite different from the ordinary form, with hard beadlike seeds. It is grown in India, China, the East Indies, and also in the Philippines, where it is known as "adlay." For an account of the uses of adlay as a cereal and for analytical data, see *The Philippine Agricultural Review*, vol. 14, pp. 159-177.

56193. "*Djali ketan*. A glutinous form."

56194. "*Witte djali bras*. A form with white seeds."

56195. "*Zwarte djali bras*. A form with black seeds."

For illustrations of the *ma-yuen*, see Plates I and II.

56196 and 56197. *NAGEIA* spp. Taxaceæ.

From Hogsback, via Lovedale, Cape Province, South Africa. Seeds presented by David A. Hunter. Received January 8, 1923.

"These trees grow slowly but finally become very large. The timber is fine grained and is largely used in our shops for furniture." (*Hunter.*)

56196. *NAGEIA ELONGATA* (Ait.) Kuntze.  
(*Podocarpus elongata* L'Herit.)

This is known in South Africa as the "common yellow-wood," and it is the largest, most plentiful, and one of the most useful trees of Cape Province. The narrow evergreen leaves are quite short, being little more than an inch long. The tree becomes 80 to 120 feet in height, with a trunk usually 3 to 4 feet in diameter, occasionally 10 feet. The wood is light, soft, moderately strong and elastic, and of a pale yellow brown. When exposed to the weather the wood is quite durable.

56197. *NAGEIA THUNBERGH* (Hook.) F. Muell. (*Podocarpus thunbergii* Hook.)

A fine evergreen timber tree, up to 100 feet tall and with a trunk 4 feet in diameter, which occurs throughout all the timber forests from the Cape of Good Hope to Natal. The quality of the wood of this species is very similar to that of the preceding [S. P. I. No. 56196], and for most purposes they are used indiscriminately.

56198. *CYRTANTHUS CONTRACTUS* N. E. Brown. Amaryllidaceæ.

From Pretoria, Transvaal, Union of South Africa. Bulbs presented by I. B. Pole Evans, Chief, Division of Botany, Department of Agriculture. Received January 10, 1923.

A handsome member of the amaryllis family from the Transvaal, where its conspicuous beauty as it flowers on the burnt-over fields has earned it the name of "fire lily." The narrow bluish green leaves are over a foot in length, and the Van Dyke red peduncle, 7 inches or over long, bears a pendulous cluster of faintly scented scarlet or carmine flowers with strawberry-red pedicels. (Adapted from *Flowering Plants of South Africa, vol. 1, pl. 4.*)

56199 to 56265. *TRITICUM* spp. Poaceæ.

From Lisbon, Portugal. Seeds presented by Prof. D. A. Tavares da Silva, Instituto Superior de Agronomia. Received January 10, 1923. Quoted notes by Professor Tavares da Silva.

A collection of the wheat varieties of Portugal, obtained from the Instituto Superior de Agronomia, Lisbon. Secured for department cerealists.

56199 to 56231. *TRITICUM AESTIVUM* L.

(*T. vulgare* Vill.)

**Common wheat.**

56199 and 56200. "Hard white-bearded wheat."

56199. "No. 5. *Barbella*."

56200. "No. 11. *Rieti*."

56201 to 56208. "Soft wheat."

56201. "No. 30. *Barbella*."

56202. "No. 31. *Beirão*."

56203. "No. 33. *Galêgo barbado*."

56204. "No. 34. *Portuguez*."

56205. "No. 35. *Precoce italiano*."

56206. "No. 36. *Ribeiro*."

56207. "No. 37. *Rieti*."

56208. "No. 38. *Temporão de Coruche*."

56209 to 56217. "Beardless wheat."

56209. "No. 42. *Aurora*."

56210. "No. 43. *Galêgo rapado*."

56211. "No. 44. *Gentil rosso*."

56212. "No. 45. *Manitoba*."

56213. "No. 46. *Môcho de espiga quadrada*."

56214. "No. 48. *Galêgo rapado* × *Vermeljoilo*."

56215. "No. 49. *Fucense* × *Môcho de espiga branca*."

56216. "No. 50. *Rieti* × *Galêgo rapado*."

56217. "No. 51. *Rieti* × *Môcho de espiga branca*."

56218 to 56231. "Bearded wheat."

56218. "No. 52. *Amarelo de barba branca* × *Ribeiro*."

56219. "No. 53. *Amarelo de barba preta* × *Ribeiro*."

56220. "No. 54. *Amarelo de barba preta* × *Ribeiro* (*Sado*)."

56221. "No. 55. *Anafil* × *Galego barbado* (*Belém*)."

56222. "No. 56. *Barbella* × *Santa Martha*."





MA-YUEN, AN EDIBLE SOFT-HULLED VARIETY OF JOB'S-TEARS. (COIX LACRYMA-JOBI MA-YUEN (ROM.) STAFF.; S. P. I. Nos. 56193 TO 56195)

Although an edible soft-hulled form of Job's tears appears to have been known since ancient times in India and also for a considerable time in other parts of Asia, it was not until recent years that horticulturists in the Philippines began to see the possibilities of adlay, as this cereal is known there. Under equal conditions it is more productive than rice, the average yield being about 35 bushels per acre, a yield which could probably be increased 10 or 15 per cent by systematic breeding. Wherever rice can be grown adlay will grow, and where the growing wet season is followed by a dry period adlay is more productive than rice. Furthermore, it should be possible to cultivate and harvest adlay with machinery like that used for wheat. (Photographed at the Lamo Experiment Station, Lamo, Philippine Islands)



ONE OF THE BEST PHILIPPINE FORMS OF MA-YUEN. (*COIX LACRYMA-JOBI* MA-YUEN (ROM.) STAFF.;  
S. P. I. Nos. 56193 TO 56195)

According to P. J. Wester, of the Philippine Bureau of Agriculture, there are at present in the Philippines seven distinct forms of adlay. These vary greatly in size, shape, color, and hardness of the dried grains, the most desirable forms having small grains with very thin hulls. It is claimed for adlay that it is more easily hulled than rice; it is more nutritious and at least as palatable as rice and can be prepared and eaten in the same manner; it can be ground and mixed with wheat flour to make bread of good quality; it is excellent as chicken feed; and, finally, when cracked it makes a delicious breakfast food. As a supplementary crop to rice and corn it appears to have a promising future in the Philippines and elsewhere in the Tropics, and as a substitute for wheat it deserves very careful consideration. (Photographed at the Lamao Experiment Station, Lamao, Philippine Islands)

56199 to 56265—Continued.

56223. "No. 57. *Galêgo barbado* × *Fucense*."
56224. "No. 58. *Galêgo barbado* × *Lobeiro (Ideal)*."
56225. "No. 59. *Lobeiro* × *Barbella*."
56226. "No. 61. *Lobeiro* × *Galêgo barbado*."
56227. "No. 62. *Lobeiro* × *Ribeiro*."
56228. "No. 63. *Santa Martha* × *Barbella*."
56229. "No. 64. *Santa Martha* × *Fucense*."
56230. "No. 65. *Santa Martha* × *Ribeiro*."
56231. "No. 66. *Amarelo barba de branca* × *Ribeiro* × *Ribatejano*."
56232. TRITICUM AESTIVUM × DURUM.  
Hybrid wheat.  
"No. 47. *Anafil* × *Môcho de espiga branca*.  
Beardless wheat."
56233. TRITICUM AESTIVUM × POLONICUM.  
Hybrid wheat.  
"No. 67. *Rieti* × *Galêgo barbado* × *Gigantil*.  
Bearded wheat."
56234. TRITICUM DICOCCUM Schrank. **Emmer**.  
"No. 1. *Spelta*. Hard wheat."
- 56235 to 56259. TRITICUM DURUM Desf.  
Durum wheat.
- 56235 to 56241. "Hard white-bearded wheat."
56235. "No. 4. *Amarelo de barba branca*."
56236. "No. 6. *Branco*."
56237. "No. 7. *Candial*."
56238. "No. 9. *Da Terra*."
56239. "No. 10. *Lobeiro*."
56240. "No. 12. *Santa Martha*."
56241. "No. 14. *Vermelhojoilo*."
- 56242 to 56255. "Hard black-bearded wheat."
56242. "No. 16. *Amarelo de barba preta*."
56243. "No. 17. *Anafil*."
56244. "No. 18. *Aza de Córvo*."
56245. "No. 19. *Cascalvo*."
56246. "No. 20. *Javardo*."
56247. "No. 21. *Marquez*."
56248. "No. 22. *Monjil*."
56249. "No. 23. *Mourisco*."
56250. "No. 24. *Pombinho*."
56251. "No. 25. *Rapinegro*."
56252. "No. 26. *Rubião*."
56253. "No. 27. *Vermelho fino*."
56254. "No. 28. *Durazio rijo*."
56255. "No. 29. *Durazio mollar*."
- 56256 to 56259. "Soft wheat."
56256. "No. 39. *Tremez preto*."
56257. "No. 40. *Tremez rijo*."
56258. "No. 41. *Tremez molle*."

56199 to 56265—Continued.

56259. "No. 60. *Lobeiro* × *Branco*.  
Bearded wheat."
56260. TRITICUM DURUM × TURGIDUM.  
"No. 8. *Canôco*. Hard white-bearded wheat."
56261. TRITICUM POLONICUM L.  
Polish wheat.  
"No. 2. *Gigantil*. Hard wheat."
- 56262 to 56265. TRITICUM TURGIDUM L.  
Poulard wheat.
56262. "No. 3. *Milagre*, ou *Sete-espigas*.  
Hard wheat."
56263. "No. 13. *Sicilio*. Hard white-bearded wheat."
56264. "No. 15. *Alexandre*. Hard black-bearded wheat."
56265. "No. 32. *Egyptico*. Soft wheat."
- 56266 to 56271. ORYZA SATIVA L. Po-  
aceæ.  
From Manila, Philippine Islands. Seeds presented by Adn. Hernandez, director, Bureau of Agriculture. Received January 15, 1923. Quoted notes by Mr. Hernandez.  
Secured for department rice specialists.  
"Seeds of six more or less scented or flavored varieties of rice. The material was raised by this bureau at its Alabang Rice Station, Alabang, Rizal. These rices are white, nonglutinous, and non-bearded. Averages on maturity and yield were taken from results of previous years. The corresponding data for this year (1922) are not yet available."
56266. "(No. 13.) *Macan piña*. Tested 13 years under lowland conditions; matures usually in 139 days. Average yield 2,539 kilograms per hectare (approximately 2,260 pounds per acre)."
56267. "(No. 15.) *Mangusa III*. Tested 3 years under lowland conditions; matures usually in 137 days. Average yield 1,245 kilograms per hectare (approximately 1,110 pounds per acre)."
56268. "(No. 27.) *Antique*. Tested 7 years under lowland conditions; matures usually in 149 days. Average yield 2,889 kilograms per hectare (approximately 2,500 pounds per acre)."
56269. "(No. 31.) *Bong Dua*. Tested 3 years under lowland conditions; matures usually in 164 days. Average yield 1,660 kilograms per hectare (approximately 1,470 pounds per acre)."
56270. "(No. 163.) *Sipot*. Tested 14 years under lowland conditions; matures usually in 137 days. Average yield 2,486 kilograms per hectare (approximately 2,200 pounds per acre)."
56271. "(No. 164.) *Guinalong*. Tested 12 years under lowland conditions; matures usually in 140 days. Average yield 2,340 kilograms per hectare (approximately 2,080 pounds per acre)."
56272. TRIFOLIUM SQUARROSUM L.  
Fabaceæ. **Clover**.  
From Florence, Italy. Seeds presented by Prof. A. Fiori, Reale Istituto Superiore Forestate de Firenze. Received January 16, 1923.  
Introduced for cultural and comparison tests with American clovers.  
An upright or ascending, robust annual with branches up to 30 inches in length, native to the

Mediterranean countries. The pink or white flower heads are oval when young, becoming more elongated later.

**56273 and 56274. RUBUS spp. Rosa-ceæ. Raspberry.**

From Los Banos, Philippine Islands. Seeds presented by Prof. J. E. Higgins, Los Banos College of Agriculture. Received January 16, 1923.

Philippine species of Rubus introduced for breeding experiments with our cultivated blackberries and raspberries.

**56273. RUBUS FRAXINIFOLIUS Poir.**

A scrambling shrub, with branches 2 to 4 meters (6½ to 13 feet) long, which is very common in the mountains from Luzon to Mindanao, Philippine Islands. The stems and leaves are armed with sharp spines, and the white flowers are about 2 centimeters (nearly an inch) across. The bright-red berries 10 to 15 millimeters (about half an inch) in diameter, borne in clusters, are fairly juicy and edible but rather tasteless. (Adapted from *Brown, Wild Food Plants of the Philippines*, p. 63.)

**56274. RUBUS ROSAEFOLIUS J. E. Smith.**

A spiny shrub rarely over 3 feet high, common in the mountains of Luzon, the Bisaya Islands, and Mindanao, Philippine Islands. The red fruits borne singly or in clusters are about 1.5 centimeters (half an inch) in diameter; they are juicy but rather insipid. (Adapted from *Brown, Wild Food Plants of the Philippines*, p. 66.)

**56275 to 56281.**

From China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 15, 1923. Quoted notes by Mr. Rock.

**56275. MALUS sp. Malaceæ. Apple.**

"(No. 7003. November, 1922.) A tree 30 to 40 feet high occurring wild along water-courses in the Kuyung Mountains north of Tenguueh at an altitude of 7,000 feet. Probably a good stock plant."

**56276. PHOTINIA sp. Malaceæ.**

"(No. 7002. November, 1922.) A roseaceous tree 30 to 40 feet tall, with a dense crown, collected in the Kuyung Mountains at an altitude of 6,000 feet. The narrow pale-green leaves are toothed, and the flowers, said to be white, are borne in large panicles about 5 inches across. The fruits are deep orange red."

**56277 to 56280. PYRUS spp. Malaceæ. Pear.**

**56277. PYRUS sp.**

"(November, 1922.) A wild pear found in the mountains near Puerifu at an altitude of 6,000 feet. The large mellow edible fruits are 3 to 4 inches in diameter."

**56278. PYRUS sp.**

"(No. 6735. November 20, 1922.) A large hardy tree 60 to 70 feet tall, which grows in the mountains beyond Taho, north of Tenguueh, at an altitude of 7,000 feet. The leaves are large, oblong, and acuminate, and the numerous reddish brown, somewhat acid fruits are 2½ inches in diameter."

**56279. PYRUS sp.**

"(No. 6736. November 21, 1922.) A tree 30 feet high with a spreading crown, found at an altitude of 6,500 feet in a valley in an oak forest along a brook beyond Chichnmachin, a day's journey north of Tenguueh. This species has small oval leaves and globose, greenish brown fruits the size of bullets."

**56275 to 56281—Continued.**

**56280. PYRUS sp.**

"(No. 7001. November, 1922.) A large tree 60 feet tall with a huge ascending crown, found in sandy soil in an oak forest in the Kuyung Mountains north of Tenguueh at an altitude of 7,000 feet. The leaves are large, oblong-lanceolate, with a reddish tinge. The numerous globose, greenish brown fruits are 2½ inches in diameter."

**56281. ROSA sp. Rosaceæ.**

**Rose.**

"(No. 6738. November, 1922.) A large climbing rose growing wild on the slopes of the mountains near Mengka, four days' journey west of Tenguueh, at an altitude of 6,000 feet, in a region where frost and ice are common in December. The white flowers are in large terminal corymbs, and the fruits are oval and reddish."

**56282. POLYALTHIA LONGIFOLIA (Sonner.) Benth. and Hook. Annonaceæ.**

From Honolulu, Hawaii. Seeds presented by Dr. H. L. Lyon, in charge, department of botany and forestry, experiment station of the Hawaiian Sugar-Planters' Association. Received January 15, 1923.

A large, handsome, erect evergreen tree which is wild in the drier parts of Ceylon and southeastern India and, because of its ornamental appearance and suitability as a shade tree, is commonly planted in avenues along roads in Bengal and South India. The ovoid purple fruits ripen during the rainy season, June to October; these are not eaten except in times of scarcity. The wood is white or whitish yellow, light and very flexible, and used for making matches, pencils, boxes, etc. (Adapted from *Watt, Dictionary of the Economic Products of India*, vol. 6, pt. 1, p. 313.)

For previous introduction, see S. P. I. No. 53923.

**56283. LESPEDEZA STRIATA (Thunb.) Hook. and Arn. Fabaceæ.**

**Japanese clover.**

From Kobe, Japan. Seeds presented by E. R. Dickover, American consul in charge. Received January 19, 1923.

Introduced for the use of department specialists engaged in breeding forage plants.

**56284. PANICUM MAXIMUM Jacq. Poaceæ. Guinea grass.**

From Marti, Camaguey, Cuba. Seeds purchased from Jose Sanchez Moran. Received January 24, 1923.

Introduced for the use of specialists engaged in forage-crop investigations.

A perennial erect bunch grass 4 to 6 feet tall, with broad, flat leaves and open spreading panicles of spikelets. It is a native of Africa introduced into tropical America, where it is cultivated for forage, furnishing pasture and green feed.

**56285 to 56287. TRIFOLIUM spp. Fabaceæ.**

From Aarhus, Denmark. Seeds presented by Fr. Dreyer, Aarhus, through S. Sørensen, agricultural adviser to the Danish Government, Washington, D. C. Received February 6, 1923. Quoted notes by Mr. Sørensen.

**56285. TRIFOLIUM PRATENSE L. Red clover.**

"*Hersnap*. This represents our best strain of red clover, and in several tests at the Danish State Experiment Station this gave about 20 per cent more hay than the usual commercial varieties."

For previous introduction, see S. P. I. No. 44107.

56285 to 56287—Continued.

56286 and 56287. *TRIFOLIUM REPENS* L.  
White clover.

"The white clovers represent two of our best strains, one developed on the island of Fyn and the other on the mainland of Jutland. Both of these are very popular in Denmark."

56286. *Morso.*

56287. *Stryno.*

56288 to 56386.

From China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received February 2, 1923. Quoted notes by Mr. Rock.

56288 to 56291. *ACER* spp. *Aceraceae*. **Maple.**

56288. *ACER DAVIDI* Franch.

"(No. 6799. October, 1922.) A very attractive maple 50 to 60 feet in height, found on the Likiang Snow Range at an altitude of 10,000 feet. It has large oval heart-shaped, coarsely toothed leaves and long pendent clusters of samaras."

56289. *ACER* sp.

"(October, 1922.) A tall, stately tree 50 to 80 feet high, with a straight trunk, found among limestone boulders back of Nguluku on the Likiang Snow Range at an altitude of 9,600 feet. The rather small leaves are 5-lobed, and the samaras are in erect spikes."

56290. *ACER* sp.

"(No. 6806. October, 1922.) A tall tree 70 to 80 feet high, with a dense round crown, from the western slopes of the Likiang Snow Range on the Ashi Road at an altitude of 11,000 feet. The leaves are large and 3-lobed, and the samaras are borne in stout drooping clusters."

56291. *ACER* sp.

"(No. 6834.) A handsome evergreen maple 70 to 80 feet in height, with a huge crown, found at an altitude of 8,000 feet in the forest between Hpunkaw and Mengka, one and a half days' travel from the Burmese Kachin Hills. The trunk is more than 3 feet in diameter, and the branches descend almost to the ground."

56292. *BENZONIN* sp. *Lauraceae*.  
(*Lindera* sp.)

"(Nos. 6723 and 7010. November, 1922.) A tree 35 feet high, with a spreading crown, common around Tengyueh and along the Taping River. The trunk is sometimes a foot or more in diameter, usually smaller; the leathery aromatic leaves are dark green and glossy. From the scarlet 1-seeded fruits, borne in short clusters, is obtained a white oily liquid used to make a yellow wax. This wax is used for burning, for keeping leather soft, and for other household purposes."

56293. *BERBERIS DICTYOPHYLLA* Franch.  
*Berberidaceae*. **Barberry.**

"(No. 6804. October, 1922.) A spiny shrub 6 to 8 feet high, found on alpine meadows of the Likiang Snow Range at an altitude of 12,000 feet. It is very ornamental, with yellow flowers and red fruits."

For previous introduction, see S. P. I. No. 55718.

56294. *BUDDLEIA FORRESTII* Diels. *Loganiaceae*.

"(No. 6816. October, 1922.) A very attractive shrub found only in limestone soil on the Likiang Snow Range at an altitude of 10,000 feet. It has white woolly leaves and spikes of lavender-blue flowers."

56288 to 56386—Continued.

56295. *BUXUS* sp. *Buxaceae*. **Box.**

"(No. 6793. October, 1922.) A very handsome shrub about 5 feet high, which grows among limestone boulders on the Likiang Snow Range at an altitude of 11,000 feet. The small elliptical leaves are bright green."

56296 to 56300. *CASTANOPSIS* spp. *Fagaceae*.  
**Chestnut.**

56296. *CASTANOPSIS* sp.

