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UNITED STATES DEPARTMENT OF AGRICULTURE



INVENTORY No. 111



Washington, D.C.

Issued May 1934

PLANT MATERIAL INTRODUCED BY THE DIVISION OF FOREIGN PLANT INTRODUCTION, BUREAU OF PLANT INDUSTRY, APRIL 1 TO JUNE 30, 1932 (Nos. 98257-100467)

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INTRODUCTORY STATEMENT

Inventory 111, including material received by the Division of Foreign Plant Introduction from April 1 to June 30, 1932 (nos. 98257 to 100467, inclusive), records conspicuously the collections of the Allison V. Armour expedition to the West Indies from December 1931 to April 1932, in which a widely varied range of tropical plants was gathered. Particular attention was paid to mangoes, of which 27 numbers were collected to be added to the permanent collection at Coconut Grove, Fla., where the test collection is established at the United States Plant Introduction Garden. A considerable number of palms were secured for the collection at the same garden, and a large number of ornamentals, including orchids, aroids, and bromeliads, as well as herbaceous perennials and flowering trees and shrubs, a total of 431 numbers.

The Erlanson-MacMillan expedition to Peru records in this inventory 328 introductions, of which 264 numbers were wild potatoes, the main object of the expedition. A considerable collection of native corn (99244-99288) was included.

In addition to the mangoes brought back by the Allison V. Armour expedition, the collection at Coconut Grove is increased by the collections from Puerto Rico (99760-99771, 99793-99801) and from Tahiti (99802-99804).

Through the kindness of Maj. Lionel de Rothschild, London, England, in sharing the material from the sixth Forrest expedition to southwestern China, this inventory records seeds numbered 99823-100103, 100141-100226, and 100281-100364, valued particularly for lilies, meconopsis, nomocharis, and primulas.

China is also represented by the collections received from Joseph Rock (99059-99070, 99676-99682), Albert Steward (99139-99242), and the botanical garden of Dr. Sun Yat Sen's memorial park, Nanking (98364-98387).

Special contributions for the specialists of the Division of Forage Crops and Diseases were received from the Union of Soviet Socialist Republics (98271-98304, 98524-98536), from Wales (99115-99138), from New South Wales (99327-99333), from Australia (99322-99325, 99467-99489, 100107-100113), and from New Zealand (100231-100251), including both grasses and legumes.

From the Union of Soviet Socialist Republics special collections for the use of other Department specialists were received, including cotton (98782-98790), peanuts (99302-99314), and sweetpotatoes (100253-100267).

Other collections, particularly of ornamentals, are recorded for the permanent collections of the several plant-introduction gardens maintained by this Division, particularly collections of species and varieties of maple.

The botanical determinations were made and the nomenclature determined by the late H. C. Skeels,<sup>1</sup> who had general supervision of this inventory.

KNOWLES A. RYERSON,  
*Principal Horticulturist, in Charge.*

DIVISION OF FOREIGN PLANT INTRODUCTION,  
Washington, D.C., October 27, 1933.

<sup>1</sup> Died Jan. 3, 1934.

INVENTORY<sup>2</sup>**98257. ARUNDO PLINII Turra. Poaceae.**

From Algeria, Africa. Roots presented by Dr. René Maire, University of Algiers, Algiers. Received April 2, 1932.

This species of Arundo is much smaller than *Arundo donar*, and the leaves are upright. It is native to the Mediterranean region and, in Algeria, is much used as a windbreak and as shading mats by the vegetable growers. Introduced as of possible value in experiments being carried on in the arid southwestern part of the United States.

**98258. SOLANUM TUBEROSUM L. Solanaceae. Potato.**

From Germany. Tubers presented by the estate of Herr von Lockow, at Petkus, through Loyd V. Steere, agricultural attaché, Berlin. Received April 4, 1932.

*Ackersegen*. A wart-resistant table potato, with yellow flesh, that gives a high yield.

**98259. SOJA MAX (L.) Piper (*Glycine hispida* Maxim.). Fabaceae. Soybean.**

From Japan. Seeds presented by T. B. Macaulay, Montreal, Canada. Received April 4, 1932.

*Fukunaga*. From the island of Hokkaido. A medium-sized, nearly round, straw-yellow bean with prominent dark-brown hilum.

**98260. CITRUS sp. Rutaceae.**

From Morocco. Seeds presented by M. H. Brayard, directeur de la Station Experimentale, Marrakech. Received April 4, 1932.

*Rhobz el arsa*. Introduced for trial as stock for the better varieties of lemon.

**98261. PSEUDOPHOENIX SARGENTII Wendl. Phoenicaceae. Palm.**

From the West Indies. Seeds presented by J. J. Albury, commissioner, The Bight, Cat Island, Bahamas, at the request of Hugh M. Matheson, Miami, Fla. Received March 30, 1932. Numbered in April 1932.