"(No. 6751. October, 1922.) A tall tree 70 to 80 feet in height, found on the slopes of the Likiang Snow Range at an altitude of 10,000 feet. The thick leathery leaves are silvery beneath, and the small edible nuts are sweet."

56297. *CASTANOPSIS DELAVAYI* Franch.

"(No. 6768. November 30, 1922.) One of the finest and largest species of *Castanopsis* in Yunnan; it reaches 80 feet in height, with trunks 2 to 3 feet in diameter, and is found on the summit ridge of the Shweli-Salwin Divide at an altitude of 8,000 feet. It is a fine timber tree, free from disease. The small brown nuts are edible and sweet."

56298. *CASTANOPSIS* sp.

"(No. 6819. November 30, 1922.) A tree 50 to 80 feet high, with a trunk 4 feet in diameter, found on the Salwin Ridge at an altitude of 8,000 feet. The dark-green elliptical leaves are brown beneath, and the small black nuts are edible and sweet."

56299. *CASTANOPSIS* sp.

"(No. 7006. Kuyung. November, 1922.) A tree 40 to 50 feet in height, with a trunk 1 to 2 feet in diameter, which grows in the mountains north of Tengyueh at altitudes of 7,000 to 8,000 feet. The broad oval leaves are pointed, with the upper half toothed, and the spines on the burs are arranged in concentric rings. The small nuts are edible and sweet."

56300. *CASTANOPSIS* sp.

"(No. 7007. Kuyung. November, 1922.) A tree 60 to 80 feet high, with a high trunk 2 to 3 feet in diameter, found in the mountains north of Tengyueh at altitudes of 7,000 to 8,000 feet. The small elliptical dark-green leaves are thick and leathery, and the burs, an inch in diameter, are covered with branched spines. Each bur contains two or three brown, pubescent, sweet edible nuts."

56301 and 56302. *CORNUS CAPITATA* Wall.  
*Cornaceae*. **Bentham's cornel.**

"A tree 30 feet high, with a trunk a foot or more in diameter, or at times shrubby. The fruits, about 2 inches in diameter, are strawberrylike in shape and color and have sweet yellow edible flesh. They are very popular with the natives and are often sold in the markets."

For previous introduction, see S. P. I. 56085.

56301. "(No. 6791. October, 1922.) From the lower slopes of the Likiang Snow Range at an altitude of 9,000 feet."

56302. "(No. 7008. Kuyung. November, 1922.) From the mountains north of Tengyueh at an altitude of 7,000 feet."

56303 and 56304. *COTONEASTER* spp. *Mala-ceae*.

56303. *COTONEASTER* sp.

"(No. 6742. November 29, 1922.) A stiff, erect, very ornamental shrub 3 to 4

## 56288 to 56386—Continued.

feet in height, found on the highest point of the Shweli-Salwin watershed (altitude 11,000 feet), at a place called Hsuehshang [summit of snow mountain], in company with rhododendrons and canebra. Here during the winter months the mountains are covered with snow, and ice covers the pools and brooks all day. The reddish leaves are small and roundish, and the oval scarlet persistent berries are half an inch in diameter."

## 56304. COTONEASTER sp.

"(No. 6789. October, 1922.) A stout ornamental prostrate shrub which creeps over limestone rocks on the Likiang Snow Range at an altitude of 10,000 feet. The very small elliptical leaves are dark green, and the small berries are red."

## 56305. CUPRESSUS sp. Pinacæ. Cypress.

"(No. 6802. Peshwe. October, 1922.) A tall tree 40 to 50 feet high, with a stout trunk, found on margins of meadows north of Ngulukeu at an altitude of 11,000 feet."

## 56306 and 56307. DEUTZIA spp. Hydrangeacæ.

## 56306. DEUTZIA sp.

"(No. 6813. October, 1922.) A very ornamental shrub, with purplish white flowers, found along stream beds on the Likiang Snow Range at altitudes of 10,000 to 11,000 feet."

## 56307. DEUTZIA sp.

"(No. 7752.) From the Likiang Snow Range."

## 56308 to 56310. DIOSPYROS spp. Diospyracæ. Persimmon.

## 56308. DIOSPYROS sp.

"(Tengyueh. November 24, 1922.) A large spreading tree 50 feet tall, with a huge crown, found in the vicinity of Tengyueh, where it freezes every night during the cold season. It is a fine shade tree. The yellow fruits are the size of cherries."

## 56309. DIOSPYROS sp.

"(No. 6787. October, 1922.) A wild persimmon which grows as a tall, spreading tree on the dry slopes back of Likiang at an altitude of 8,500 feet. The small oval fruits are black."

## 56310. DIOSPYROS sp.

"(No. 6805. Shiku, Yangtze River. October, 1922.) A large spreading tree which bears black, sweet edible fruits the size of a half dollar."

## 56311 to 56313. EUONYMUS spp. Celastracæ.

## 56311. EUONYMUS PORPHYREUS Loes.

"(No. 6784. October, 1922.) An ornamental shrub 5 to 6 feet high, with red berries, found on the Likiang Snow Range at an altitude of 12,000 feet."

## 56312. EUONYMUS sp.

"(No. 6809. October, 1922.) A tree 25 feet tall found among limestone rocks on the lower slopes of the Likiang Snow Range at an altitude of 9,000 feet. The leaves are oval heart shaped and the fruits red and yellow."

## 56313. EUONYMUS sp.

"(No. 6812. October, 1922.) An ornamental tree 30 to 40 feet in height, with rich-green, narrow, sharp-pointed leaves and red fruits. It grows on the Likiang Snow Range at an altitude of 12,000 feet."

## 56288 to 56386—Continued.

## 56314. ILEX sp. Aquifoliacæ. Holly.

"(No. 6781. October, 1922.) A wild holly from the Likiang Snow Range at about 12,000 feet altitude. It is an ornamental tree 25 feet high, with leathery dark-green leaves and small yellowish berries."

## 56315. INDIGOFERA PENDULA Franch. Fabacæ.

"(No. 6798. October, 1922.) An exceedingly ornamental shrub 10 to 15 feet high, with long racemes of bluish purple flowers, found on the Likiang Snow Range at an altitude of 10,000 to 11,000 feet."

## 56316. KETELEERIA sp. Pinacæ.

"(No. 6321. October, 1922.) A handsome tree 50 feet in height, with light-green foliage and long oblong cones, found on the Sungkwe Pass, Hoching Range, two days' travel from Likiang, at an altitude of 11,000 feet."

## 56317 and 56318. LIGUSTRUM spp. Oleacæ. Privet.

## 56317. LIGUSTRUM IONANDRUM Diels.

"(No. 6810. October, 1922.) A very compact shrub 10 to 12 feet high, found among limestone boulders back of Ngulukeu on the Likiang Snow Range at an altitude of 10,000 feet. It has elliptical leaves and short terminal clusters of cream-colored fragrant flowers."

## 56318. LIGUSTRUM sp.

"(No. 6803. October, 1922.) A tree 40 to 50 feet high, with a trunk 1 to 2 feet in diameter, which grows along water-courses on the Likiang Snow Range at an altitude of 8,500 feet. The small fragrant cream-colored flowers are in large panicles."

## 56319. LITSEA sp. Lauracæ.

"(No. 6814. October, 1922.) An ornamental aromatic shrub 10 to 15 feet high, found on the Likiang Snow Range at an altitude of 10,000 to 11,000 feet."

## 56320 to 56325. MALUS spp. Malacæ.

Apple.

## 56320 and 56321. MALUS YUNNANENSIS (Franch.) C. Schneid.

"A tree 30 to 40 feet high, which grows among limestone boulders along water-courses on the Likiang Snow Range at altitudes of 10,000 to 12,000 feet. The large oval heart-shaped, coarsely toothed leaves are hairy beneath and the yellowish crimson fruits, an inch in diameter, are in large clusters. One of the hand-somest trees of the Likiang Snow Range."

## 56320. "(No. 6760. October, 1922.)"

## 56321. "(No. 6764. October, 1922.)"

## 56322. MALUS sp.

"(No. 6753. October, 1922.) A tree 60 to 80 feet in height, with stout straight branches, which grows on the slopes of the Likiang Snow Range at an altitude of 12,000 feet. The dark-green leaves are silvery beneath, and the oval yellow fruits have sour fragrant flesh and large seeds. The tree is very ornamental."

## 56323. MALUS sp.

"(No. 6758. October, 1922.) A tree 35 to 40 feet high which is found on the Likiang Snow Range at altitudes of 10,000 to 11,000 feet. The reddish green, strongly veined leaves are whitish beneath, and the numerous fruits are in large clusters."

56288 to 56386—Continued.

56324. *MALUS YUNNANENSIS* (Franch.) C. Schneid.

"(No. 6762. October, 1922.) A tree 40 feet high, with a dense crown, found on the lower slopes of the Likiang Snow Range among limestone boulders along watercourses at an altitude of about 10,000 feet. The large leaves are grayish hairy beneath."

56325. *MALUS* sp.

"(No. 6821. November 30, 1922.) A hardy tree 15 to 20 feet in height, found in dense forest on the Salwin Ridge at an altitude of 8,600 feet. The oblong leaves have red veins and petioles and the calyx portion of the oval yellow fruits is drawn out into a beak. The fruit flesh is firm and sour."

56326 and 56327. *MECONOPSIS* spp. Papaveraceae.

56326. *MECONOPSIS INTEGRIFOLIA* (Maxim.) Franch.

"(No. 6777. October, 1922.) A fine alpine plant 2 feet or more in height found rather commonly at altitudes of 14,000 to 14,500 feet among limestone boulders on the Likiang Snow Range. The leaves are linear, with the basal ones forming a rosette, and covered with red hairs. The large bright-yellow flowers are 4 inches across."

For previous introduction, see S. P. I. No. 55957.

56327. *MECONOPSIS RUDIS* Prain.

"(No. 6797. October, 1922.) An alpine plant found on limestone gravel on the Likiang Snow Range at altitudes above 16,000 feet. The glaucous leaves are covered with red spines and the satiny blue flowers, 2 inches across, completely cover the spikes, which are 2 feet in length."

56328 and 56329. *OLEA* sp. Oleaceae.

56328. *OLEA* sp.

"(No. 6737. November 21, 1922.) A large tree 50 feet high, with a trunk a foot in diameter and whitish bark, which grows wild in the forests beyond Wolung and Chienmachin, north of Tengyueh. The narrowly oblong, leathery leaves are dark green, and the small oval, bluish black, juicy fruits are borne in clusters below the leaves."

56329. *OLEA* sp.

"(No. 6741. November 29, 1922.) A tree 30 feet or more in height, found in the Shweli Valley, two days' travel north-east of Tengyueh near Chiangtso and Chuchi. It has elliptical leaves and small oval, bluish black, juicy fruits."

56330 and 56331. *PHOTINIA* spp. Malaceae.

56330. *PHOTINIA* sp.

"(No. 6800. October, 1922.) A tree 25 feet high from the western slopes of the Likiang Snow Range, in the Ashi Road forest, at an altitude of 10,600 to 11,000 feet. The flowers are white and the small orange-red fruits are in large terminal panicles."

56331. *PHOTINIA* sp.

"(No. 6815. October, 1922.) An ornamental shrub 5 to 6 feet high, from limestone meadows in the Likiang Snow Range. It has very narrow leaves and clusters of dark carmine fruits."

56288 to 56386—Continued.

56332. *PIERIS* sp. Ericaceae.

"(No. 7660. November 27, 1922.) A shrub 6 to 8 feet high with white flowers, collected on the summit of Hsuehsanting at an altitude of 11,000 feet."

56333. *PINUS ARMANDI* Franch. Pinaceae.

Pine.

"(No. 6792. Likiang. October, 1922.) A pine tree 90 feet or more tall, with a straight trunk, common at altitudes above 8,000 feet in the northern part of Yunnan; also from the Black River Valley to Talifu and Likiang."

For previous introduction, see S. P. I. No. 45914.

56334. *PRIMULA FORRESTERI* Balf. f. Primulaceae.

Primrose.

"(No. 6811. October, 1922.) A perennial plant which becomes 50 years or more in age, with a thick woody rootstock, found among rocks and under trees in rich soil and also among limestone boulders on the Likiang Snow Range, at an altitude of 11,000 to 12,000 feet. The large basal leaves have a fresh-apple odor and the rich orange-yellow flowers are in large umbels."

For previous introduction, see S. P. I. No. 48361.

56335. *PRUNUS* sp. Amygdalaceae. Cherry.

"(No. 6782.) A tree 35 to 40 feet high, which grows on the road from Ashi to the Yangtze River, Likiang Snow Range, at an altitude of 10,000 feet. The globose, bluish black fruits are in drooping clusters."

56336 to 56347. *PYRUS* spp. Malaceae. Pear.

56336. *PYRUS FASHIA* Buch.-Ham.

"(November, 1922.) A handsome tree 30 feet high, with a round crown and dark-green heart-shaped leaves, which grows in southern Yunnan in the valleys south of Puerhu. The yellowish brown globose pears are the size of marbles. The seeds were secured through Miss Clara Peterson, of the Puerhu Mission."

For previous introduction, see S. P. I. No. 54998.

56337. *PYRUS* sp.

An unlabeled packet of pear seeds from Yunnan.

56338. *PYRUS* sp.

"(No. 6752. Chinhaitze. October, 1922.) A sturdy tree 30 to 40 feet in height, with a dense crown and ascending branches, which grows along watercourses on the eastern side of the Likiang Snow Range. The small globose fruits are crimson when ripe."

56339. *PYRUS* sp.

"(No. 6754. October, 1922.) A wild pear from the lower slopes of the Likiang Snow Range, where it grows at an altitude of 9,600 feet and forms a tree 30 to 40 feet high. The oval pealike fruits are crimson when ripe."

56340. *PYRUS* sp.

"(No. 6757. October, 1922.) A very handsome tree 35 to 40 feet high, which grows among limestone boulders along watercourses on the lower slopes of the Likiang Snow Range at an altitude of 10,000 feet. The handsome leaves are dark green above and white beneath, with serrate margins and sharp points, and the fruits are small, oval, and red."

## 56288 to 56386—Continued.

## 56341. PYRUS sp.

"(No. 6759. Ganhaitze. October, 1922.) A tree very similar to the preceding [S. P. I. No. 56340] but with few fruits, which are pear shaped and yellow. It grows at an altitude of 10,000 feet on the Likiang Snow Range."

## 56342. PYRUS sp.

"(No. 6761. October, 1922.) A very ornamental tree 30 to 40 feet in height, which grows along watercourses among limestone boulders on the Likiang Snow Range. It has oval dark-green leaves, grayish beneath, and red and yellow fruits the size of bullets."

## 56343. PYRUS sp.

"(No. 6763. October, 1922.) A tree 40 feet high from the Likiang Snow Range, where it grows at an altitude of 14,000 feet. The large oblong, coarsely toothed leaves are dull green above and white beneath, and the small globose yellow fruits, the size of bullets, are in corymbs."

## 56344. PYRUS sp.

"(No. 6765. October, 1922.) A wild pear which grows on the road from Ashi to the Yangtze River, Likiang Snow Range, at an altitude of 10,000 feet. It is a tree 30 feet high, with large smooth dark-green leaves and fruits 2½ inches in diameter, yellow, with small russet rings and spots."

## 56345. PYRUS sp.

"(No. 6766. October, 1922.) A tree 30 feet high, with small crimson fruits, found along stream beds among limestone boulders on the Likiang Snow Range north of Ngulukeu, at an altitude of 10,000 feet."

## 56346. PYRUS sp.

"(No. 6767. Likiang. October, 1922.)" Seeds of a domesticated pear.

## 56347. PYRUS sp.

"(No. 6823. Chinho. October, 1922.) A wild pear collected two days' travel south of Likiang, where it grows as a tree 30 to 40 feet in height, with oval-elliptic leaves and small, spotted, russet-brown fruits the size of bullets. This is used as a stock plant."

## 56348 to 56354. QUERCUS spp. FAGACEÆ. Oak.

## 56348. QUERCUS sp.

"(No. 6748. October, 1922.) An oak tree 30 to 40 feet high, found in the forest on the road to Ashi north of Likiang at an altitude of 12,000 feet. The leaves are large, obovate, and coarsely toothed; the acorns are not bitter."

## 56349. QUERCUS sp.

"(No. 6794. Ashi. October, 1922.) A tree 50 feet tall, with a trunk 3 feet in diameter, found on the Likiang Snow Range in dry regions near the Yangtze River at an altitude of 9,000 feet. The small pale-green leaves are obovate, and the small acorns have papery involucre."

## 56350. QUERCUS sp.

"(No. 6817. October, 1922.) A tree 50 to 60 feet tall, from the western slopes of the Likiang Snow Range on the road from Ashi to the Yangtze River, at an altitude of 11,000 feet. It has large sessile, oblong-oval lacinate leaves and small edible sweet acorns."

## 56288 to 56386—Continued.

## 56351. QUERCUS sp.

"(No. 6822. November 30, 1922.) A tree 30 to 40 feet high, which grows on the Salwin Ridge at an altitude of 8,000 feet. The leaves are dark glossy green, and the obovoid bitter acorns are in spikes several inches long."

## 56352. QUERCUS sp.

"(No. 7004. Kuyung. November, 1922.) A tall tree, 70 to 80 feet in height, with trunks 3 to 4 feet in diameter, which grows in sandy soil in the mountains north of Tengyueh, at an altitude of 7,500 feet. The numerous acorns are borne in dense spikes 5 or 6 inches long, the involucre inclosing the acorn."

## 56353. QUERCUS sp.

"(No. 7005. Kuyung. November, 1922.) Very similar to the preceding [S. P. I. No. 56352], except that the acorns are inclosed in a truncate involucre. The tree, 70 to 80 feet tall with trunks 3 to 4 feet in diameter, grows in sandy soil in the mountains north of Tengyueh at an altitude of 7,500 feet."

## 56354. QUERCUS sp.

"(No. 7009. Kuyung. November, 1922.) A tall tree 70 to 80 feet in height, with large straight trunks 3 or 4 feet in diameter, which grows in the mountains north of Tengyueh at an altitude of 7,000 to 8,000 feet. The acorns are inclosed in conical involucre and are borne in stout, densely packed spikes."

## 56355 to 56364. RHODODENDRON spp. ERICACEÆ.

## 56355. RHODODENDRON DELAVAYI Franch.

"(Nos. 3012 and 6743. November 27, 1922.) A small tree 15 to 20 feet or more in height, common throughout Yunnan; these seeds were collected on the Salwin-Shweli watershed at an altitude of 8,000 feet. The stiff, spreading narrow leaves are brownish beneath, and the crimson flowers are in large terminal heads."

## 56356. RHODODENDRON FORTUNEI Lindl.

"(No. 6829. October, 1922.) A shrub or small tree 15 to 20 feet in height, with a trunk a foot in diameter, which grows on the Likiang Snow Range at altitudes of 9,000 to 11,000 feet. The leaves are large and smooth and the large, exceedingly handsome, fragrant light-pink flowers are in large terminal clusters."

## 56357. RHODODENDRON HELIOLEPIS Franch.

"(No. 6828. October, 1922.) A beautiful compact shrub 10 to 15 feet high, which grows on the edge of alpine meadows in large groves at an altitude of 12,500 feet. In early spring the plant is one mass of flowers; these are lavender with the lower lip purple spotted."

## 56358. RHODODENDRON TALIENSE Franch.

"(No. 6832. October, 1922.) A shrub 15 feet high, which grows on the upper slopes of the Likiang Snow Range at altitudes of 15,000 to 15,500 feet among limestone boulders. The leaves are large and whitish mealy beneath, and the large light-pink flowers are in terminal clusters."

## 56359. RHODODENDRON sp.

An unlabeled packet of rhododendron seeds.



56288 to 56386—Continued.

56360. RHODODENDRON sp.

"(No. 6744. November 28, 1922.) A shrub or small tree which grows on the summit of the Salwin Ridge (Shweli-Salwin Divide) at altitudes of 10,000 to 11,000 feet, in a forest one stage from Chiangso. The pale-green oblong leaves are whitish beneath, and the flowers, which vary from pink to red, are terminal. The fruits are black and hairy."

56361. RHODODENDRON sp.

"(No. 6745. Hsuehshanting. November 28, 1922.) A shrub 5 to 10 feet high, dense brownish woolly throughout, which is not uncommon on the summit of the Salwin-Shweli watershed at altitudes of 8,000 to 10,000 feet. The flowers are red and are borne at the ends of the branches."

56362. RHODODENDRON sp.

"(No. 6826. October, 1922.) A very handsome shrub 10 to 12 feet high, which occurs on the edge of alpine meadows on the Likiang Snow Range at altitudes of 14,000 to 15,000 feet. The leaves are small and elliptical, and the rich purple flowers an inch and a half wide are in terminal clusters."

56363. RHODODENDRON sp.

"(No. 6827. October, 1922.) A shrub 6 to 10 feet high, found among limestone boulders on the Likiang Snow Range at an altitude of 11,000 feet. The leaves are small and elliptical, white beneath when young, and the flowers, pink with spotted red lower lips, are in terminal clusters."

56364. RHODODENDRON sp.

"(No. 6830. October, 1922.) A shrub 2 feet high, found in rather dry situations in pine forests on the Likiang Snow Range at an altitude of 11,000 feet. It has small elliptical leaves and small but handsome bluish purple flowers."

56365 and 56366. RIBES spp. Grossulariaceæ.

56365. RIBES sp.

Currant.

"(No. 6778. October, 1922.) A shrub 5 feet high, with maplelike leaves and long drooping racemes of large oval carmine fruits which are edible, with a sweet acid flavor. This shrub grows on the Likiang Snow Range at an altitude of 15,000 feet."

56366. RIBES sp.

"(No. 6780. October, 1922.) A shrub 4 feet high which grows on the Likiang Snow Range at an altitude of 15,000 feet. The leaves are small and maplelike, and the small oval black fruits, crowned by the persistent calyx, are insipid."

56367 and 56368. ROSA spp. Rosaceæ. Rose.

56367. ROSA sp.

"(No. 6747. November, 1922.) A handsome climbing shrub 16 or 18 feet high, from the Likiang Snow Range at an altitude of 11,000 feet, near Yulungtsuin. The white flowers are 2 inches across and the fruits are oval and red."

56368. ROSA sp.

"(No. 6795. October, 1922.) A shrub 8 feet high, with small white flowers and round red fruits, found along water-courses back of Ngulukeu on the Likiang Snow Range at altitudes of 9,000 to 10,000 feet."

56288 to 56386—Continued.

56369. RUBUS LUTESCENS Franch.

"(No. 6749. October, 1922.) This is perhaps the best raspberry of the Likiang Snow Range, where it grows as a small shrub a foot or two high on the western slopes at an altitude of 15,000 feet. The leaves are small and the large deep orange-yellow berries are sweet and very delicious."

56370. SCHIZANDRA AXILLARIS (Blume) Hook. f. and Thoms. Magnoliaceæ.

"(No. 6825. October, 1922.) An ornamental climber which occurs in fir forests on the Likiang Snow Range at altitudes of 11,500 to 12,000 feet. The axillary flowers are magenta in color."

56371 and 56372. SMILAX spp. Smilacaceæ. Smilax.

56371. SMILAX sp.

"(No. 6746. November 29, 1922.) A handsome, climbing, thorny shrub which grows on the Shweli-Salwin Divide, in open scrub forest at altitudes of 6,000 to 7,000 feet. The leaves are small and oval and the berries scarlet."

56372. SMILAX sp.

"(No. 6808. October, 1922.) An attractive climber with oblong glaucous leaves and red berries, found on dry slopes among pines on the Likiang Snow Range at an altitude of 10,000 feet."

56373 to 56376. SORBUS spp. Malaceæ. Mountain ash.

56373. SORBUS sp.

"(No. 6775. October, 1922.) An ornamental tree 25 feet high, with small pinnate leaves, which grows on the road from Ashi to the Yangtze River, Likiang Snow Range, at an altitude of 10,000 feet. The white fruits are in large clusters."

56374. SORBUS sp.

"(No. 6776. October, 1922.) An ornamental tree 25 to 30 feet high, with large pinnate leaves, which grows on the road from Ashi to the Yangtze River, Likiang Snow Range, at altitudes of 10,000 to 11,000 feet. The white fruits are in large clusters."

56375. SORBUS sp.

"(No. 6779. October, 1922.) A shrub 15 or 16 feet high, found on the Likiang Snow Range at an altitude of about 12,000 feet. The leaves are narrowly pinnate, and the red fruits are in large clusters."

56376. SORBUS sp.

"(No. 6785. October, 1922.) A tree 20 feet in height which grows in forests of *Abies forrestii* on the Likiang Snow Range at an altitude of 12,000 feet. It is very ornamental because of the large clusters of round red berries."

56377. TILIA sp. Tiliaceæ.

"(No. 6801. October, 1922.) A tree 35 to 40 feet high, with large heart-shaped leaves and fragrant flowers, found along water-courses among limestone boulders on the Likiang Snow Range at an altitude of 11,000 to 12,000 feet."

56378. VACCINIUM sp. Vacciniaceæ.

"(No. 6796. October, 1922.) A bushy shrub 2 to 3 feet high, found under pine trees on the Likiang Snow Range at an altitude of 10,000 to 11,000 feet. The small black berries are edible."

## 56288 to 56386—Continued.

56379 to 56385. *VIBURNUM* spp. Caprifoliaceæ.

56379. *VIBURNUM* sp.

"(No. 6770. October, 1922.) A handsome shrub 15 feet high from alpine meadows and steep slopes of the Likiang Snow Range, where it grows at an altitude of 12,500 feet. It has small wedge-shaped leaves and large corymbs of crimson or carmine berries."

56380. *VIBURNUM* sp.

"(No. 6771. October, 1922.) A very attractive shrub 4 feet in height with maplelike leaves, found growing among limestone boulders in the Likiang Snow Range at an altitude of 15,000 feet. The oval crimson berries are in loose panicles."

56381. *VIBURNUM* sp.

"(No. 6772. October, 1922.) A handsome shrub or small tree 15 feet high, with smooth oval leaves and small drooping clusters of scarlet berries, found on the slopes of the Likiang Snow Range at an altitude of 12,000 feet."

56382. *VIBURNUM* sp.

"(No. 6773. October, 1922.) A shrub 4 or 5 feet high which grows on the eastern end of the Likiang Plain among limestone rocks, at an altitude of 10,000 feet. It has small hairy oval leaves and large drooping panicles of rich carmine berries."

56383. *VIBURNUM* sp.

"(No. 6774. October, 1922.) An attractive shrub 6 to 10 feet high, with large hairy, broadly oval leaves and large clusters of carmine-crimson berries. It grows in alpine meadows on the Likiang Snow Range at an altitude of 11,000 feet."

56384. *VIBURNUM* sp.

"(No. 6786. October, 1922.) A tall shrub 12 to 15 feet in height, which grows at an altitude of 12,000 to 13,000 feet on the Likiang Snow Range. The leaves are smooth and uniformly green, and the crimson berries are in large terminal corymbs."

56385. *VIBURNUM* sp.

"(No. 6820. November 30, 1922.) An exceedingly handsome shrub 20 feet tall, with large oval leaves and huge terminal clusters of large transparent scarlet berries, found on the summit of the Salwin Ridge at an altitude of 8,000 feet. The juice is used by the natives in pickling turnip leaves."

## 56386. (Undetermined.)

"(No. 6831. October, 1922.) A handsome tree 15 to 20 feet high, which grows on the western slopes of the Likiang Snow Range at an altitude of 11,000 feet. The large oblong leaves are brownish woolly beneath, and the deep pink or red flowers are in large corymbs."

56387. *MEIBOMIA* sp. Fabaceæ.

From Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received February 7, 1923.

"(No. 6783. October, 1922.) An ornamental bush 10 feet high, with very attractive deep pink flowers, found on the western and eastern slopes of the Likiang Snow Range at an altitude of 10,000 feet."

56388. *FESTUCA OVINA* NOVO-ZELANDIÆ Hack. Poaceæ.**Fescue tussock grass.**

From Stanley, Falkland Islands. Seeds presented by the Colonial Secretary. Received January 18, 1923.

Introduced for testing as a forage plant.

A densely tufted perennial grass with culms 12 to 20 inches high and erect, very narrow, cylindrical, sharply pointed rough leaves almost as long as the culms. This grass is native to North Island, New Zealand. (Adapted from *Cheeseman, Manual of the New Zealand Flora*, p. 917.)

56389. *DIOSPYROS KAKI* L. f. *Diospyraceæ*. **Kaki.**

From Yokohama, Japan. Seeds purchased from the Yokohama Nursery Co. Received February 12, 1923.

A semiwild variety with a long pointed fruit used by Japanese nurserymen as a stock plant on which to graft the cultivated kakis.

## 56390 to 56398.

From China. Seeds presented by C. A. Reed, Bureau of Plant Industry. Received January 10, 1923. Quoted notes by Mr. Reed, unless otherwise stated.

56390. *AESCULUS WILSONII* Rehder. *Æsculaceæ*. **Horsechestnut.**

"(No. 22c. Peking.) Obtained from J. Hers, secretary general, Lunghai Railway Co."

A horsechestnut native to Szechwan and Hupeh, China, which is very closely allied to *Aesculus chinensis*, from which it differs only in a few minor characters. It is a large tree with leaves which are downy when young and white flowers borne in racemes which sometimes become 16 inches in length. The burs are rough but not spiny.

56391. *ARACHIS HYPOGAEA* L. *Fabaceæ*. **Peanut.**

"(No. 45ge. Hangchow, Chekiang.) Typical specimens obtained in the market."

56392 to 56397. *CASTANEA MOLLISSIMA* Blume. *Fagaceæ*. **Chestnut.**

56392. "(No. 17c. Hsinchuang, Chihli.) Nuts obtained from wild trees growing about 32 li (about 9 miles) north of the Ming tombs, among walnut trees of various species. The nuts are of fair size and quality, although not equal to those of S. P. I. No. 56397 from the Lanchow-Changli district, Chihli."

56393. "(No. 18c. Anshan, Chihli. October, 1922.) Nuts obtained on the streets of Anshan; a railroad station between Lanchow and Changli; perhaps originally from north of Lanchow. There are many orchards containing a hundred trees or more about a day's travel north of Lanchow."

56394. "(No. 20c. Tsinan, Shantung.) Typical nuts obtained in the market; probably grown in a chestnut district 15 or 20 miles north of Tsinan."

56395. "(No. 21c. Yihsien, Shantung.) Typical nuts purchased on the streets."

56396. "(No. 34c. Shikhiachwang, Chihli.) Typical specimens from the market."

56397. "(Nos. 58c and 59c. Vanchiachuan, near Gupn, in the Lanchow-Changli district. October 15, 1922.)



**A PROMISING CHESTNUT FROM NORTHERN CHINA. (*CASTANEA MOLLISSIMA*  
BLUME; S. P. I. NO. 56397)**

The rapidly progressing destruction of native American chestnut forests by blight has focused the attention of horticulturists upon this Chinese species, which has already shown its adaptability to climatic and soil conditions in this country as well as a remarkable degree of resistance to the disease. It is promising not only as a source of tannin but also for its edible nuts, which are nearly as large and as good as those of the native American chestnut. The attention of the Department of Agriculture was first directed to this species by the late Frank N. Meyer, Agricultural Explorer. (Photographed by C. A. Reed, Vanchiachuan, Chihli, China, September 7, 1922; P36689FS)



**PREPARING WALNUTS IN CHINA FOR EXPORT. (JUGLANS REGIA L.; S. P. I. No. 56418)**

According to an estimate made by an official of the United States Department of Commerce, more than 8,000 tons of walnuts were produced in northern China during the year 1921. While less than half this quantity was exported to other countries, the rapid improvement of transportation facilities is almost certain to give an immense stimulus to this industry in China. Few orchards have as yet been planted, however; the bulk of the crop is harvested from scattered trees. The illustration shows the nuts being sun dried in the market place of Wulipu, Shantung Province. (Photographed by C. A. Reed, September 15, 1922: P36739FS)

56390 to 56398—Continued.

A large tree with decidedly sweet nuts."

For an illustration of this chestnut, see Plate III.

56395. *CHAETOCLOA ITALICA* (L.) Scribn. Poaceae. (*Setaria italica* Beauv.) Millet.

"(No. 60c. Peking, Chihli.) Millet forms one of the most important cereal foods of the natives of northern China. I consider it delightful as a breakfast food, although among the Chinese it is classed with sweet potatoes as 'coolie food.' There are many varieties ranging in height up to 3 or 4 or even 6 feet, and there are said to be two distinct groups, the ordinary kind and the glutinous kind."

56399 and 56400.

From Darjiling, India. Seeds presented by G. H. Cave, curator, Lloyd Botanic Gardens. Received January 8, 1923.

56399. *ACER STERCULIACEUM* Wall. Aceraceae. (*A. villosum* Wall.) Maple.

A handsome tree with gray bark, native to the northwestern parts of the Himalayas at altitudes of 7,000 to 9,000 feet. It sometimes reaches a height of 80 feet. The thin shining-green leaves are occasionally used for fodder, and the white close-grained wood is beautifully mottled.

56400. *BETULA UTILIS* D. Don. Betulaceae. (*B. bhajpatra* Wall.) Birch.

A tree about 60 feet in height, with creamy white trunk and branches and bark which peels off in papery flakes. It is native to subtropical regions of the Himalayas. The oval, coarsely toothed, sharp-pointed leaves are dark green above and paler beneath, and 3 inches long. In winter the orange-chocolate color of the twigs is very striking.

56401 to 56437.

From China. Seeds presented by C. A. Reed, Bureau of Plant Industry. Received January 10, 1923. Quoted notes by Mr. Reed, unless otherwise stated.

56401 to 56402. *CORYLUS* spp. Betulaceae. Filbert.

56401. *CORYLUS* sp.

"(No. 34ac. Shihkiachwang, Chihli.) Typical nuts from the market, said to have come from trees growing 100 miles south of the town."

56402. *CORYLUS* sp.

"(No. 45fc. Hangechow, Chekiang.) Nuts bought in the local market, but evidently brought from some distance, presumably western China."

56403. *CORYLUS* sp.

"(No. 65c. Hwailai, Chihli.) Nuts collected from wild plants growing along the mountainous roadway southeast of the Trappist Monastery."

56404. *HOLCUS SORGHUM* L. Poaceae. (*Sorghum vulgare* Pers.) Sorghum.

"(No. 42c. Taiyuan, Shansi.) Typical specimens from the market."

56405 to 56426. *JUGLANS* spp. Juglandaceae.

56405 to 56408. *JUGLANS MANDSHURICA* Maxim. Manchurian walnut.

56405. "(No. 10c. Nankow Pass, near Nankow, Chihli.) Obtained through J. Hers, of Peking. An uncultivated species with small thick-shelled nuts, not valued very highly by the natives. None of the

56401 to 56437—Continued.

trees were of large size, 30 feet being the maximum height, with an average height of less than 20 feet. In habit this species resembles *Juglans sieboldiana*."

56406. "(No. 19c. Hsinghuang, Chihli. August, 1922.) Collected in a valley north of the Ming tombs."

56407. "(No. 45ac. Nanking, Kiangsu.) Nuts taken from a tree near the residence of the president of the University of Nanking. The nuts of this species are known here as 'butternuts,' as they are also throughout Chosen and Manchuria."

56408. "(No. 63c. Hwailai, Chihli.) Nuts obtained from wild trees growing southeast of the Trappist Monastery not far from the Great Wall of China."

56409 to 56425. *JUGLANS REGIA* L. Walnut.

56409. "(Nos. 1c, 3c, 4c, 5c, 53c, and 54c. Hwailai, Chihli.) Nuts obtained from thrifty seedling trees in the vicinity of the Trappist Monastery. This place, which has an altitude of about 2,500 feet, is near the northernmost limit at which Persian walnuts are found in China. With these walnut trees were apricots, plums, pears, and peaches."

56410. "(No. 2c. Piensih, Shansi.) Nuts obtained from a farmer living near Piensih, a half day's travel west of Fenchow. This is an arid mountainous region with loess soil, subject to severe winters with little precipitation. The temperature falls gradually in the autumn, however, and rises gradually in the spring, which may account for the successful raising of walnuts here and in other parts of northern China."

56411. "(No. 6c. Yihsien, Shantung. October 15, 1922.) Nuts from a young seedling tree in the garden of K. M. Gordon. These nuts ripened on the tree and are of good quality. Usually the walnut crop of China is clubbed from the trees two to five weeks before ripening and the nuts covered with straw and left to sweat and wilt for a period of five to eight days. The hulls are then removed, the nuts superficially cured and then placed on the market."

56412. "(No. 7c. Tsinghua, Honan.) Nuts selected in the market by J. L. Buck, of the University of Nanking, as being typical for that locality."

56413. "(No. 8c. Sinsiang, Honan.) Nuts selected by J. L. Buck, of the University of Nanking, as being typical for that locality."

56414. "(No. 9c. Peking.) From the curio stands on Hattamen Street. Nuts large, very rough, with exceedingly thick, hard shells."

56415. "(No. 11c. Tsingchow, Shantung.) Nuts with very hard shells, purchased in the market and said to have come originally from western China."

56416. "(No. 12c. Tsinan, Shantung.) Typical nuts from the market."

## 56401 to 56437—Continued.

56417. "(No. 13c. Yihsien, Shantung.) Typical nuts from the market."
56418. "(No. 14c. Wulipu, Shantung.) Typical nuts from the market of this town, which is about 1½ miles southwest of Tsingchow." For an illustration of this, see Plate IV.
56419. "(No. 15c. Shangyen, Shantung.) Typical nuts from the market."
56420. "(No. 16c. Tsingchow, Shantung. September 15, 1922.) Typical nuts from an orchard about 2½ miles southwest of Tsingchow."
56421. "(No. 39c. Fenchow, Shansi.) Typical nuts from a nut-cracking establishment."
56422. "(Nos. 52c and 55c. Hsin-chuang, Chihli.) Large, rough, thick-shelled nuts from wild trees."
56423. "(No. 56c.) Exact source for these nuts in China not known."
56424. "(No. 57c. Tsinan, Shantung.) Typical nuts from the market."
56425. "(No. 64c.) Exact source for these nuts in China not known."
56426. *JUGLANS* sp. **Walnut.**  
 "(Nos. 47c, 48c, 50c, and 51c. Hsin-chuang, Chihli.) Local types of walnuts."
56427. *LENTILLA LENS* (L.) W. F. Wight. Fabaceæ. (*Lens esculenta* Moench.) **Lentil.**  
 "(No. 25c. Yihsien, Shantung.) Lentil seeds obtained in the market."
56428. *PHASEOLUS AUREUS* Roxb. Fabaceæ. **Mung bean.**  
 "(No. 31c. Yihsien, Shantung.) Purchased on the streets."
56429. *PINUS BUNGEANA* Zucc. Pinaceæ. **White-barked pine.**  
 "(Nos. 40c and 49c. Shansi.) Seeds from a planted forest east of Pingting. The erect, slender trees were not more than 20 or 25 feet tall. The wood was found to be very brittle."
- 56430 to 56434. *SOJA MAX* (L.) Piper. Fabaceæ. (*Glycine hispida* Maxim.) **Soybean.**  
 56430 and 56431. ("Nos. 28c and 29c. Yihsien, Shantung.) Bought on the street."  
 56430. Yellow beans.  
 56431. Black beans.
- 56432 and 56433. "(Nos. 37c and 38c. Taiyuan, Shansi.) From the market."  
 56432. Big roundish yellow beans.  
 56433. Black beans.
56434. "(No. 43c. Taiyuan, Shansi.) From the market."  
 Green roundish beans.
- 56435 to 56437. *VIGNA SINENSIS* (Torner) Savi. Fabaceæ. **Cowpea.**  
 56435. "(No. 26c. Yihsien, Shantung.) From the market."  
 Red string beans.  
 56436. "(No. 30c. Yihsien, Shantung.) From the market."  
 White string beans.

## 56401 to 56437—Continued.

56437. "(No. 41c. Taiyuan, Shansi.) From the market."  
 Pinkish beans.
56438. *WASABIA PUNGENS* Mats. Brassicaceæ. (*Eutrema wasabi* Maxim.)  
 From Yokohama, Japan. Plants purchased from the Yokohama Nursery Co. Received February 5, 1923.  
 A Japanese perennial belonging to the mustard family, with large bright-green, heart-shaped, long-stemmed leaves and white flowers borne in clusters on a flowering stalk over 3 feet in height. The long roots are about an inch in diameter, grayish, with many knots. In the humid valleys in Japan this plant is often spontaneous and is much cultivated on the banks of little streams near dwellings. The grafted roots are used in the same manner as ordinary horse-radish and by many are considered to be superior in all ways. (Adapted from *Vilmorin-Andrieux & Co., Les Plantes Potagères, p. 646.*)  
 For previous introduction, see S. P. I. No. 41567.
56439. *CASTANEA* sp. **Fagaceæ.**  
**Chestnut.**  
 From Lancaster, Pa. Nuts presented by J. F. Jones. Received February 3, 1923.  
 "Nuts sent to me by the Kinshan Arboretum, near Shanghai, China. I do not know where they were originally collected." (Jones.)
56440. *TRIFOLIUM PRATENSE* L. **Fabaceæ.**  
**Red clover.**  
 From Milan, Italy. Seeds purchased from Fratelli Ingegnoli. Received February 19, 1923.  
 "This clover was grown in clay soil in dry regions in the mountains of central Italy at an altitude of about 1,300 feet, where the climate is hot and the rains infrequent. Olives are grown in the same regions." (Fratelli Ingegnoli.)
56441. *TRIFOLIUM PRATENSE* L. **Fabaceæ.**  
**Red clover.**  
 From Budapest, Hungary. Seeds purchased from the Hungarian Seed Culture Co. Received February 10, 1923.  
 Locally grown Hungarian red-clover seed introduced for department specialists engaged in clover-breeding experiments.
- 56442 to 56444.  
 From Ibarra, Ecuador. Seeds presented by José Felix Tamayo. Received February 10, 1923. Quoted notes by Señor Tamayo.
- 56442 and 56443. *PHASEOLUS* spp. **Fabaceæ.**  
 56442. *PHASEOLUS COCCINEUS* L. **Scarlet Runner bean.**  
 "A wild perennial climber with brown beans which grows here in Ibarra and in the Chota Valley."  
 56443. *PHASEOLUS LUNATUS* L. **Lima bean.**  
 "Perennial climbing plants which grow at altitudes of 5,000 to 8,000 feet in arid or semiarid places where there is an abundant supply of water available."
56444. *VIGNA SINENSIS* (Torner) Savi. **Fabaceæ.**  
**Cowpea.**  
 "A small wild annual, said to be of bushy habit, from the hot humid region in the lower part of the Rio Mira, where the beans are eaten by the natives."