The so-called hog cabbage palm which grows wild on several of the Bahama keys. It does well in the rocky limestone formation of the islands.

For previous introduction see 96488.

**98262 to 98266. TRITICUM AESTIVUM L. (*T. vulgare* Vill.). Poaceae. Common wheat.**

From Australia. Seeds presented by H. Wenzholz, director of plant breeding, Department of Agriculture, New South Wales. Received March 29, 1932. Numbered in April 1932.

Grown at the experiment farm, Glen Innes, Sydney, New South Wales.

98262. *Bombard.* 98265. *Gtuford.*

98263. *Cleveland.* 98266. *Yok.*

98264. *Ford.*

**98267 to 98269.**

From the Union of Soviet Socialist Republics. Cuttings presented by the director, Botanic Garden, Kamenetz-Podolsk, Ukraine. Received April 5, 1932.

98267. *TRADESCANTIA FLUMINENSIS* Vell. (*T. albiflora* Kunth). Commelinaceae. **Wandering-jew.**

A trailing or pendulous herbaceous vine with ovate sessile leaves having sheaths with hairs only at the top. The white flowers, 1 inch wide, are hairy inside and are borne in axillary clusters. It is native to Brazil and Argentina.

98268. *TRADESCANTIA NAVICULARIS* Ort. Commelinaceae.

A stoloniferous creeping herbaceous perennial, native to Peru. The sessile ovate leaves are glabrous, and the bright-rose flowers are borne in terminal umbels.

98269. *ZEBRINA PENDULA* Schnizl. Commelinaceae. **Wandering-jew zebrina.**

A trailing half-succulent perennial herb native to Mexico, closely resembling *Tradescantia fluminensis*, but the leaf sheaths are hairy at both top and bottom. The sessile lanceolate leaves are silvery white above and red-purple beneath, and the flowers are rose red.

**98270. CITRUS GRANDIS (L.) Osbeck. Rutaceae. Grapefruit.**

From Java. Plant and seeds presented by Mrs. Sophie H. Pownall, Banjoewangi. Received April 5, 1932.

A pink-fleshed grapefruit with a thick skin, introduced for the use of Department specialists.

<sup>2</sup> It should be understood that the names of horticultural varieties of fruits, vegetables, cereals, and other plants used in this inventory are those under which the material was received when introduced by the Division of Foreign 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 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 horticultural nomenclature.

It is a well-known fact that botanical descriptions, both technical and economic, seldom mention the seeds at all and rarely describe them in such a way as to make possible identification from the seeds alone. Many of the unusual plants listed in these inventories are appearing in this country for the first time, and there are no seed samples or herbarium specimens with ripe seeds with which the new arrivals may be compared. The only identification possible is to see that the sample received resembles seeds of other species of the same genus or of related genera. The responsibility for the identifications therefore must necessarily often rest with the person sending the material. If there is any question regarding the correctness of the identification of any plant received from this Division, herbarium specimens of leaves and flowers should be sent in so that definite identification can be made.

## 98271 to 98304. Poaceae.

From the Union of Soviet Socialist Republics. Seeds presented by Wl. Kousnetzoff, in charge of forage plants, Institute of Plant Industry, Lenin Academy of Agricultural Sciences, Leningrad, at the request of Prof. N. I. Vavilov. Received March 25, 1932. Numbered in April 1932.

A collection of forage grasses introduced for the use of Department specialists.

98271 to 98275. *ALOPECURUS PRATENSIS* L.  
Meadow foxtail.

98271. No. 8023. From the Voronezh Experiment Station.

98272. No. 8026. From the Voronezh Experiment Station.

98273. No. 8229. From Burjato-Mongolia.

98274. No. 8733. From Melitopol, Ukraine.

98275. No. 8733-a. From the Askania Nova Experiment Station, Ukraine.

98276 to 98288. *BROMUS* spp. Bromegrass.

98276. *BROMUS ALBIDUS* Bieb.

No. 11. From the Volga region in European Russia.

For previous introduction see 78772.

98277 to 98280. *BROMUS ERECTUS* Huds.  
Meadow bromegrass.

A perennial thickly caespitose grass with upright stems 1 to 3 feet high. Native to Europe and Asia Minor.

For previous introduction see 68066.

98277. No. 137. From Samara, European Russia.

98278. No. 171. From the Saratov Experiment Station.

98279. No. 497. From Irkutsk, Siberia.

98280. No. 500. From Krim.

98281 to 98284. *BROMUS INERMIS* Leyss.  
Common bromegrass.

98281. No. 491. From the Samara Experiment Station.

98282. No. 511. From Saratov.

98283. No. 517. From the Askania Nova Experiment Station, Ukraine.

98284. No. 554. From the Volga region in European Russia.

98285. *BROMUS JAPONICUS* Thunb.