**56445. HYDNOCARPUS ALPINA** Wight.  
Flacourtiaceæ.

From Orleans, France. Seeds presented by Edmond Versin, St. Jean le Blanc. Received January 18, 1923.

Introduced for study because of its close relationship to *Tarakogenos kurzii*, the source of the genuine chaulmoogra oil.

A large tree 70 to 100 feet in height, with very variable leaves (red when young and deep green when old), up to 7 inches in length and 2½ inches in width, and dioecious flowers in axillary racemes. The fruit is globose, about the size of an apple, with a brown hairy surface. The seeds yield an oil which is used as fuel, and the wood is employed for general carpentry. The tree is native to the Nilghiri Hills in southern India. (Adapted from Watt, *Dictionary of the Economic Products of India*, vol. 4, p. 308, and Hooker, *Flora of British India*, vol. 1, p. 197.)

**56446 to 56449.**

From Cuenca, Ecuador. Seeds presented by Dr. Federico Malo. Received February 9, 1923. Quoted notes by Doctor Malo.

**56446. MEDICAGO SATIVA** L. Fabaceæ. **Alfalfa.**

"(Guanando, Province of Chimborazo. November, 1922.) A celebrated variety."

**56447 to 56449. ZEA MAYS** L. Poaceæ. **Corn.**

**56447.** "(Vicinity of Valle, Province of Azuay.) *Maiz blanco*, the largest and best variety of this region."

**56448.** "*Maiz jesuita*. A variety of the quality of *Maiz blanco*, but with pink kernels. From this the natives make 'mote,' the best one of their favorite dishes."

**56449.** "(Azogues, Province of Canar, and Province of Azuay. December, 1922.) *Maiz zhima*, a very resistant variety with pearl-colored kernels."

**56450 and 56451.**

From Elstree, Herts, England. Seed presented by Vicary Gibbs, Aldenham House Gardens. Received February 8, 1923.

**56450. COTONEASTER FRIGIDA** Wall. Malaceæ.

Variety *vicarii*. This is an improved form with deep-green leaves, grayish beneath, and large clusters of rich-red berries which are larger and brighter than those of the typical species.

**56451. PYRACANTHA GIBBSII** A. Jackson. Malaceæ. **Firethorn.**

A fine ornamental evergreen bush, vigorous and hardy, native to Hupeli and Szechwan, China. It becomes 12 to 14 feet high, is nearly spineless, and in the autumn bears large clusters of scarlet berries which contrast admirably with the glossy dark-green foliage.

For previous introduction, see S. P. I. No. 52938.

**56452. CASSIA BREWSTERI** F. Muell.  
Cæsalpiniaceæ.

From Brisbane, Queensland. Seeds presented by E. W. Bick, curator, Brisbane Botanic Gardens. Received February 14, 1923.

A shrub or small tree found in hilly pastures and on river banks in northern Queensland. It becomes 30 or 40 feet high and bears yellow flowers in axillary clusters 3 to 6 inches long. The thick pods are often a foot in length. The pale-yellow close-grained wood is prettily marked. (Adapted from Bailey, *Queensland Flora*, pt. 2, p. 455.)

**56453 to 56456. ACER** spp. **Acera-**  
**ceæ. Maple.**

From Darjiling, India. Seeds presented by G. H. Cave, curator, Lloyd Botanic Gardens. Received January 8, 1923.

**56453. ACER CAUDATUM** Wall.

A large tree with dark-gray bark and 5-lobed red-stemmed leaves 2½ to 5 inches long. The shiny, compact, moderately hard wood is white with a faint pink tinge. This maple is found in the temperate Himalayas at altitudes of 7,000 to 11,000 feet.

**56454. ACER HOOKERI** Miquel.

A tree 40 to 50 feet high with deeply fissured brown bark, native to the Sikkim Himalayas at altitudes of 8,000 to 10,000 feet. The oval leaves are not lobed and, though usually green, are sometimes copper colored. The wood is gray, with small pores and very numerous fine red medullary rays.

For previous introduction, see S. P. I. No. 47630.

**56455. ACER PECTINATUM** Wall.

A small maple closely related to *Acer caudatum*, from which it differs chiefly in foliage characters. It is common in the Sikkim Himalayas at altitudes of 8,000 to 12,000 feet.

**56456. ACER SIKKIMENSE** Miquel.

A small tree with thin gray bark, native to the eastern temperate Himalayas at altitudes of 7,000 to 9,000 feet. The leaves are undivided and up to 6 inches in length. The wood is a shining gray with distinct annual rings, with numerous fine medullary rays.

**56457. DENDROCALAMUS SIKKIMENSIS**  
Gamble. Poaceæ. **Bamboo.**

From Sibpur, Calcutta, India. Seeds obtained from the Royal Botanic Garden, Sibpur, and presented by E. M. Ehrhorn, Division of Plant Inspection, Honolulu, Hawaii. Received January 17, 1923.

A beautiful tufted bamboo native to Sikkim, India, where the dark-green culms reach a height of 60 feet or more and a diameter of 5 to 7 inches. The species is easily distinguished by its large reddish brown, globular flower heads and densely velvety stem sheath. The long narrow leaves are said to be poisonous, and from the stems are made the "chungas," or native buckets, used for carrying water and milk and for churning. (Adapted from *Annals of the Royal Botanic Garden*, vol. 7, p. 82.)

For previous introduction, see S. P. I. No. 55815.

**56458. TRIFOLIUM JOHNSTONI** Oliver.  
Fabaceæ. **Clover.**

From Kilossa, Tanganyika Territory, East Africa. Seeds presented by Capt. Charles M. F. Swynnerton, Kilossa, through Dr. H. L. Shantz, Bureau of Plant Industry. Received January 17, 1923.

"At high altitudes in East Africa clover is one of the prominent forage plants. It grows where the temperature probably never exceeds 85° F. and where for the greater part of the year it is much below this point. However, no frosts occur in the region." (Shantz.)

A smooth perennial clover with the habit of white clover (*Trifolium repens*), found at an altitude of 10,000 feet on Kilimanjaro, Tanganyika Territory. The leaves are long stemmed, with membranous leaflets and globose flower heads about an inch in diameter. (Adapted from *Transactions of the Linnean Society*, 2d ser., vol. 2, p. 331.)

**56459 and 56460. MALUS spp. Malaceae. Apple.**

From western Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 18, 1923. Quoted notes by Mr. Rock.

**56459. MALUS sp.**

"(No. 6724. November 9, 1922.) A wild apple tree 30 feet high, with wide-spreading branches, found in sandy soil along water-courses between Tsinchi and Chansi on the Tengyueh-Sadon Trail, at an altitude of 6,500 feet. The very numerous dark-carmine long-stemmed fruits are the size of small cherries."

**56460. MALUS sp.**

"(No. 6734. November 12, 1922.) A wild apple tree 25 feet high, with long whiplike ascending branches, found in sandy loam on the hills back of Mengka at an altitude of 5,700 feet. The dark-carmine fruits are half an inch in diameter."

**56461. CASTANOPSIS ARGENTEA (Blume) A. DC. Fagaceae. Chestnut.**

From Buitenzorg, Java. Seeds presented by Carl Hartley. Received January 18, 1923.

"Seeds of this edible chestnut were collected in western Java." (Hartley.)

An evergreen tree 50 to 60 feet high, with narrow thin leaves 5 to 7 inches long and very dense clusters of spiny burs; each bur is about 2 inches wide and contains normally a single nut an inch in diameter.

For previous introduction, see S. P. I. No. 55811.

**56462. DATURA INNOXIA Mill. Solanaceae.**

From San Luis Potosi, S. L. P., Mexico. Seeds purchased through Walter F. Boyle, American consul. Received January 18, 1923.

Introduced for the use of specialists studying the genus *Datura*.

A plant with a purplish stem 3 to 4 feet high, with several strong branches and oblong heart-shaped leaves. The large erect, axillary white flowers are succeeded by oval fruits which are covered with long, soft, harmless spines. (Adapted from *Journal of the Washington Academy of Sciences*, vol. 11, p. 179.)

**56463. EUTERPE EDULIS Mart. Phœnicaceae. Palm.**

From Georgetown, Demerara, British Guiana. Seeds presented by R. Ward, superintendent, Botanic Gardens, through Dr. B. E. Dahlgren, of the Field Museum, Chicago, Ill. Received January 18, 1923.

A shade-loving palm with a slender, generally inclined trunk 30 to 40 feet in height and edible fruits about the size of marbles. The inhabitants of Para, Brazil, where this palm is native, prepare a nutritious beverage from the thin coating of fibrous flesh surrounding the seed.

**56464 to 56471. SACCHARUM OFFICINARUM L. Poaceae. Sugarcane.**

From Georgetown, Demerara, British Guiana. Seeds presented by James Crabtree, superintendent, British Guiana Sugar-Planters' Experiment Station. Received January 19, 1923. Quoted notes by Mr. Crabtree.

"All of the following varieties grow strongly here and do not appear to suffer from any disease, except leaf spots on the Java seedlings. I have never seen any evidence of mosaic disease on them. These are not regarded as good commercial varieties here. The minimum temperature in the sugar belt is 70° F."

**56464 to 56471—Continued.****56464. Java 139. 56465. Java 225.**

"The three following varieties are very closely similar."

**56466. Bamboo. 56467. Uta.**

For previous introduction, see S. P. I. No. 41154.

**56468. Zwinga.**

"The following thin purple canes are probably Indian; they produce fertile seeds and the seedlings resemble the parent fairly closely."

**56469. Brekeret.****56470. Kamba Kamba Sati.****56471. Kara Kara Wa.****56472 to 56477.**

From Yunnan, China. Collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 24, 1923. Quoted notes by Mr. Rock.

**56472. CASTANOPSIS sp. Fagaceae. Chestnut.**

"(No. 6729. Mengka. October 12, 1922.) Seeds of a tree 50 to 60 feet high, which grows in the mountains at an altitude of 6,500 feet. The glossy glabrous leaves are ovate-acuminate and toothed near the apices, and the burs, an inch to an inch and a half in diameter, inclose two or three brown hairy nuts in each bur. The bur is quite similar to that of *Castanopsis armata*."

**56473. LIGSTRUM sp. Oleaceae. Privet.**

"(No. 7670. November 30, 1922.) Seeds of a small tree 20 feet high, found in dense forest on the Salwin Ridge at an altitude of 8,000 feet. This is evidently a very ornamental tree, judging by the large panicles, which bear numerous bluish black fruits."

**56474 and 56475. MALUS spp. Malaceae.**

**Apple.**

**56474. MALUS sp.**

"(Puerhfu. December, 1922.) Seeds of a wild apple tree which grows in the hills at an altitude of 6,000 feet. The small globose fruits are yellowish with a tinge of pink on the sun-exposed side. Obtained through Miss Clara Peterson, a missionary of Puerhfu."

**56475. MALUS sp.**

"(Puerhfu. December 6, 1922.) Seeds of a wild apple tree obtained from the hills at an altitude of 6,900 feet, by Miss Clara Peterson, a missionary of Puerhfu."

**56476. PYRUS sp. Malaceae. Pear.**

"(Szemao. December, 1922.) Seeds of a wild pear tree from the mountains; obtained through Miss Clara Peterson, a missionary of Puerhfu."

**56477. ROSA sp. Rosaceae. Rose.**

"(December 3, 1922.) Cuttings of a wild rose found in the valley of the Upper Salwin. It is very attractive with thousands of large white flowers, each 3 inches across, and could easily be trained on arbors. Strange to say, the flowers are double; perhaps it is a sport."

**56478 to 56482. SACCHARUM OFFICINARUM L. Poaceae. Sugarcane.**

From Santiago de las Vegas, Cuba. Seeds presented by Dr. Mario Calvino, Estación Experimental Agronómica. Received January 25, 1923. Quoted notes by Doctor Calvino.



"All of these are good sugar-producing canes but are subject to yellow-stripe disease."

56478. "Cuba 450. Seedling of Demerara 419, obtained in 1917-1918."

56479. "Cuba 519. Seedling of Demerara 99 obtained in 1918-1919."

56480. "Demerara 74."

56481. "Demerara 99."

56482. "Demerara 108."

56483 to 56487.

From Loanda, Angola, Africa. Seeds presented by John Gossweiler. Received January 30, 1923.

56483. ASPARAGUS AFRICANUS Lam. Con-vallariaceae.

"This asparagus is a great delicacy and in my opinion better than any of the cultivated kinds." (Sir Percy Fitzpatrick, in note under S. P. I. No. 32271.)

A much-branched tall shrub native to many places in tropical and South Africa. The main branches are woody, and the leaves are spiny at the base. The 1-seeded berries are a sixth of an inch in diameter. (Adapted from Thiselton-Dyer, *Flora of Tropical Africa*, vol. 7, p. 453.)

56484. MELINIS MINUTIFLORA Beauv. Poa-ceae. Molasses grass.

"John Morley, of Lake Alfred, Fla., informed me that the molasses grass (*Melinis minutiflora*) was so successful on his place that he is going to get a large quantity of seeds for the planting of a very considerable area of it. He said the trouble which other people who had tried to use this grass experienced was, apparently, that they did not keep it grazed or cut closely enough. When permitted to grow unmolested it is likely to get rank." (David Fairchild.)

For previous introduction, see S. P. I. No. 54680.

56485. MUSA GILLETII Wildem. Musaceae. Banana.

A close relative of the Abyssinian banana (*Musa ensete*), native to the vicinity of Kisantu, Belgian Congo. It is a plant up to 6½ feet high, with the lower leaves reaching a length of 5 feet and the upper leaves becoming smaller and smaller until they merge into the floral bracts. The fruits, 2 inches long, are oblong and somewhat pear shaped, with a grayish surface irregularly marked because of the prominence of the seeds. The powdery pulp incloses shiny black seeds. (Adapted from *Revue des Cultures Coloniales*, vol. 8, p. 102.)

56486. RUMEX ABYSSINICUS Jacq. Poly-gonaceae.

"This Rumex has proved a most interesting plant, reaching a height of from 7 to 8 feet in one season and yielding, from the first of June all through the summer, an abundance of succulent green leaves which make an excellent substitute for spinach. It promises to be an excellent plant for our Southern States where summer green-leaved vegetables are very scarce." (Peter Bisset.)

For previous introduction, see S. P. I. No. 48023.

56487. NATHUSIA ALATA Hochst. Oleaceae. (*Schrebera alata* Hochst.)

A tree of moderate size, native to Abyssinia and parts of British East Africa, with large compound leaves having winged stems and small white flowers, tinged with lilac, borne in lax terminal clusters. The timber is very hard.

56488 to 56494.

From China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received February 9, 1923. Quoted notes by Mr. Rock.

56488. CASTANEA sp. Fagaceae. Chestnut.

"(No. 6436. October, 1922.) A tall tree 60 to 70 feet high, with a trunk 3 to 4 feet in diameter, found wild in a dry district of the Shiku Valley, Yangtze River, two days' travel west of Likiang."

56489. CASTANOPSIS sp. Fagaceae.

"(No. 6739. November 29, 1922.) A fine tree 60 to 80 feet tall, with a straight trunk 2 to 3 feet in diameter, found in an oak and pine forest in the Shweli Valley, between Chiang-tso and Linchiapu, on the Shweli-Salwin watershed, two days' travel north of Teng-yueh at an altitude of about 7,000 feet. In this region at this time of the year there is frost every night.

"The slightly crenate leaves are oblong, silvery glaucous beneath and dark green above, and the small burs, with short thick spines, are in axillary spikes 4 or 5 inches long. The small nuts are at first brown, later becoming black, and they are sweet in taste."

56490. CORYLUS sp. Betulaceae. Filbert.

"(No. 6756. October, 1922.) A tree 50 feet high, with trunks 2 or 3 feet or more in diameter, found wild among limestone boulders and humus on the Likang Snow Range at an altitude of 10,000 feet. The nuts are large and edible."

56491. PYRUS sp. Malaceae. Pear.

"(November, 1922.) A fine tree with a dense round crown from the mountains near Puerfu. The white flowers are borne in great profusion and the fruits remain for a long time on the tree, becoming black and sweet. This is the species used in southern Yunnan as a stock for the cultivated pears. Obtained through Miss Clara Peterson, of the Puerfu Mission."

56492. QUERCUS sp. Fagaceae. Oak.

"(No. 6818. October, 1922.) A tall tree 50 to 60 feet in height, from the western slopes of the Likang Snow Range, on the road to the Yangtze River at an altitude of 11,000 feet. The leaves are lanceolate and entire and the acorns oblong."

56493. ZIZIPHUS sp. Rhamnaceae.

"(No. 6824. October, 1922.) A handsome spreading tree 30 feet high, with a round crown, found above Yangpi two days' travel from Talifu, at an altitude of 7,500 feet. The leaves are large, oval, and finely serrate, and the tree was loaded with olive-shaped drupes."

56494. (Undetermined.)

"(No. 6740. November 28, 1922.) *He ko* (black fruit tree). A tree 25 to 30 feet high with tall, spreading, drooping branches, which grows commonly on the trail to Chuchi, one day's journey northeast of Tengyueh. The tree was loaded with fleshy, bluish black 3-lobed capsular fruits; the one fertile lobe contained an oily, bitter seed. The fruits are gathered by the natives, dried, pressed, and heated, and an oil extracted which is used for lighting purposes."

56495 to 56498.

From Burringbar, New South Wales. Seeds presented by B. Harrison. Received February 7, 1923. Quoted notes by Mr. Harrison.

## 56495 to 56498—Continued.

56495. *ACACIA* sp. Mimosaceæ.

"The 'creeping wattle' is 4 or 5 feet high, growing in sandy soil near the sea. As the branches take root on the surface of the ground, this may prove of value as a sand binder."

56496. *AMARANTHUS* sp. Amaranthaceæ.

"A new 'Chinese spinach.'"

56497. *TIBOUCHINA* sp. Melastomaceæ.

"A splendid native pink-flowered shrub which grows to a height of 5 or 6 feet."

56498. *VIGNA CYLINDRICA* (Stickm.) Skeels. Fabaceæ. Catjang.

"'Edible white Bechuana cowpea.' This produces heavy crops on long runners."

56499 and 56500. *PERESKIA BLEO* (H. B. K.) DC. Cactaceæ. Cactus.

From Gatun, Canal Zone. Presented by J. A. Close. Received February 5, 1923.

"This cactus, which is also known under the name of *Pereskia panamensis*, is not uncommon in Panama and is also found in Colombia. In the city of Panama it is sometimes cultivated in the yards. It has large yellow flowers and peculiar truncated fruits. As a greenhouse plant it does well but rarely flowers." (J. N. Rose.)

56499. Cuttings. 56500. Fruits.

## 56501 to 56521.

From Simferopol, Crimea. Seeds presented by George Nikolaevich Visozki, professor of agronomy, Crimean Agricultural Institute, through Herbert Hoover, chairman, American Relief Administration. Received January 25, 1923. Quoted notes by Professor Visozki.

"These seeds were collected in 1922, mostly in the Koyash and Bodrac estates of the Crimean Agricultural Institute, in the southern part of the Crimea along the Boulganac Valley, 17 or 18 versts (about 12 miles) west of Simferopol. Some were collected on the virgin steppes of the Askania-Nova estate."

A collection of wild and cultivated grasses from the Crimea. Many are widely known species, but they are introduced for cultural and comparison tests with American-grown forms.

56501 and 56502. *AGROPYRON* spp. Poaceæ. Grass.56501. *AGROPYRON CRISTATUM* (L.) Gaertn.

"(Nos. 1 to 3.) A very good grass for dry regions. Native name *jitniak*."

For previous introduction, see S. P. I. No. 28306.

56502. *AGROPYRON INTERMEDIUM* (Host) Beauv.

"(No. 4.) Very good for dry soils, especially on slopes."

For previous introduction, see S. P. I. No. 30016.

56503. *AVENA STERILIS* L. Poaceæ. Wild oats.

"(No. 36.) Found as a weed among cultivated plants on the steppes of southern Crimea."

For previous introduction, see S. P. I. No. 25361-25363.

56504. *BECKMANNIA ERUCAEFORMIS* (L.) Host. Poaceæ. Grass.

"(No. 21. Askania Nova.) A very good fodder plant for growing on moist soil."

For previous introduction, see S. P. I. No. 20214.

## 56501 to 56521—Continued.

56505. *BROMUS VARIEGATUS* Bieb. Poaceæ. Grass.

"(No. 14.) A grass found commonly in the Crimea in wild places and also in cultivated land."

56506 and 56507. *FESTUCA* spp. Poaceæ. Grass.56506. *FESTUCA ELATIOR* L.

"(No. 25. Koyash and Bodrac estates.) A grass which grows in low-lying places."

For previous introduction, see S. P. I. No. 32216.

56507. *FESTUCA OVINA* L.

"(Nos. 23 and 24. Koyash and Bodrac estates.) A grass growing wild on the steppes and in unplowed ground."

For previous introduction, see S. P. I. No. 20738.

56508 and 56509. *HORDEUM* spp. Poaceæ. Grass.56508. *HORDEUM MARITIMUM* Roth.

"(No. 34. Koyash estate.) Grows in salty soil in meadows."

For previous introduction, see S. P. I. No. 49807.

56509. *HORDEUM NODOSUM* L.

"(No. 35.) A grass growing in salty places."

56510. *KOELERIA GRACILIS* Pers. Poaceæ. Grass.

"(No. 22.) Growing on the steppes."

56511. *LOLIUM MARSCHALLII* Stev. Poaceæ. Grass.

"(No. 29. Koyash estate.) Common on sloping meadows."

56512. *MELICA CILIATA* L. Poaceæ. Grass.

"(No. 26.) Grows along slopes in unplowed ground and in low-lying places."

For previous introduction, see S. P. I. No. 53149.

56513. *PANICULARIA FLUITANS* (L.) Kuntze. Poaceæ. Grass.

"(No. 30.) An aquatic grass."

56514. *POA PRATENSIS* L. Poaceæ. Kentucky bluegrass.

"(No. 28.) A rather common meadow grass."

56515 to 56517. *STIPA* spp. Poaceæ. Grass.56515. *STIPA CAPILLATA* L.

"(No. 11. Askania Nova.) The most popular pasture grass here."

For previous introduction, see S. P. I. No. 20686.

56516. *STIPA PENNATA* LESSINGIANA (Trin. and Rupr.) Richter.

"(No. 13.) A type with downy sheaths; grows on dry soil."

56517. *STIPA PENNATA* L. Feathergrass.

"(No. 12.) A feathery grass from the foothill steppes."

56518 to 56521. *TRITICUM* spp. Poaceæ.56518. *TRITICUM CYLINDRICUM* (Host) Ces. Pas. and Gib.

"(No. 10.) A grass from the plains."

For previous introduction, see S. P. I. No. 20689.

**56501 to 56521—Continued.**

56519. *TRITICUM MONOCOCCUM* L.  
Wild wheat.  
“(No. 7.) A wild wheat supposed to be the parent of our present types. The native Tatar name is *orkish*.”
56520. *TRITICUM OVATUM* (L.) Rasp.  
“(No. 8.) A grass from the plains.”  
For previous introduction, see S. P. I. No. 30112.
56521. *TRITICUM TRIUNCIALE* (L.) Gren. and Godr.  
“(No. 9.) A grass from the plains.”

**56522. × MALUS MAGDEBURGENSIS Zimmerm. Malacææ. Apple.**

From Glasnevin, Ireland. Plant presented by J. W. Besant, acting keeper, Royal Botanic Gardens. Received January 26, 1923.

This is in all probability a hybrid between *Malus spectabilis* and *M. dasycphylla*, discovered among some old trees by the municipal gardener, Mr. Schoch, in Magdeburg, Germany. The old parent trees were probably introduced from Japan early in the past century, and some years ago Mr. Schoch moved the hybrids out into the open, where they are now fine growing trees. (Adapted from *Möller's Deutsche Gärtner-Zeitung*, vol. 20, p. 254.)

**56523 to 56527. LESPEDEZA spp. Fabacææ.**

From Kagoshima, Japan. Seeds presented by Dr. Takeo Kusano, Kagoshima Imperial College of Agriculture and Forestry. Received February 3, 1923.

A collection of native Japanese bush clovers introduced for department forage-crop specialists.

56523. *LESPEDEZA BICOLOR INTERMEDIA* Maxim.  
*Yama-hagi*.
56524. *LESPEDEZA BICOLOR SIEBOLDI* (Miquel) Maxim.  
*Miyagino-hagi*.
56525. *LESPEDEZA JUNCEA* Pers.  
Variety *latifolia*. *Hai-medo-hagi*.
56526. *LESPEDEZA JUNCEA SERICEA* (Miquel) Forbes and Hemsl.  
*Medo-hagi*.
56527. *LESPEDEZA PILOSA* (Thunb.) Sieb. and Zucc.  
*Neko-hagi*.

**56528 to 56535.**

From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky. Received February 1, 1923.

56528. *ALANGIUM CHINENSE* (Lour.) Rehder.  
Cornacææ. (*Marlea begoniaefolia* Roxb.)
- “A tree, hardy here, but loses its leaves in winter, which might not happen in a warmer climate.” (*Proschowsky*.)

A tall tree, up to 60 feet in height, with oval leaves about 8 inches in length and clusters of small whitish fragrant flowers. It is a native of Africa and southeastern Asia. This tree might be grown in the extreme southern United States.

For previous introduction, see S. P. I. No. 44859.

56529. *ARBUTUS CANARIENSIS* Duham. Ericacææ.

**56528 to 56535—Continued.**

“A beautiful evergreen tree attaining a height of 40 feet. It is, as the name indicates, a native of the Canary Islands. It has pretty rose-colored flowers in racemes, followed by orange-colored fruits about an inch in diameter, which are very beautiful as seen against the shining-green foliage. The fruits are sweeter and more pulpy than those of the strawberry tree and are considered very good by the natives in spite of their rather numerous seeds. The bark is smooth and very thin, the wood rose colored and useful in cabinetmaking. This species should be used by plant breeders in hybridizing with the strawberry tree, *Arbutus unedo*.” (*W. T. Swingle*.)

For previous introduction, see S. P. I. No. 36529.

56530. *BENTINCKIA NICOBARICA* (Kurz) Beccari. Phœnicacææ. Palm.

An elegant little palm with a habit resembling that of a Kentia; its native home is the Nicobar Islands, Indian Ocean. The pinnate, irregularly divided fronds are large and spreading, and the branched spadix bears small purplish berries.

For previous introduction, see S. P. I. No. 51707.

56531. *CORDIA ROTHU* Roem. and Schult. Boraginacææ.

A small tree found in dry situations in northwestern and southern India: the fruit is eaten both raw and pickled by the poorer classes, and rope is made from the inner bark. The tough, hard gray wood is used for building purposes.

56532. *DENDROCALAMUS STRICTUS* (Roxb.) Nees. Poacææ. Bamboo.

“A strikingly beautiful plant.” (*Proschowsky*.)

A very tall bamboo, up to 100 feet in height, which is native to India and parts of Burma. It grows in drier situations than most bamboos and endures great cold as well as dry heat. It is useful for the consolidation of embankments on account of the network of fibrous roots, and its strength and solidity render it fit for many technical purposes. (Adapted from *Mueller, Select Extra-Tropical Plants*, p. 165.)

For previous introduction, see S. P. I. No. 53610.

56533. *FICUS CAPENSIS* Thunb. Moracææ.

A lofty tree 50 feet or more in height, which grows commonly in the forests of the southeastern parts of South Africa. It flowers twice a year, the flowers appearing in large bunches on the trunk or even on its main roots near the trunk. The fruits become as large as the smaller varieties of cultivated figs; the pulp is sweetish but rather dry. (Adapted from *Marloth, Flora of South Africa*, vol. 1, p. 135.)

56534. *SOLANUM CYANANTHUM* Dunal. Solanacææ.

A spiny shrub from the desert regions in the vicinity of the Rio Sao Francisco, Brazil. The leaves are long stemmed, very large, heart shaped, white tomentose beneath, and about 9 inches wide. The large sky-blue flowers, about 2 inches across, are in few-flowered racemes.

56535. *TECOMA GARROCHA* Hieron. Bigno-niacææ.

“A small glabrous shrub, native to Argentina. It is strikingly handsome with its slender racemes of bright-yellow and scarlet flowers and is smaller and more graceful than *Tecoma stans*.” (*Alfred Rehder*.)

**56536. TRIFOLIUM PRATENSE L. Fabaceae. Red clover.**

From Paris, France. Seeds purchased from Messrs. Rouget & Van der Walle. Received March 16, 1923.

Locally grown seed from central France, introduced for specialists in the department engaged in clover breeding.

**56537 to 56549.**

From Shantung, China. Scions sent in by K. M. Gordon, South Shantung Industrial and Agricultural School of the American Presbyterian Mission (North), at the request of C. A. Reed, Bureau of Plant Industry. Received February 12, 1923.

**56537 to 56541. CASTANEA MOLLISSIMA Blume. Fagaceae. Chestnut.**

**56537. No. 1. 56540. No. 4.**

**56538. No. 2. 56541. No. 5.**

**56539. No. 3.**

**56542. DIOSPYROS KAKI L. f. Diospyraceae. Kaki.**

"This persimmon is extensively used for drying." (*Gordon.*)

**56543 to 56549. JUGLANS REGIA L. Juglandaceae. Walnut.**

**56543. No. 1. 56547. No. 5.**

**56544. No. 2. 56548. No. 6.**

**56545. No. 3. 56549. No. 7.**

**56546. No. 4.**

**56550. SPERGULA ARVENSIS L. Silenaceae. Spurry.**

From Paris, France. Seeds purchased from Messrs. Vilmorin-Andrieux & Co. Received February 15, 1923.

Seeds of common spurry, introduced for department forage-crop specialists.

For previous introduction, see S. P. I. No. 1494.

**56551. TRIFOLIUM FRAGIFERUM L. Fabaceae. Strawberry clover.**

From Melbourne, Victoria. Seeds purchased from F. H. Brunning. Received February 15, 1923.

"Strawberry clover is a perennial suitable as a pasture plant for wet, marshy ground. It has spreading stems, pink flowers, and foliage very similar to that of White Dutch clover. The name is derived from the fact that the seed heads resemble the strawberry in appearance." (*Brunning.*)

**56552 to 56557. ORYZA SATIVA L. Poaceae. Rice.**

From Manila, Philippine Islands. Seeds presented by Adn. Hernandez, director, Bureau of Agriculture. Received February 19, 1923. Quoted notes by Mr. Hernandez.

"The following are white, nonglutinous varieties and have been tested under lowland conditions. They were grown at the Rosales Rice Station, Rosales, Pangasinan."

**56552. "(No. 1.) Apostol.** A nonbearded variety tested two years under lowland conditions; matures usually in 144 days. Average yield per hectare, 2,283 kilograms (approximately 2,000 pounds per acre)."

**56553. "(No. 6.) Caetenia I.** A bearded variety tested three years under lowland conditions; matures usually in 154 days. Average yield per hectare, 2,014 kilograms (approximately 1,800 pounds per acre)."

**56552 to 56557—Continued.**

**56554. "(No. 5.) Cayading a Nalabaga.** A bearded variety tested four years under lowland conditions; matures usually in 187 days. Average yield per hectare, 2,502 kilograms (approximately 2,200 pounds per acre)."

**56555. "(No. 4.) Macanining.** A bearded variety tested three years under lowland conditions; matures usually in 169 days. Average yield per hectare, 2,349 kilograms (approximately 2,100 pounds per acre)."

**56556. "(No. 3.) Mimis a Nalabaga.** A nonbearded variety; matures usually in 184 days. The value of this variety has not yet been fully determined."

**56557. "(No. 2.) Mimis a Purao.** A nonbearded variety tested four years under lowland conditions; matures usually in 188 days. Average yield per hectare, 3,245 kilograms (approximately 2,900 pounds per acre)."

**56558. PISTACIA VERA L. Anacardiaceae. Pistache.**

From Palermo, Italy. Plants presented by Antonio D'Alia, Casa Agricola, Piana dei Greci. Received February 23, 1923.

A locally grown variety introduced for department specialists engaged in pistache investigations.

**56559 to 56570.**

From Hobart, Tasmania. Seeds presented by L. A. Evans, Secretary of Agriculture, Agricultural and Stock Department. Received February 16, 1923.

**56559 to 56561. ACACIA ssp. Mimosaceae.**

**56559. ACACIA ELATA A. Cunn.**

A handsome unarmed tree 60 feet or more in height, with the young shoots often tinged with a golden yellow pubescence. The globular yellow flower heads are in clusters often 6 inches long. The tree is native to New South Wales. (Adapted from *Bentham, Flora Australiensis, vol. 2, p. 413.*)

**56560. ACACIA LINIFOLIA PROMINENS (A. Cunn.) Moore.**

An unarmed shrub 12 to 18 feet high, with angular branchlets and very narrow phyllodia (leaflike stems). The very small globular yellow flower heads are borne in racemes about as long as the phyllodia. Native to New South Wales.

**56561. ACACIA SALIGNA (Labill.) Wendl.**

The "weeping wattle," an ornamental acacia found in West Australia, is a tall shrub or small tree, 10 to 30 feet in height, with long thick phyllodia (leaflike stems) and short clusters of rather large globular flower heads. This is said to be the principal source of tan bark in southwestern Australia.

**56562. BILLARDIERA LONGIFLORA Labill. Pit-tosporaceae.**

A twining shrub sometimes many feet in length, with leaves varying in shape from oval to linear and solitary flowers which are greenish yellow, often changing to purple. It is found in thickets and along water-courses in New South Wales, Victoria, and Tasmania. (Adapted from *Bentham, Flora Australiensis, vol. 1, p. 123.*)

**56563. CANDOLLEA GRAMINIFOLIA (Swartz) F. Muell. Candolleaceae.**

(*Stylidium graminifolium* Swartz.)

An ornamental Australian plant with stiff grasslike leaves, sometimes 9 inches long, and

56559 to 56570—Continued.

always growing in a tuft from the end of a very short stem, and scapes 6 to 18 inches long bearing a simple raceme of pink flowers.

For previous introduction, see S. P. I. No. 44324.

56564. CASUARINA SUBEROSA Otto and Dietr. Casuarinaceae.

A tree 30 to 40 feet tall, quite similar to *C. equisetifolia*, with smooth, slender branchlets. It is considered a valuable fodder tree in the interior districts which are subject to drought. The wood is of great beauty for cabinetwork, but should be used only in veneers, as it is apt to split in drying.

56565. CERVICINA GRACILIS (Forst.) J. Britten. Campanulaceae.  
(*Wahlenbergia gracilis* DC.)

A very variable species, either a slender annual 6 to 18 inches high or a perennial with a rootstock which is almost woody. The leaves vary in shape from oval to linear, and the blue flowers, up to an inch across, are borne singly on long stems. The plant is native to many parts of Australia, extending to New Zealand and perhaps to the East Indies.

56566. DANTHONIA SEMIANNULARIS (Labill.) R. Br. Poaceae. Grass.

Spreading through the pastures, this native grass, known as *wallaby grass*, is becoming very popular, and rightly so. It is a perennial tufted grass, producing a fair amount of soft succulent fodder suitable for either sheep or cattle. The leaves are narrow, usually hairy, and light green. The flower stems grow to a height of about 2 feet, and the seed, which sheds easily, is produced in clusters that have a white woolly appearance when ripe. *Wallaby grass* provides good pasturage during the spring and summer and remains green in the winter months. (Adapted from *The Agricultural Gazette of New South Wales*, vol. 28, p. 286.)

For previous introduction, see S. P. I. No. 49018.

56567. EUCALYPTUS REGNANS F. Muell. Myrtaceae.

A large tree, the largest, in fact, in Australia; trees 300 feet tall are known in Victoria, and Mueller states that frequently a height of 400 feet is reached. The trunks are whitish and very straight, and the narrow leaves, shining on both sides, are of rather thin texture. The wood is well adapted for shingles, planking, and general construction. (Adapted from *Maiden, A Critical Revision of the Genus Eucalyptus*, vol. 1, p. 183.)

56568. EXOCARPUS CUPRESSIFORMIS Labill. Santalaceae.

Usually a tree about 20 feet in height, with very numerous green rigid wiry, apparently leafless branches; the leaves are reduced to minute scales. The flowers are very small, appearing in short spikes; usually only one of these flowers is fertilized, and the small roundish nut is borne on a red succulent stem which is eaten by the natives. The close-grained handsome wood is used for cabinetwork and for tool handles. Native throughout Australia.

56569 and 56570. STIPA spp. Poaceae.

56569. STIPA PUBESCENS R. Br.

A tufted perennial grass much relished by stock, found only in the wooded portions of Australia, where it seeds in October. The seed heads differ from those of other species of *Stipa* in being a rich brown.

56559 to 56570—Continued.

56570. STIPA SEMIBARATA R. Br.

A perennial grass with stems 2 to 3 feet high, which is abundant in dry soil throughout Tasmania and also in many parts of Australia. The leaves are narrow, often almost subulate, and the panicles, 6 to 10 inches in length, are very dense.

56571 to 56576.

From Georges Bay, Tasmania. Seeds presented by Dr. Arthur H. Clarke. Received February 16, 1923. Quoted notes by Doctor Clarke, unless otherwise specified.

56571 to 56573. ACACIA spp. Mimosaceae.

56571. ACACIA DISCOLOR Willd.

"An autumn flowering acacia 5 to 7 feet high."

A tall unarmed shrub or sometimes a small tree, with bipinnate leaves, pale beneath, and yellow flower heads in axillary and terminal clusters. It is native to southeastern Australia and Tasmania.

56572. ACACIA LONGIFOLIA SOPHORAE (Labill.) F. Muell.

"A yellow-flowered shrub 15 to 20 feet high."

A rapid-growing acacia which frequents the seacoast of southeastern Australia from southern Queensland to South Australia, and also in Tasmania. It often becomes a small tree and is excellent for preventing the encroachments of the sea along sandy coasts. The wood is white, hard, and durable.

56573. ACACIA MYRTIFOLIA Willd.

"A yellow-flowered shrub 2 to 3 feet high."

A glabrous shrub with very angular branches and phyllodia (leaflike stems) which vary in shape from oval to linear, the linear forms being much longer than the others. The flower heads, almost sessile, contain only a few large flowers. The shrub is native to dry and rocky places in many parts of Australia.

56574. EUCALYPTUS VIRGATA Sieber. Myrtaceae.

"*Tasmanian ironbark*. A tree 150 feet tall, with very tough hard wood, excellent for making piles."

For previous introduction, see S. P. I. No. 38727.

56575. INDIGOFERA AUSTRALIS Willd. Fabaceae. Indigo

An erect branching shrub 2 to 4 feet high with attractive compound leaves and dense or loose clusters of showy red flowers. It is very variable in regard to habit and foliage, and in its various forms is found almost throughout Australia, except in the Northern Territory.

For previous introduction, see S. P. I. No. 47152.

56576. KENNEDIA PROSTRATA R. Br. Fabaceae.

"Creeping, about 2 feet long, with pink to scarlet flowers."

A prostrate or sometimes twining hairy perennial, with leaves composed of three roundish leaflets less than an inch long and scarlet flowers, usually solitary, nearly three-fourths of an inch long. Native to most parts of Australia.

## 56577 to 56590.

From the city of Guatemala, Guatemala. Seeds presented by Sr. Jorge Garcia Salas, Dirección General de Agricultura. Received February 19, 1923. Quoted notes by Señor Salas.

56577. *MEIBOMIA* sp. Fabaceæ.

"(No. 3.) *Lentaje crimmarrona*. From Amatitlan."

56578 to 56588. *PHASEOLUS* spp. Fabaceæ.

56578 to 56581. *PHASEOLUS LUNATUS* L.  
Lima bean.

56578. "*Mexican pole Lima*; flat red snap beans."

56579. "*Cuban pole Lima*; flat white snap beans."

56580. "*Frijol pintado*; a pole Lima with speckled, flat snap beans."

56581. "(No. 4.) *Pilique*; from borders of cultivated fields near the city of Guatemala."

56582 to 56585. *PHASEOLUS VULGARIS* L.  
Common bean.

56582. "Originally from Mexico; a bush variety with light snap beans."

56583. "*Frijol de Mantua*, originally from Valencia, Spain. A bush form with red snap beans; can be used also as a green string bean."

56584. "*Alubia*, originally from Zamora, Spain. A bush form with white, longish rounded beans; can be used also as a string bean."

56585. "*Bahama* bean; a pole variety with white rounded snap beans."

56586. *PHASEOLUS* sp.

"*Chlorotata*; collected in the vicinity of Lake Amatitlan, Guatemala."

56587. *PHASEOLUS* sp.

"*Frijolillo*. Lake Amatitlan, Guatemala."

56588. *PHASEOLUS* sp.

"*Choreque*. San Andres Semetabaj, Solola, Guatemala.

56589 and 56590. *VIGNA SINENSIS* (Torner) Savi. Fabaceæ. Cowpea.

56589. "*Frijol garbanzo*. A long-podded bush variety."

56590. "*Frijol de cosita*. A bush variety with long pods and black-eyed beans."

## 56591 to 56593.

From Bogota, Colombia. Seeds presented by Brother Ariste Joseph, Instituto de la Salle. Received February 19, 1923.

56591. *SOLANUM* sp.

"Cultivated in Bogota as an ornamental; the fruit is poisonous." (*Ariste*.)

56592 and 56593. *TACSONIA* spp. Passifloraceæ.

56592. *TACSONIA LANATA* JUSS.

An evergreen climbing plant, native to Colombia. All parts of the plant are covered with a downy wool, and the narrowly heart-shaped leaves resemble those of the mullein. The long slender salmon-pink flowers are borne singly on short stems, and the fruit is said to be edible.

## 56591 to 56593—Continued.

56593. *TACSONIA MOLLISSIMA* H. B. K.  
Curuba.

"This species is more commonly cultivated on the mesa of Bogota than any of the several others whose fruits are also known as curuba. The vine is not quite so ornamental as that of some other species, but the fruit is considered one of the best. It is slender, oblong-oval, 2 to 4 inches long, and slightly more than an inch thick, with a thin leathery pericarp (not brittle as in most other species) inclosing many black seeds, each surrounded by an orange-colored juicy aril. The flavor is sprightly and aromatic. While much eaten out of hand, the fruit is perhaps best when prepared in the form of *creme de curuba* or when made into an ice. Certainly the curuba is one of the most popular fruits in Bogota." (*Wilson Popenoe*.)

For previous introduction, see S. P. I. No. 51399.

## 56594 and 56595.

From Santiago de las Vegas, Cuba. Seeds presented by Dr. Mario Calvino, Agricultural Experiment Station. Received January 30, 1923. Quoted notes by Doctor Calvino.

56594. *PHASEOLUS LUNATUS* L. Fabaceæ.  
Lima bean.

"*Frijol caballero perenne*. A climbing white variety perennial in Cuba; these seeds come from Oriente."

56595. *VIGNA CYLINDRICA* (Stickm.) Skeels. Fabaceæ. Catjang.

"*Frijol precioso*. From eastern Cuba."

Introduced in connection with disease-resistance experiments.

## 56596 to 56603.

From Tengyueh, Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the United States Department of Agriculture. Received February 16, 1923. Quoted notes by Mr. Rock.

56596. *ALLIUM* sp. Liliaceæ. Onion.

"*Tsung*. A variety resembling our small spring onion; it does not form a bulb."

56597 to 56599. *BRASSICA* spp. Brassicaceæ.

56597. *BRASSICA* sp.

"(No. 7814.) *Hsiao patsai* (small white cabbage). A stout lettuce-shaped cabbage with compact leaves, dark green above with a snow-white base, up to 4 inches broad, extending up into the dark-green leaf blades and forming prominent white ribs. The roots are short and stout."

56598. *BRASSICA* sp.

"(No. 7815.) *Ta patsai*. A large oblong cabbage, resembling the following [No. 7813; S. P. I. No. 56599]. The very large oblong leaves are pale green, and the broad base and midribs are snow white. This is a succulent vegetable, cooked like cabbage."

56599. *BRASSICA* sp.

"(No. 7813.) *Tsin tsai* (green cabbage). A green cabbage with leaves 2 feet or more in length and a foot broad, green throughout, including the thick sessile base. The root is turnip shaped but divided. This variety is cooked like cabbage."

56600. *CORIANDRUM SATIVUM* L. Apiaceæ.  
Coriander.

"(No. 7818.) *Yen sui*. This plant has an obnoxious odor, but is used in the same manner as European parsley."

56596 to 56603—Continued.

56601. *LACTUCA SATIVA* L. Cichoriaceae.  
Lettuce.

"(No. 7817.) *Oh soon*. A peculiar vegetable of which the thick inner stalk is eaten; this stalk is about 2½ feet long and 2 inches in diameter, and it is cut into slices and boiled. The leaves are discarded, as they are bitter."

56602. *RAFANUS SATIVUS* L. Brassicaceae.  
Radish.

"(No. 7816.) *Water radish*. A large snow-white oblong radish 3 feet long and 5 inches thick, cooked like kohl-rabi."

56603. *SPINACIA OLERACEA* L. Chenopodiaceae.  
Spinach.

"(No. 7812.) *Po tsai*. The dull-green leaves are lyrate sinuate, with sharp-pointed tips and lobes and long-ribbed fleshy stems. The roots are turnip shaped. The leaves are cooked like spinach. The seeds are sown in seed beds and set out in October or a little earlier and are brought to the market in December."

56604. *STACHYS SIEBOLDI* Miquel.  
Menthaceae.

From Tengyueh, Yunnan, China. Tubers collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received February 16, 1923.

"*Yee huai*. Small tubers spirally twisted like snails, about 2 inches long, tapering at both ends. When boiled for a half hour or an hour, seasoned, and placed in butter and milk, these are delicious."

56605. *ZEA MAYS* L. Poaceae. Corn.

From Buitenzorg, Java. Seeds presented by Dr. P. J. S. Cramer, director, General Experiment Station. Received February 14, 1923.

"*White St. Croix maïs* (white St. Croix corn). In 1918 this corn was imported from St. Croix, Virgin Islands, and it is one of the two imported varieties which have done well in Java. St. Croix is a dent corn, growing to 6 or 8 feet, with a very strong coarse stem. Each plant produces normally one large ear and no nubbins. The variety is medium maturing (about 100 days in Java) and yields about the same as *Gele Menado maïs* [S. P. I. No. 56663]. The grain is not as popular as that of flint-corn varieties, as it can not be pounded like these. For the feeding of cattle I think it to be of the same value as *Madoera maïs* [S. P. I. No. 56662] and *Gele Menado maïs*." (L. Koch.)

56606 and 56607. *MALUS SYLVESTRIS* Mill. Malaceae. (*Pyrus malus* L.) Apple.

From Orleans, Loiret, France. Plants presented by Edmond Versin, St. Jean le Blanc. Received February 26, 1923. Quoted notes by Mr. Versin.

56606. "*Court pendu*. The tree is prolific, but not very vigorous. The fruits are greenish gray, becoming yellow at maturity, and marked with red. They are of good quality and will keep from November to March."

56607. "*Reinette de Canada gris*. The tree is vigorous and very prolific, and the flowering season medium. The fruits are large, of a tarnished green which becomes a gray russet, and of very good quality. They will keep from December to March."

56608. *ACTINIDIA CHINENSIS* Planch. Dilleniaceae.  
Yang-tao.

From Chengtu, Szechwan, China. Seeds presented by George B. Newman, West China Union University, at the request of B. F. Lawrence, West China Mission, Suining, Szechwan. Received February 23, 1923.

"These 'hairy pears' came from the high foothills, at altitudes of 4,000 to 8,000 feet, near Chengtu, Szechwan." (Lawrence.)

"The *yang-tao*, an ornamental deciduous climber native to Szechwan, has attracted considerable attention because of the high quality of its fruits. The leaves have a plushlike texture and an unusual dark-green color, and their large size and regular spacing add to the beauty of the vine. The flowers are buff yellow to white, fragrant, often 1½ inches across, and are produced in great abundance. The ovoid to globose, russet-brown villous fruits are about 2 inches long. The flesh is green, of most excellent flavor, resembling that of a gooseberry but tempered with a flavor peculiarly its own. The fruit is good when eaten fresh and also makes very fine jam and sauce." (David Fairchild.)

For previous introduction, see S. P. I. No. 55840.

56609 and 56610. *HORDEUM* spp.  
Poaceae. Barley.

From Ayr, Scotland. Seeds presented by McGill & Smith. Received February 24, 1923. Quoted notes by McGill & Smith.

56609. *HORDEUM DISTICHON PALMELLA* Harlan.

"Recent trials of our new barley Golden Pheasant show that it is a better yielder than Plumage Archer, and we think it should be well adapted for the United States, as it is hardy and tillers well. It is a cross between Goldthorpe, one of the best British brewers' varieties, with Pfauen, the best brewers' variety in Germany. It is a big yielder."

56610. *HORDEUM INTERMEDIUM HAXTONI* Koern.

"Our 6-rowed barley is still in the experimental stage. It will probably never be anything but a feeding barley because of the amount of small seeds. The center rows are small twisted seeds, while the two side rows are equal to any other variety; the small seeds could be used for sowing. This variety was produced by crossing two 2-rowed barleys."

56611 to 56614.

From Nioka, Ituri, Belgian Congo. Seeds presented by Jean Claessens, Ferme Experimentale du Haute Ituri. Received February 26, 1923. Quoted notes by Mr. Claessens.

56611. *AMARANTHUS CAUDATUS* L. Amaranthaceae.

"*Lenga-lenga*, an interesting plant from which the natives prepare a flour which is made into dough and cooked. The plants become 70 or 80 centimeters high, with a rather open habit, and the fruiting panicles are red, yellowish, or yellowish with reddish striae."

56612 and 56613. *HOLCUS SORGHUM* L. Poaceae. (*Sorghum vulgare* Pers.) Sorghum.

56612. "(October, 1922.) A variety grown by the Bolos, but not by the Walendi."

56613. "(October, 1922.) A variety grown by the Walendi, probably a mixture."

56614. *NICOTIANA RUSTICA* L. Solanaceae.  
Tobacco.

"(October, 1922.) A yellow-flowered tobacco grown by the natives of Haute Ituri and eastern Uele. This tobacco is very strong and aromatic and very popular with the natives. The plant becomes 60 or 70 centimeters in height."

**56615. PHELEUM PRATENSE L. Poaceæ. Timothy.**

From Paris, France. Seeds purchased from Messrs. Vilmorin-Andrieux & Co. Received February 26, 1923.

"This has been grown near Epinal, Vosges, France, for four or five generations." (*Vilmorin-Andrieux & Co.*)

Introduced for timothy-breeding investigations.

**56616. TRIFOLIUM PRATENSE L. Fabaceæ. Red clover.**

From Padua, Italy. Seeds purchased from Nicola Gribaldo, Padua, through Asher Hobson, American representative, International Institute of Agriculture, Rome. Received February 26, 1923.

Locally grown seed from the Province of Padua, Italy, introduced for cultural and comparison tests.

**56617 to 56628. SACCHARUM OFFICINARUM L. Poaceæ. Sugarcane.**

From Soledad, Cienfuegos, Cuba. Seeds presented by R. M. Grey, superintendent, Cuban Gardens. Received February 13, 1923.

"Seeds selected from our best varieties. The plants from which the seeds were taken are highly resistant to mosaic disease." (*Grey*.)

56617. A. H. 175.	56623. A. H. 9172.
56618. A. H. 247.	56624. A. H. 11,152.
56619. A. H. 4124.	56625. A. H. 12,096.
56620. A. H. 6301.	56626. A. H. 12,100.
56621. A. H. 6304.	56627. A. H. 13,021.
56622. A. H. 6307.	56628. A. H. 13,168.

**56629 and 56630.**

From Nice, France. Seeds presented by Dr. A. Robertson Proschowsky. Received February 26, 1923.

**56629. GLADIOLUS SEGETUM Ker. Iridaceæ.**

"One of the most beautiful wild flowers around here. It might be very valuable for hybridizing." (*Proschowsky*.)

A European gladiolus of free habit, fond of warm, dry soil and a sunny situation, with rather small rose-purple flowers. It is an admirable species for mixed borders. (Adapted from *Robinson, English Flower Garden, p. 577.*)

For previous introduction, see S. P. I. No. 51146.

**56630. TRIFOLIUM ALEXANDRINUM L. Fabaceæ. Berseem.**

Introduced for department specialists engaged in clover-breeding investigations.

**56 31 FICUS CARICA L. Moraceæ. Fig.**

From Saonara, Padova, Italy. Cuttings purchased from Fratelli Sgaravatti. Received March 31, 1923.

*Dattato.* The best-known fig of Tuscany, Italy, and the variety which constitutes the largest part of the dried figs exported from Italy. The tree loves rich, moist soils and is not suitable for dry lands; it is a strong grower and heavy bearer. The medium-sized fruits, about 3 inches long, are oval-pyriform, with smooth, thin, yellowish green amber skin. (Adapted from *Gustav Eisen, The Fig, p. 229.*)

This well-known Italian variety is introduced for cultural and comparison tests by department specialists engaged in fig-breeding experiments.

**56632. SACCHARUM OFFICINARUM L. Poaceæ. Sugarcane.**

From Coimbatore, India. Seeds presented by T. S. Venkatraman, Government sugarcane expert, the Agricultural College. Received February 6, 1923.

"These seeds are from cane of a rather thin type, but which should prove resistant to mosaic disease." (*Venkatraman.*)

**56633 and 56634.**

From Upper Chindwin, northwestern Burma. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received February 28, 1923. Quoted notes by J. F. Rock.

**56633. TARAKTOGENOS KURZII King. Flacourtiaceæ.**

"(January 8, 1923.) Collected near the jungle village of Kyokta, Upper Chindwin. These seeds are from the same forest as those sent in 1921."

For previous introduction, see S. P. I. No. 52803.

**56634. ZIZIPHUS sp. Rhamnaceæ.**

"(January 6, 1923.) A tree 40 feet high, with a stout trunk 1½ feet in diameter, found in a very dry region on the Mytha River near Kaiewa, Upper Chindwin. The very small round leaves are less than an inch wide and the small globose, yellowish red drupes, less than an inch in diameter, have large stones and very scanty flesh."

**56635. TRIFOLIUM PRATENSE L. Fabaceæ. Red clover.**

From Budapest, Hungary. Seeds purchased from the Hungarian Seed Culture Co. Received March 1, 1923.

Introduced for department specialists engaged in clover-breeding investigations.

**56636 and 56637.**

From Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received March 3, 1923. Quoted notes by Mr. Rock.

**56636. ALNUS NEPALENSIS D. Don. Betulaceæ. Alder.**

"(No. 6858. September 27, 1922.) A tree up to 70 feet in height, with a trunk 3 to 4 feet in diameter, which is very common all over Yunnan at altitudes of 4,000 to 7,000 feet. It is a rapid grower, used chiefly for firewood, and appears to thrive in spite of the tall grass, 5 to 8 feet high, which surrounds it. I would recommend it strongly for planting in grassland where trees can not usually be grown."

For previous introduction, see S. P. I. No. 55670.

**56637. BUCKLANDIA POPULNEA R. Br. Hamamelidaceæ.**

"(Nos. 7574, 7575. November 21, 1922.) A tall straight tree 60 to 80 feet in height, of fine appearance, found near Kaotien, one day's journey north of Tengyueh, at an altitude of 6,000 feet. The broadly triangular leaves are dark green, and the yellow male flowers are in globose heads. This should be an ornamental lawn tree."

For previous introduction, see S. P. I. No. 55674.

**56638. BROMUS UNIOLOIDES (Willd.) H. B. K. Poaceæ. Grass.**

From Auckland, New Zealand. Seeds presented by W. S. Hill, agricultural instructor, Seddon Memorial Technical College. Received March 1, 1923.



"*Giant bromegrass*. I made this selection at the Moutmahaki Experimental Farm in 1913, and during the six generations through which it has passed it has exhibited the characters of a pure line. It has proved superior to the commercial prairie grass (*Bromus unioloides*) in yield and resistance to smut. The seed is heavier and retains its vitality well. The strain is likely to prove of great value as pasture in regions of mild winters and on the lighter soils. The bulk of the growing from early autumn sowing is made during the winter and early spring." (*Hill*.)

**56639 to 56647. ZEA MAYS L. Poaceæ. Corn.**

From Johannesburg, Transvaal. Seeds presented by P. J. Stevenson, trade commissioner. Received March 5, 1923. Quoted notes by Mr. Stevenson.

Nine varieties of corn sent in from South Africa for testing in this country.

56639. "*Ten-row Yellow Flint*. Grown by G. Mitchell-Innes, Blarnerne, Elandslaagte, Natal."

56640. "*Hickory King*. Grown by Hubert v. d. Merve, Smithfield, Potchefstroom, Transvaal."

56641. "*Iowa Silver Mine*. Grown by C. Mottram, Bushyhend, Machavie, Transvaal."

56642. "*Ladysmith*. Grown by J. Meiklejohn, Rosyth, Private Bag, Pienaars River, Transvaal."

56643. "*Natal 8-row Flint*. Grown by G. Mylrea, Reismierbult, Transvaal."

56644. "*Palms Cornflake*. Grown by P. Erasmus, Avondale, Potchefstroom, Transvaal."

56645. "*Potchefstroom Pearl*. Grown by George Parks, Machavie, Transvaal."

56646. "*Reid Yellow Dent*. Grown by E. Papendorp, Reismierbult Station, Transvaal."

56647. "*Salisbury*. Grown by W. Bean, Shamva, Rhodesia."

**56648 to 56659. MANGIFERA INDICA L. Anacardiaceæ. Mango.**

From Rio de Janeiro, Brazil. Plants presented by P. H. Rolfs, Vicosia, Minas Geraes, through Crittenden Marriott, Bureau of the Public Health Service, Treasury Department. Received January 27, 1923. Quoted notes by Mr. Rolfs, unless otherwise specified.

"As a general rule the mangos of Brazil are not of good quality when compared with those of India, the Philippines, and several other regions. Most of them are decidedly fibrous, and few have as rich a flavor as such Indian varieties as Amini, Mulgoba, and Paheri. Some of them are resistant to anthracnose, however, and for this reason are worthy of trial in Florida and the West Indies." (*Wilson Pope*.)

56648. "No. 12. *Augusta*. A small mango, but one of the few varieties propagated in Brazil by inarching or grafting. As seen growing in the garden of Sr. Antonio Calmon do Pin e Almeida on Itaparica Island near Bahia, it may be described as follows: General form obliquely oval; cross section oval, size small, length  $2\frac{3}{4}$  inches, breadth  $2\frac{1}{2}$  inches, thickness 2 inches; stem inserted obliquely; base obliquely flattened, cavity practically none; dorsal shoulder rounded, low; ventral shoulder rounded, high; apex rounded, not five-sixteenths of an inch from longitudinal apex, a slight depression; sur-

**56648 to 56659—Continued.**

face smooth, green-yellow, tinged and over-spread with orange on cheek; dots numerous, subcutaneous, small, rounded, lighter in color than surface; skin thick, firm, and tough, adhering closely; flesh pale orange, very juicy, aroma pleasant but not pronounced; flavor subacid; seed large for size of fruit, ovate-reniform,  $2\frac{1}{4}$  by  $2\frac{1}{4}$  by 1 inches, very fibrous over entire surface, monoembryonic; season December and January. For trial in the mango-growing regions of Florida." (*Dorsett, Shamel, and Popenoe*.)

For previous introduction, see S. P. I. No. 37848.

56649. "No. 11. *Carlota*. This has a better color than *Itamaraca* and is more resistant to anthracnose, but the most interesting thing about it is its tendency to produce sports."

For previous introduction, see S. P. I. No. 37847.

56650 and 56651. "The two following numbers are simply variants of what appear to be quite similar fruits; they are heavy croppers and precocious and are especially interesting because dwarf forms."

56650. No. 1. *Familia*.

56651. No. 2. *Familia*.

56652 to 56654. *Itamaraca* is probably the best variety of mango in the vicinity of Bahia, Brazil. It takes its name from the island of Itamaraca, off the Brazilian coast near Pernambuco, a place especially noted for its mangos. The fruit is small and of very unusual form, distinctly obovate, and commonly not more than 3 inches in diameter. The skin is yellow and the flesh rather free from fiber, with an aromatic, spicy flavor. (Adapted from *Bulletin No. 445, U. S. Dept. of Agr., p. 24*.)

56652. No. 3. *Itamaraca-A*.

56653. No. 4. *Itamaraca-B*.

56654. No. 5. *Itamaraca-B*.

56655. No. 6. *Itaparica*.

56656. No. 7. *Itaparica*.

56657. No. 8. *Julieta*.

56658. No. 10. *Julieta*.

56659. No. 9. *Meliifera*.

**56660. DIOSCOREA TRIFIDA L. f. Dioscoreaceæ. Yampi.**

From Cristobal, Canal Zone. Tubers presented by James E. Lewis, manager, Hotel Washington, Cristobal. Received March 9, 1923.

"This yampi is usually of even form and somewhat club shaped, and the tubers are commonly 4 to 10 ounces in weight; the inner skin is pink. The flesh is white, but often becomes slightly grayish when cooked. The flavor is much like that of the white potato, but the yampi has in addition an agreeable sweetness." (*R. A. Young*.)

**56661. TRIFOLIUM PRATENSE L. Fabaceæ. Red clover.**

From Italy. Seeds purchased from Giardino Allegra, Catania, Sicily, through Asher Hobson, American representative, International Institute of Agriculture, Rome. Received March 12, 1923.

A strain of locally grown red clover from Sicily, introduced for department specialists.

**56662 and 56663. ZEA MAYS L. Poaceæ. Corn.**

From Buitenzorg, Java. Seeds presented by Dr. P. J. S. Cramer, director, General Experiment Station. Received January 31, 1923. Quoted notes by L. Koch.

**56662.** "*Madoera maïs* (Madura corn). Madura corn was obtained from the island of Madura. This is an early variety, maturing in Java in from 75 to 85 days. The plants remain low (under 6 feet) and produce as a rule not more than one ear. The variety is less susceptible to diseases and drought than others, this being one of the principal reasons for its culture. The yield is usually less than that of Yellow Menado, but under good conditions 50 and more bushels to the acre have been harvested. The grain is very popular with the Madurese, who eat it pounded as rice."

**56663.** "*Gele Menado maïs* (Yellow Menado corn). This variety was received from the northern Moluccas, where it is planted extensively by the natives. It resembles very closely the Nation Yellow Flint from the Philippines and I presume that both varieties are the same. *Yellow Menado* is a flint variety of late maturity; it ripens at Buitenzorg in 115 to 120 days, growing to a height of 8 to 11 feet. It is prolific, 100 plants producing 150 to 180 ears, the percentage of sterile plants usually being low. At Buitenzorg, where the climate is not favorable for corn plantings, the average yield in the dry season is about 28 bushels per acre; in the wet season, however, it is much less. Under good conditions, such as after a green-manure crop, much higher yields have been reported (60 to 70 bushels per acre). The grain is of good taste and is very much favored by the natives."

**56664 and 56665. DAHLIA MAXONII Safford. Asteraceæ. Dahlia.**

From Chimaltenango, Guatemala. Seeds presented by W. Cameron Townsend. Received March 12, 1923. Quoted notes by Mr. Townsend.

**56664.** "I think these seeds are of the 'White dahlia'; they were taken from plants cultivated in Chimaltenango."

**56665.** The wild tree dahlia of the Guatemalan highlands blooms in its native land in the months of December and January, and its starry lilac-pink flowers in graceful clusters on long stems make a very agreeable contrast with the dark-green hillsides. This beautiful plant is extremely abundant, both wild and cultivated, in many parts of the Guatemalan highlands at altitudes of 3,000 to 7,000 feet. The stems sometimes reach 15 or even 18 feet in height and become quite woody toward the base. The slender branches bear the clusters of nodding flowers, some of which measure 4 or 5 inches across. When brought into cultivation around the huts of the natives the species seems to lose its stability, and in place of the single lilac-pink flowers appear double pink and double white forms and, less commonly, single white varieties. This dahlia is subtropical in its requirements and should succeed in southern Florida, provided suitable soil conditions are found. (Adapted from *Journal of Heredity*, vol. 11, pp. 265-268.)

**56666. ALEURITES FORDII Hemsl. Euphorbiaceæ. Tung-oil tree.**

From Hongkong, China. Seeds presented by H. Green, superintendent, Botanical and Forestry Department. Received March 12, 1923.

"A rapid-growing broad-leaved deciduous tree which attains a height of 25 to 35 feet. It is said to be comparatively short-lived. Clusters of pinkish

white flowers are produced just as the leaves begin to come out in the spring, followed by green or reddish fruits somewhat larger than those of the black walnut. The fruits contain the large nut-like oily seeds from which tung oil, a valuable drying oil, is expressed. The oil constitutes about 24 per cent (by weight) of the seeds, or about 40 per cent of the kernels from which the shells have been removed. The tree appears to be particularly well adapted to the sandy clay soils and the climate of northwestern Florida and the adjacent regions of Alabama and Georgia." (R. A. Young.)

For previous introduction, see S. P. I. No. 50635.

**56667. GARCINIA MANGOSTANA L. Clusiaceæ. Mangosteen.**

From Kingston, Jamaica. Seeds presented by W. S. Goodman, acting superintendent, Hope Gardens. Received March 12, 1923.

Mangosteen seeds introduced from Jamaica for testing in our tropical dependencies.

For previous introduction, see S. P. I. No. 56070.

**56668 to 56675.**

From New, England. Seeds presented by Dr. A. H. Hill, director, Royal Botanic Gardens. Received March 12, 1923.

Introduced for the use of specialists in the department engaged in forage-crop investigations.

**56668 to 56670. LOTUS spp. Fabaceæ.**

**56668. LOTUS EDULIS L.**

A more or less hairy annual with ascending or erect branched stems 4 to 16 inches long, short-stemmed grayish green leaflets, and large yellow flowers in few-flowered heads. The plant grows only in sandy areas in the Mediterranean region.

For previous introduction, see S. P. I. No. 51861.

**56669. LOTUS REQUIENI Mauri.**

A hairy ascending or erect plant with stems about a foot long, native to the vicinity of Rome, Italy. The leaflets are rhombic in shape and sharp pointed, and the flowers are small and red.

**56670. LOTUS TETRAGONLOBUS L.**

A purple-flowered annual from the eastern Mediterranean countries, where it frequents the edges of cultivated fields, roadsides, etc. It is more or less hairy, with obovate leaflets. The edible seeds are sometimes used as a substitute for coffee, and the plant is often cultivated as an ornamental.

For previous introduction, see S. P. I. No. 38415.

**56671 to 56675. TRIFOLIUM spp. Fabaceæ. Clover.**

**56671. TRIFOLIUM ALPESTRE L.**

A perennial clover with long underground roots, found over almost all the mountainous parts of Europe, especially in calcareous soils, and ascending to a height of 16,000 feet. The narrowly oval leaflets are velvety hairy, and the flowers are pinkish purple.

For previous introduction, see S. P. I. No. 35276.

**56672. TRIFOLIUM ELEGANS Savi.**

A smooth perennial clover with stems 8 to 20 inches long, found throughout Europe and the Caucasus, especially in siliceous soils. The flowers are whitish or pink. The plant is cultivated for forage.

For previous introduction, see S. P. I. No. 35275.

6668 to 56675—Continued.

56673. TRIFOLIUM OCHROLEUCON Huds.

A perennial clover with brown underground stems, which grows wild in western, central, and southern Europe. The flowers are yellowish. The plant multiplies by means of buds produced on the underground stems.

For previous introduction, see S. P. I. No. 25387.

56674. TRIFOLIUM PANNONICUM Jacq.

A clover with stems up to 10 inches long and yellowish flowers, found on the high mountains of southeastern France. It is considered by some authorities to be merely a race of red clover.

For previous introduction, see S. P. I. No. 28312.

56675. TRIFOLIUM PHYSODES Stev.

A perennial prostrate clover with oval leaflets and roundish heads of pink flowers which open in July and August. Native to southeastern Europe. In the flowering stage this species resembles white clover, but it does not creep.

56676. ALEURITES MONTANA (Lour.) Wilson. Euphorbiaceæ. **Mu-oil tree.**

From Hongkong, China. Seeds presented by H. Green, superintendent, Botanical and Forestry Department. Received March 17, 1923.

*Aleurites montana* yields an oil from the seeds practically identical with that from *A. fordii*, the tung-oil tree of China. While the seeds of the two species are almost indistinguishable, the fruits are easily recognized by their exteriors; those of the former are prominently ridged, while those of the latter are smooth.

56677. CASTANOPSIS DELAVAYI Franch. Fagaceæ. **Chestnut.**

From Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received March 9, 1923.

"(No. 7742. December 1, 1922.) A tree 60 to 100 feet tall, with trunk 4 to 5 feet in diameter, which grows on the summit of the Salwin Ridge. The leaves are large, broadly ovate, coarsely serrate, glossy above and silvery beneath. The burs are in spikes, and the nuts are small, something like those of the chinquapin, and very sweet and palatable. This is identical with the chestnut sent from the Talifu-Yangpi Trail, No. 6682 [S. P. I. No. 56080]."

56678. SOLANUM TUBEROSUM L. Solanaceæ. **Potato.**

From Bogota, Colombia. Tubers presented by Brother Ariste Joseph. Received February 26, 1923.

"These potatoes are from the Paramos de Guasca, where this curious variety is grown by the ancient tribe known as the Chibchas." (Ariste.)

56679 to 56683. TRIFOLIUM spp. Fabaceæ.

From Reading, England. Seeds purchased from Sutton & Sons. Received March 20, 1923. Quoted notes from Sutton's Farmers' Yearbook.

Introduced for the use of department specialists engaged in clover breeding.

56679 and 56680. TRIFOLIUM INCARNATUM L. **Crimson clover.**

"These crimson clovers are used as catch crops. The seed is harrowed into the stubble as soon as the wheat crop is off, and sometimes it is sown in the spring."

56679. *Late red.* 56680. *Late white.*

56679 to 56683—Continued.

56681 to 56683. TRIFOLIUM PRATENSE L. **Red clover.**

56681. "*Red or broad clover.* An indigestion strain used for fodder."

56682. "*Sutton's cow grass or late-flowering red clover.* A most valuable strain where ordinary red clover is unsuitable."

56683. "*Sutton's Giant Hybrid cow clover.* Produces a greater quantity per acre than any other clover, giving two and sometimes three cuttings a year. Duration two or three years."

56684. TRIFOLIUM PRATENSE L. Fabaceæ. **Red clover.**

From Italy. Seeds purchased from Consorzio Agrario Cooperativo Canavesano, Ivrea, through Asher Hobson, American representative, International Institute of Agriculture, Rome. Received March 12, 1923.

A strain of locally grown red clover from Sicily introduced for specialists in the Department of Agriculture.

56685 and 56686. PHASEOLUS spp. Fabaceæ.

From Chicacao, Guatemala. Seeds presented by Jorge G. Salas, Director General of Agriculture. Received March 20, 1923. Quoted notes by Señor Salas.

"From Chicacao, Solola; altitude 1,300 feet."

56685. PHASEOLUS ADENANTHUS G. Meyer.

"*Frijol de animal.*"

56686. PHASEOLUS sp.

"*Frijol de monte.*"

56687 and 56688. PYRUS CALLERYANA Decaisne. Malaceæ. **Pear.**

From Nanking, China. Seeds purchased from J. Lossing Buck, acting dean, College of Agriculture. Received March 22, 1923.

Introduced for the use of department specialists engaged in pear-breeding investigations.

56687. From Hunan.

56688. From Kuling, Kiangsi.

56689 to 56692.

From Bedford, England. Plants presented by Laxton Bros. Received March 26, 1923. Quoted notes from catalogue of Laxton Bros.

56689 and 56690. PYRUS spp. Malaceæ. **Pear.**

56689. PYRUS sp.

"*Superb.* A hybrid between *Beurre Superfin* and *Williams*. A very early dessert pear of fine flavor, partaking of the good qualities of both its parents, but ripening earlier than *Williams*."

56690. PYRUS sp.

"*Beurre Bedford.* A hybrid between *Marie Louise* and *Durondeau*. The fruit, which is as large as *Marie Louise*, and borne as freely as *Conference*, is pear shaped, tapering at the end with a long stalk. The skin is yellow, marked with russet brown and crimson, and the juicy melting flesh is of very fine flavor. This is superior to any other October pear and a very heavy cropper."

56691 and 56692. RUBUS spp. Rosaceæ.

## 56689 to 56692—Continued.

56691. RUBUS sp. Dewberry.

"Newberry. This is similar to the Logan blackberry, but darker and sweeter."

56692. RUBUS sp. Blackberry.

"Pollards. A blackberry which ripens later than *Edward Langley*, but is a strong grower and better adapted to exposed situations. The fruit clusters are very large, and the berries are rich in flavor and very juicy. This variety is strongly recommended for making jelly and jam."

## 56693 to 56696.

From Elstree, Herts, England. Plants presented by Hon. Vicary Gibbs, Aldenham House Gardens. Received March 26, 1923. Quoted notes by Edwin Beckett, superintendent.

56693. MALUS SYLVESTRIS Mill. Malacææ.  
(*Pyrus malus* L.) Apple.

Variety *Aldenhamensis*. "This is a chance hybrid which occurred at Aldenham and is considered the finest of all red-flowered crab apples. It flowers three weeks later than *Malus niedzwetzkyana* and *M. purpurea* and, unlike the former, bears in autumn a large number of large dark-red fruits."

56694. PYRACANTHA GIBBSII A. Jackson.  
Malacææ. Firethorn.

A fine ornamental evergreen bush, vigorous and hardy, native to Hupeh and Szechwan, China. It becomes 12 to 14 feet high, is nearly spineless, and in the autumn bears large clusters of scarlet berries which contrast admirably with the glossy dark-green foliage.

For previous introduction, see S. P. I. No. 56451.

56695 and 56696. STRANVAESIA DAVIDIANA  
Decaisne. Malacææ.

56695. "This may be trained as a small standard tree, otherwise of bush form. The foliage is evergreen, and the terminal corymbs of white flowers are soon followed by the handsome bunches of scarlet fruits."

56696. "This yellow-fruited form was raised from the same batch of seeds as the preceding [S. P. I. No. 56695], but the fruits were found to have a distinct orange-yellow color. Seedlings of this may revert to the original type."

56697. PHALARIS BRACHYSTACHYS Link.  
Poacææ. Grass.

From Milan, Italy. Seeds presented by Fratelli Ingegno. Received March 12, 1923.

Introduced for specialists in the department engaged in forage-crop investigations.

An annual grass a foot or two in height, native to the Mediterranean coastal regions. It is closely related to canary grass (*Phalaris canariensis*).

56698 and 56699. GARCINIA spp.  
Clusiaceæ.

From Brisbane, Queensland. Seeds presented by C. T. White, Government botanist. Received March 26, 1923.

56698. GARCINIA GIBBSIAE S. Moore.

A wild relative of the mangosteen which grows in forests in the Bellenden Ker Hills, at an altitude of about 2,000 feet. The leaflets are oval with mucronate tips, and the flowers, in clusters of two or three, are green, later

## 56698 and 56699—Continued.

turning brown. The fruit is not known. (Adapted from *Journal of Botany*, vol. 55, pp. 298, 302.)

56699. GARCINIA MESTONI F. M. Bailey.  
Meston's garcinia.

An erect, slender, graceful tree 20 feet or more in height, with drooping branches and glossy dark-green leaves. The roundish fruits, 2 or 3 inches in diameter, are of a bright-olive green, with very juicy pulp of a pleasant acid flavor. The tree grows wild in the Bellenden Ker Hills at an altitude of about 2,000 feet. (Adapted from *Report of the Government Expedition to Bellenden Ker Range, Queensland, 1889*, p. 31.)

For previous introduction, see S. P. I. No. 41802.

56700. EREMOCITRUS GLAUCA (Lindl.)  
Swingle. Rutacææ.

(Atlantia glauca Benth.)

Australasian desert kumquat.

From Dundas, New South Wales. Seeds presented by Herbert J. Rumsey. Received March 28, 1923.

"This is one of the most interesting of all citrus fruits and one which, curiously enough, has never yet received adequate attention from botanists or horticulturists. It was first mentioned by Leichhardt, the German explorer, to whom we owe much of our knowledge concerning the interior of the deserts of northeastern Australia. It is a shrub or small tree from 12 to 15 feet high, with a trunk 2 to 6 inches in diameter. It has small but thick leathery leaves of gray-green, and one is struck by the scantiness of the foliage. The flowers are small and the fruits about a half inch in diameter. An agreeable beverage is made from the acid juice and a fair preserve may be made out of the fruit. The peel has the sweetish flavor of the kumquat. It is known in Australia as the native lemon. The plant was described botanically in a footnote to Lieut. Col. Thomas Livingstone Mitchell's *Journal of an Expedition into the Interior of Tropical Australia in Search of a Route from Sydney to the Gulf of Carpentaria*. This plant was discovered on October 17, 1846, not far from Lieutenant Colonel Mitchell's camp, near the junction of the Maranoa and Merivale Rivers, in the southern limit of Queensland, latitude 26° S. Decidedly cold weather was encountered near this point, in some cases the ice being so thick that it had to be broken in the morning before the horses could drink. It seems quite probable from this that the plant grows in a region where the temperature occasionally falls to 10° F. and in rare cases nearly to zero. It is the hardiest of all evergreen citrus fruits and is very promising for use in breeding new and hardy types." (*W. T. Swingle*.)

For previous introduction, see S. P. I. No. 29537.

56701 to 56709. ZEA MAYS L. Poacææ.  
Corn.

From Sapporo, Japan. Seeds presented by M. Akemine, professor of plant breeding, Hokkaido Imperial University. Received March 21, 1923. Quoted notes by Professor Akemine.

Seeds introduced from the chief corn-producing regions of Japan and China, for the use of department specialists engaged in corn breeding.

56701. "A local yellow flint variety from Chosen."

56702 and 56703. "From Ehime."

56702. "A local white flint variety."

56703. "A local yellow flint variety."

56704. "A local yellow flint variety from Kumamoto."

**56701 to 56709—Continued.**

- 56705 to 56707. "From Manchuria, China."  
 56705. "A local white flint variety."  
 56706. "Lao-lai-tsou (white dent)."  
 56707. "Ma-ya-tsou (red dent)."  
 56708 and 56709. "From Sapporo."  
 56708. "Longfellow (imported from the United States about 35 years ago)."  
 56709. "Stephens Waushacum (imported from the United States about 25 years ago)."

**56710 to 56745. IPOMOEA BATATAS (L.) Poir. Convolvulaceae.**

**Sweet potato.**

From St. Croix, Virgin Islands. Tubers presented by J. B. Thompson, agronomist in charge, Agricultural Experiment Station. Received March 22, 1923. Quoted notes by Mr. Thompson.

"All these seedlings were grown from seeds at this station during February, March, and April, 1922. The seeds were collected from plantings of the Big Wig, Key West 'yam,' and Black Rock varieties grown close together, and it is believed they may have been cross pollinated. We believe that there are good possibilities even from these seedlings which are most unpromising."

56710. "No. 2. A Big Wig seedling. Vines in nursery row 18 to 24 inches long, medium in thickness, green with red coloring at juncture with petiole. Leaf large, cordate, resembling that of Black Rock; red midribs and green veins. Tubers dark red. The original seedling plant yielded 5 tubers weighing 6 pounds 6 ounces. Flesh yellow, mottled with red."  
 56711. "No. 3. A Big Wig seedling. In the nursery row the vine growth was 2 to 4 feet in length, medium in diameter, green with red at juncture of petiole, and hairy. Leaf 3 parted, midrib and veins red, leaf growth dense. The tubers are red and the first or original seedling yielded 7 tubers weighing 1 pound 1 ounce. The color of the flesh is a rich yellow."  
 56712. "No. 4. A Big Wig seedling. Plants in the nursery row were 5 to 8 feet long, completely covering the soil. The stems were rather slender, green with red coloring at juncture of petiole. The leaves were numerous, 3 parted with red midribs. The tubers are coppery red, the flesh yellow, occasionally mottled with red. The original seedling bore 7 tubers weighing 2 pounds 8 ounces."  
 56713. "No. 5. A Big Wig seedling. The vines were 2 to 4 feet in length in the nursery row. The leaves were cordate and resembled those of Black Rock rather than those of Big Wig, and the seedling is probably a cross between these two varieties. The petioles, midribs, and veins are red and the tubers are a peculiar light red. The flesh is white, mottled with red. The original seedling plant yielded 12 tubers weighing 6 pounds 4 ounces."  
 56714. "No. 7. A Big Wig seedling. This seedling is as yet untested. The very leafy vine, 3 to 4 feet long, covers the ground completely. The leaves are dark green, broadly shouldered and lanceolate. The roots are red, flesh white. Although not thoroughly tested this is not regarded as a promising seedling."  
 56715. "No. 14. A Big Wig seedling. The vines in the nursery row were 2½ to 4 feet in length, numerous, green and leafy. Leaves numerous, making a dense growth

**56710 to 56745—Continued.**

and affording a perfect covering for the hill, broad, 3 parted, with long green petioles. The midribs and veins are green, but the tubers are red. The original seedling yielded 4 tubers weighing only 12 ounces. Flesh pale yellow, almost white."

56716. "No. 15. A Big Wig seedling. A rampant grower, vines 2 to 3 feet long, numerous, stout, chocolate colored, hairy. Leaves large, broad, pointed, very dark green, petioles long green tinged with red, 10 to 12 inches long on old growth, midribs and veins red. Tubers dark red, flesh pale yellow. Original seedling yielded 2 tubers weighing 8 ounces."  
 56717. "No. 18. A Big Wig seedling. A rampant grower, the vines reaching out 8 or 10 feet on each side of the nursery row. This variety flowers profusely. Tubers red, flesh pale yellow. Not considered very promising."  
 56718. "No. 19. A Big Wig seedling. Vines in nursery row 18 to 24 inches long, bearing a dense growth of finely cut leaves. Leaves deeply cut and lobed, 5 parted, midribs red, veins green to wine colored. The tubers are dark red and the flesh a golden yellow sometimes mottled with red. Original seedling plant had no tubers."  
 56719. "No. 20. A Big Wig seedling. In the nursery row the stems were from 2 to 4 feet long and numerous. The leaves were numerous, dark green, with red midribs and veins. The original seedling plant yielded 6 tubers weighing 10 ounces. The tubers are a dark red with pale-yellow flesh sometimes mottled with a little red."  
 56720. "No. 22. A Big Wig seedling. In the nursery row the vines were slender, 2 to 4 feet in length and moderately leafy. Leaves broad, relatively short, pointed, 3 parted, midribs and veins green. Flesh of tubers deep yellow. The original seedling plant bore 12 tubers weighing 3 pounds."  
 56721. "No. 24. A Big Wig seedling. In the nursery row this vine was medium stout, 3 to 4 feet in length, leaves medium size, dull green, 3 and 5 parted (usually 3 parted). The tubers are light red, irregular in form, and show a tendency to burst and split badly. The variety shows a tendency also to produce tubers at the joints where they root, even at a distance from the hill. The original seedling plant produced 33 tubers weighing 13 pounds 8 ounces and was the heaviest producing hill among all the original plants. The flesh is pale yellow."  
 56722. "No. 26. A Big Wig seedling. In the nursery row this seedling shows short vine growth with rather sparse foliage. The stems are short and stout, attaining a maximum length of 2 to 3 feet. The leaves are lanceolate with a wine-colored midrib. The tubers are dark red and grow at the ends of fleshy roots that are 12 to 18 inches long; flesh white. The tubers are traversed by a number of pronounced ribs or veins. The original seedling yielded 4 pounds of tubers under very adverse conditions."  
 56723. "No. 28. A Big Wig seedling. Stems rather slender, 2 to 3 feet in length, green and leafy. Leaves broad, 3 parted, midrib wine colored. Tubers long, white, smooth, and hanging on roots in a cluster around the main stem, flesh creamy yellow. The original seedling plant produced 13 tubers weighing a total of 3 pounds 4 ounces."  
 56724. "No. 29. A Big Wig seedling. Stems short, stout, leafy, covering the ridge well, but not having sufficient length to completely cover the full area between rows. Leaves large, broad, 5 parted, midribs and

## 56710 to 56745—Continued.

- veins red. The original seedling plant bore 15 tubers weighing 4 pounds 7 ounces. The tubers are light red, short and thick, and the flesh is yellow."
56725. "No. 30. A Big Wig seedling. Vines 2 to 4 feet long and densely covered with leaves. Leaves large, cordate, and dark green. Tubers light red, flesh yellow. The original seedling plant bore 7 small tubers weighing a total of 12 ounces."
56726. "No. 31. A Big Wig seedling. In the nursery row the vines are strong but short and sparsely leaved. The leaves are small with five deeply cut lobes. This variety shows a tendency to produce tubers at the nodes of the vines where they attach themselves to the soil. The tubers are a light red or rose, flesh yellow. The original seedling yielded 38 tubers weighing 5 pounds 4 ounces."
56727. "No. 39. A Big Wig seedling. Vines short, stout, bunching, and bearing an abundance of foliage. Leaves medium in size, 3 and 5 parted, mid-ribs and veins wine colored. The tubers are dark red, flesh creamy yellow. The original seedling plant bore 1 tuber weighing 3 ounces."
56728. "No. 40. A Big Wig seedling. The stems are stout and numerous and about 18 inches in length. Leaves dark green, cordate, attractive, mid-rib and veins red. The tubers are dark red, flesh pale yellow. The original seedling plant bore no tubers."
56729. "No. 55. A Black Rock seedling. The stems are 2 to 3 feet long in our nursery row. The leaves are somewhat variable in form but usually lanceolate and bear some resemblance to those of the variety grown at this station under the name of the 'Key West yam.' The tubers are dark red and are borne on the ends of long fleshy roots; flesh rich yellow, also cooks yellow. The original seedling plant yielded 30 tubers weighing a total of 4 pounds 12 ounces."
56730. "No. 57. A Black Rock seedling. The stems are 2 to 5 feet in length, medium stout, and leafy. Leaves light green, large, broad, lanceolate, mid-ribs wine colored, veins green. The tubers are light coppery red, smooth, and attractive. The flesh is a rich yellow. The original seedling plant bore 77 tubers weighing 8 pounds."
56731. "No. 58. A Black Rock seedling. The vine is 2 to 3 feet in length and very leafy. The leaves are cordate and rounded and the younger ones are wine colored, especially around the margins. The tubers are dark red, flesh yellow, mottled with red. The original seedling plant bore 37 tubers weighing 5 pounds
56732. "No. 73. A Big Wig seedling. Vines short, 1 to 2 feet long. Leaves broad and lobed, usually 5 parted, broad blade. The tubers are smooth and dark red, flesh yellow, often mottled with red. The original seedling hill bore 8 tubers weighing 1 pound 14 ounces.
56733. "No. 80. A Big Wig seedling. The vines are 2 to 3 feet in length and leafy. Leaves large, broad, 5 parted, dark green, mid-ribs and veins amber. The tubers are white, flesh pale yellow, mottled with a little red. The original seedling plant bore 18 tubers weighing a total of 3 pounds 10 ounces.
56734. "No. 105. A Big Wig seedling. The vines are 5 feet or less in length and very leafy. Leaves large, deeply cut and lobed, the lobes narrow, mid-ribs wine colored. Tubers light red and growing in clusters close to base of main plant. The original seedling plant bore 14 tubers having a total weight of 6 pounds 4 ounces. Tubers light red with pink underskin, flesh yellow."

## 56710 to 56745—Continued.

56735. "No. 110. A Big Wig seedling. The parent plant yielded 4 tubers weighing 5 ounces. Vines medium to long, reaching 3 to 5 feet or more from hills. Leaves not numerous, deeply cut and lobed, 5 parted, mid-ribs and veins nearly green. The original seedling plant bore 11 tubers weighing 3 pounds 8 ounces. The tubers are smooth and light red, with pale-yellow flesh."
56736. "No. 142. A Big Wig seedling. Stems 1 to 3 feet long, green. Leaves small, green, cordate, mid-ribs and veins green. The tubers have a smooth white exterior and yellow flesh."
56737. "No. 157. A Big Wig seedling. The parent plant bore 4 tubers weighing 12 ounces. The stems are short, bunching, and leafy. The leaves are 5 parted and have dark-red mid-ribs and veins. The tubers are smooth and yellow, and the flesh is pale yellow or almost white with occasional faint red rings. The original seedling plant yielded 40 tubers weighing 5 pounds 1 ounce."
56738. "No. 195. A Black Rock seedling. The parent plant yielded 5 tubers weighing 12 ounces. Vines long, running to 6 feet or more from hill and covering the hill and interspaces well. Leaves medium in size, cordate to cordate-lanceolate in form, mid-ribs green or amber, veins green. The original seedling plant bore 9 tubers weighing 4 pounds. The tubers were smooth and light red, the flesh a rich yellow."
56739. "No. 205. A Black Rock seedling. The parent plant of which bore 5 tubers weighing 7 ounces. Vines 2 to 5 feet long, numerous and leafy. Leaves dark green, cordate, mid-ribs wine colored. The original seedling plant bore 25 tubers weighing 5 pounds 4 ounces. The tubers are dark red with pale-yellow flesh."
56740. "No. 222. A Key West 'yam' seedling. The parent hill bore 2 tubers weighing 12 ounces. The vines are 2 to 4 feet in length, green. Leaves light green, mid-ribs and veins green, cordate. The tubers are light rose, flesh yellow. The original seedling plant bore 26 tubers weighing 3 pounds 14 ounces."
56741. "No. 233. A Black Rock seedling. Tubers smooth, yellow; flesh yellow, sometimes mixed with a little red. Vines 2 to 3 feet long. Leaves cordate, mid-ribs green. The original seedling plant produced 13 tubers weighing 6 pounds 2 ounces."
56742. "No. 240. A Black Rock seedling, not yet described. The original seedling plant yielded 26 smooth coppery red tubers with a total weight of 5 pounds 4 ounces; flesh yellow."
56743. "No. 251. A Black Rock seedling, not yet described. The original seedling plant produced 14 yellow tubers weighing 1 pound 11 ounces; flesh yellow."
56744. "No. 259. A Big Wig seedling. The parent hill yielded 5 tubers weighing 8 ounces. Vines short, bunching, about 2 feet long. Leaves small to medium in size, comparatively long, 3 to 5 parted. The original hill yielded 10 tubers weighing 3 pounds 8 ounces. The tubers are dark red and the flesh yellow."
56745. "No. 275. The parentage of this number is unknown. The original seedling plant bore 17 tubers weighing 8 pounds 1 ounce. The tubers are dark red and the flesh pale yellow, mottled with a little red."

**56746 to 56755. MALUS SYLVESTRIS**  
Mill. Malaceæ. (*Pyrus malus* L.) **Apple.**

From Damascus, Syria. Scions presented by Charles E. Allen, American consul. Received March 29, 1923.

"These apple varieties are grown in the Plain of Zebdani, about 25 miles northwest of Damascus, at an altitude of a little above 3,500 feet. The apples of this region, though small, are known for their delicious flavor and bring good prices in the markets of Syria and Palestine. The methods of culture are primitive, and it is believed that the quality and size of the apples could be greatly improved by modern methods." (Allen.)

- 56746. No. 1. *Dershawi*.
- 56747. No. 4. *Hamod*.
- 56748. No. 6. *Feudy*.
- 56749. No. 7. *Fatima*.
- 56750. No. 8. *Lazkani*.
- 56751. No. 9. *Iraki*.
- 56752. No. 10. *Hamani*.
- 56753. No. 12. *Zebdani*.
- 56754. No. 13. *Kilatty*.
- 56755. No. 14. *Marius*.

**56756 to 56759.**

From Shantung, China. Scions sent in by K. M. Gordon, South Shantung Industrial and Agricultural School of the American Presbyterian Mission (North), at the request of C. A. Reed, Bureau of Plant Industry. Received March 23, 1923. Quoted notes by Mr. Gordon.

56756 to 56758. *JUGLANS REGIA* L. Juglandaceæ. **Walnut.**

56756. "(No. 1.) From Cheng Chia Chuang, southwest of Tsingchowfu; the tree was one of the finest seen, and was said to have produced 600 cattles (about 800 pounds) of nuts the previous season."

56757 and 56758. "From Cheng Chia Chuang district."

56757. "(No. 2.)"

56758. "(No. 3.)"

56759. *PYRUS* sp. Malaceæ. **Pear.**

"(No. 5.) *Yu li* (Duck pear). From 35 li (about 10 miles) northwest of Tchow. The fruits are large, with thin smooth yellow skin and white juicy sweet flesh. This variety is a good keeper."

**56760 to 56766.**

From China. Scions sent in by K. M. Gordon, South Shantung Industrial and Agricultural School of the American Presbyterian Mission (North), at the request of C. A. Reed, Bureau of Plant Industry. Received March 26, 1923. Quoted notes by Mr. Gordon.

56760. *AMYGDALUS PERSICA* L. Amygdalaceæ. (*Prunus persica* Stokes.) **Peach.**

"(No. 4.) *Fei peach*. From 90 li (about 30 miles) northwest of Taianfu, Shantung. This is the most famous peach of China; it is a clingstone with the skin and flesh tinged with red."

56761. *CASTANEA MOLLISSIMA* Blume. Fagaceæ. **Chestnut.**

"(No. 7.) From Wan Chia Chang, 45 li (about 15 miles) northwest of Changli, Chihli. This tree, the finest I saw in China, is reported to produce very large sweet nuts."

**56760 to 56766—Continued.**

56762. *DIOSPYROS KAKI* L. f. Diospyraceæ. **Kaki.**

"(No. 3.) *Honey persimmon*. From Nan Tui Shou, 110 li (about 35 miles) southeast of Tsinanfu, Shantung. The skin slips off the small red fruits when they are ripe; they are very sweet."

56763 and 56764. *JUGLANS REGIA* L. Juglandaceæ. **Walnut.**

"From Wan Chia Chuang, Chihli. This district probably produces the best walnuts of China."

56763. "(No. 7.)" 56764. "(No. 8.)"

56765 and 56766. *PYRUS* spp. Malaceæ. **Pear.**

56765. *PYRUS* sp.

"(No. 2.) *Laiyang*. A variety from Laiyang, Shantung. The fruit is large and dark skinned, and said to be very fine grained, sweet, and juicy."

56766. *PYRUS* sp.

"(No. 6.) *Peking White*. From Tungshan, 35 li (about 10 miles) northwest of Peking. The fruit is small and round with light lemon-yellow skin and fine-grained sweet flesh."

**56767. CASTANEA** sp. Fagaceæ.

**Chestnut.**

From Tengyueh, Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 16, 1923.

Received without data; possibly the same as S. P. I. No. 56768, which comes from the same general region.

**56768. CASTANOPSIS HYSTRIX** DC. Fagaceæ. **Chestnut.**

From southwestern Yunnan, China. Seeds collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 10, 1923.

"(No. 6716. October 24, 1922.) A lofty tree 80 to 100 feet tall, with trunks 3 feet in diameter, found in the pine forests of the Shweli Valley 40 li (about 12 miles) north of Lunging at an altitude of 6,000 feet. The smooth fawn-colored bark is flaky, and the straight ascending branches give the tree an oblong appearance. The burs are in long densely packed spikes, and the involucre are covered with long soft green spines. The small nuts are borne singly or in twos. This is one of the finest forest trees of the region. According to the natives the wood is very durable and never attacked by insects." (Rock.)

**56769. SACCHARUM OFFICINARUM** L. Poaceæ. **Sugarcane.**

From Honolulu, Hawaii. Seeds presented by H. P. Agee, director, Hawaiian Sugar-Planters' Association. Received March 28, 1923.

"*D 1135*. A sugarcane variety introduced for planting at Canal Point, Fla." (C. O. Townsend.)

**56770 and 56771. TRIFOLIUM** spp. Fabaceæ.

From Jonkoping, Sweden. Seeds presented by Prof. Hernfrid Witte, Swedish Moor-Culture Association. Received March 28, 1923. Quoted notes by Professor Witte.

Introduced for department specialists engaged in clover-breeding investigations.

56770. *TRIFOLIUM HYBRIDUM* L.

**Alsike clover.**

"Genuine Swedish-grown alsike clover."

## 56770 and 56771—Continued.

56771. *TRIFOLIUM PRATENSE* L. Red clover.

"In Sweden this late-flowering type of red clover is grown for seed and hay throughout the country; the early-flowering type can be grown only in the South."

56772 to 56776. *TRIFOLIUM* spp. Fabaceæ.

From Copenhagen, Denmark. Seeds purchased from I. C. Bjerg Jensen. Received March 31, 1923.

Introduced for department specialists engaged in clover breeding.

56772 and 56773. *TRIFOLIUM PRATENSE* L. Red clover.56772. *Hersnap*.

For previous introduction, see S. P. I. No. 56285.

56773. *Tystoffe No. 70*.56774 to 56776. *TRIFOLIUM REPENS* L. White clover.56774. *Morso*.56775. *Stryno*.56776. *Polonian White clover*.

## 56777 to 56779.

From Yunnan, China. Collected by J. F. Rock, Agricultural Explorer of the U. S. Department of Agriculture. Received January 18, 1923. Quoted notes by Mr. Rock.

56777. *CASTANEA* sp. Fagaceæ. Chestnut.

"(No. 6729. November 12, 1922.) Seeds collected in the hills back of Mengka."

56778. *LILIUM* sp. Liliaceæ. Lily.

"(November 8, 1922.) Bulbs of a wild lily 12 to 15 feet in height, found in forests of *Quercus* and *Schima* 1½ days' journey west of Tengyueh, on the Taping watershed, at an altitude of 8,000 feet. The leaves are long and lanceolate, and the large, ample panicles probably contain 10 or 12 flowers, which are said to be large and white."

56779. *PHOTINIA* sp. Malaceæ.

"(No. 6726. November 11, 1922.) Seeds of a tree 30 to 40 feet high with a dense crown, found on the plain and hills near Mengka, at 5,000 to 6,000 feet altitude. The leaves are pale green and lanceolate, and the flowers, said to be white, are in large panicles 5 inches across. In November the tree is one mass of deep orange-red fruits."

56780 and 56781. *NEPHELIUM* spp. Sapindaceæ.

From Buitenzorg, Java. Seeds presented by the director, Botanic Garden. Received March 3, 1923.

56780. *NEPHELIUM LAPPACEUM* L. Rambutan.

"This well-known fruit is probably a native of the Malayan Peninsula. The fruit is popular both with Europeans and natives alike and claims a place amongst the best fruits of the East. The tree is of medium size and, when bearing a good crop of fruit, one of the most ornamental of trees. The small green flowers are produced in loose panicles and are unisexual. Trees having all male flowers are often met with; such trees, of course, bearing no fruit. The flowering period varies somewhat with the season, but usually the tree blooms in April and May and again to a lesser extent in September and

## 56780 and 56781—Continued.

October. The fruit takes about four months to mature, and the main crop is generally ripe in August and September, to be followed by another crop toward the end of the year. As with most fruits, the crop varies in quantity; some years such enormous crops of fruit are produced that a difficulty is experienced in disposing of them. A considerable number of slight variations are to be noticed on the rambutans grown here. The color of the fruit varies from yellow to crimson. There is much difference in the flavor of the fruit; some are acid while others are sweet and of a delicious flavor. Also the quantity of flesh on the stones varies considerably. In the best varieties the flesh comes away easily from the seed. The fruit is usually eaten raw as dessert, but it can also be stewed or made into a preserve.

"The rambutan will grow in most soils, but responds well to good cultivation. The writer has in mind a certain tree which was long unproductive; by judicious management this tree was brought into fine condition and bore quantities of fruit yearly. In this instance a trench was dug round the tree at about 4 feet radius from the trunk. A charge of dynamite was employed to loosen the subsoil and the trench refilled with a compost of good soil and well-rotted cow manure. Clearly the rambutan is a tree that likes deep cultivation and an open soil. It may be raised from seed sown under shade, though it appears highly desirable to propagate the best varieties by grafting on seedling stocks. The Malays frequently raise young trees by a process of marcottage termed 'tut' in the Malay language. The advantages of this method are several and have been explained previously. The rambutan is a fruit worthy of the plant breeder's attention. By selection and good cultivation it seems quite possible that well-flavored varieties might in time replace the poor kinds frequently met with." (*J. N. Milsum, Fruit Culture in Malaya, p. 79.*)

56781. *NEPHELIUM MUTABILE* Blume.

Pulasan.

"*Pulasan*. A Malayan tree which is similar to the rambutan in appearance, but differs in the fruit and in the leaves being gray beneath. The fruit is larger than that of the rambutan and is a deep purple-brown with short blunt processes. According to Ridley, the flavor is decidedly superior to that of the later fruit." (*Macmillan, Handbook of Tropical Gardening, 2d ed., p. 176.*)

For previous introduction, see S. P. I. No. 42385.

56782 to 56784. *ORYZA SATIVA* L. Poaceæ. Rice.

From Seoul, Chosen. Seeds presented by the director, Department of Agriculture and Industry. Received March 20, 1923.

Early-maturing varieties introduced for department specialists engaged in rice-breeding experiments.

56782. *Kokuryomi Yaka*.56783. *Tamanishiki*.56784. *Waseshiniki*.56785. *MUSA GILLETII* Wildem. Musaceæ. Banana.

From Kisantu, Belgian Congo. Seeds presented by Père J. Gillet. Received March 21, 1923.

"From Lower Uele." (*Gillet*.)

For previous introduction and description, see S. P. I. No. 56485.



## 56786 to 56789.

From Burringbar, New South Wales. Seeds presented by B. Harrison. Received March 26, 1923. Quoted notes by Mr. Harrison, unless otherwise stated.

56786. *ALLOTROPSIS SEMIALATA* (R. Br.) Hitchc. Poaceæ. **Cockatoo grass.**

"A native grass which becomes 2 to 3 feet high in sandy soil."

"Cockatoo grass is excellent pasturage and of good seeding habit. It is leafy at the base." (Roland McKee.)

For previous introduction, see S. P. I. No. 41751.

56787. *CUDRANIA JAVANENSIS* Trecul. Moraceæ.

"*Cocklespur*. A thorny trailing shrub which should prove useful in making an almost impenetrable hedge."

The fruit, which is edible and of pleasant flavor, is irregular in shape and about as large as a small custard-apple.

For previous introduction, see S. P. I. No. 40618.

56788. *DAVIDSONIA PRURIENS* F. Muell. Cunoniaceæ.

## 56786 to 56789—Continued.

For previous introduction and description, see S. P. I. No. 56146.

56789. *PASPALUM SCROBICULATUM* L. Poaceæ. **Koda millet.**

"A native grass about a foot high, relished by all kinds of livestock."

An erect annual grass averaging 2 feet in height, native to India, where it is also extensively cultivated for the edible grain. The grain is poisonous, however, unless kept for a number of years. Cattle are fond of the grass when it is young; at the time of ripening it is poisonous to stock.

For previous introduction, see S. P. I. No. 51317.

56790. *GOSSYPIUM* sp. Malvaceæ. **Kidney cotton.**

From Horqueta, Paraguay. Seeds presented by Thomas R. Gwynn. Received February 26, 1923.

"*Mandiyu*, single seeded. Especially strong and used for hammocks." (Gwynn.)



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