No. 1. From Tiflis, Caucasus region. A biennial, upright or ascending grass of wide distribution in Europe and Asia. It commonly becomes 1 to 2 feet high.

98286. *BROMUS SOUARROSUS* L.

No. 17. From Melitopol, Ukraine.

For previous introduction see 57151.

98287. *BROMUS TECTORUM* L.

No. 28. From the Kharkov Experiment Station, Ukraine.

98288. *BROMUS* sp.

No. 23. From Pamir.

98289 to 98291. *DACTYLIS GLOMERATA* L.  
Orchard grass.

98289. No. 7696. From the Altai region, Siberia.

98290. No. 7776. From Omsk, Siberia.

98291. No. 8693. From the Kharkov Experiment Station, Ukraine.

98292 to 98296. *FESTUCA* spp. Fescue.

## 98271 to 98304—Continued.

98292 and 98293. *FESTUCA ELATIO* L.  
Meadow fescue.

98292. No. 6081. From the Ural region in Siberia.

98293. No. 7025. From Omsk, Siberia.

98294. *FESTUCA ELATIO* ARUNDINACEA (Schreb.) Celak.

No. 8031. From the Voronezh Experiment Station.

For previous introduction see 88909.

98295 and 98296. *FESTUCA OVINA* L.  
Sheep fescue.

98295. No. 7779. From Omsk, Siberia.

98296. No. 9392. From Murman, Hibini.

98297 to 98299. *LOLIUM PERENNE* L.  
Perennial ryegrass.

98297. No. 6149. From the Tambov Government.

98298. No. 6585. From the Kaluga Government.

98299. No. 7648. From the Luga Government.

98300 to 98304. *PHELEUM* spp. Timothy.98300. *PHELEUM PHELOIDES* (L.) Karst.

No. 9421. From Priyenisseisk, Siberia. A perennial gray-green loosely caespitose grass with short creeping rhizomes and stems 1 to 2 feet high. It is native to dry stony places throughout central Europe.

For previous introduction see 95555.

98301 to 98304. *PHELEUM PRATENSE* L.

98301. No. 6061. From the Tambov Government.

98302. No. 7765. From Oiretia, Siberia.

98303. No. 8827. From Vitebsk Government.

98304. No. 9002. From Mingrelia, Caucasus.

98305. *CASIMIROA EDULIS* Llave. Rutaceae.  
White sapote.

From California. Bud wood presented by Mrs. Nancy Maltby, Carlsbad. Received April 5, 1932.

Bud wood from a tree 10 years old, which bears fruits weighing 1¼ pounds. The tree is over 20 feet tall.

For previous introduction see 73081.

## 98306 to 98316.

From Germany. Plants purchased from A. Hesse, Weener. Received April 6, 1932.

98306 to 98308. *ACER* spp. Aceraceae. Maple.98306. *ACER CAESIUM* Wall.

A tree up to 75 feet high, native to the slopes of the Himalayas between 7,000 and 10,000 feet altitude. The palmately five-lobed leaves, pale beneath, are cordate with serrate margins and are 6 to 8 inches long and broad. The flowers appear after the leaves in large pyramidal panicles and are followed by smooth fruits with the wings spreading nearly at right angles.

98307. *ACER ORIENTALE* L.

Variety *sempervirens*. A dwarf form with undivided entire or crenulate leaves, scarcely exceeding half an inch in length.

98308. *ACER CAPPADOCICUM* Gleditsch.  
Coliseum maple.

Variety *laetum rubrum*. A form in which the leaves are blood red while unfolding, later becoming green.



## 98306 to 98316—Continued.

## 98309. ACER LOBELII Ten.

A tree up to 60 feet high, with ascending branches and glaucous branchlets, related to the Coliseum maple (*Acer cappadocicum*) and also a native of Italy. The leaves, 4 to 6 inches across, are usually divided into five long-acuminate lobes and are dark green above and slightly paler beneath. The corymbs of small flowers are followed by winged fruits which spread at a wide angle.

For previous introduction see 97501.

98310. CARPINUS LAXIFLORA Blume. Betulaceae.  
Hornbeam.

A tree, native to Japan, 40 to 50 feet high. The obliquely elliptic to cordate long-pointed leaves are 2 to 3 inches long and have serrate margins. The inconspicuous flowers are borne in loose catkins 2 to 3 inches long.

98311 and 98312. CARPINUS TSCHONOKII Maxim. Betulaceae.  
Hornbeam.

98311. A graceful shrubby tree up to 45 feet high, native to northeastern Asia, with the young branchlets and leaves softly pubescent. The elliptic to oblong leaves are 2 to 4 inches long and have irregularly finely serrate margins.

98312. Received as *C. yedoensis*.

98313. DAPHNE BLAGAYANA Freyer. Thymelaeaceae.  
Balkan daphne.

A low diffusely branched shrub native to the mountains of southeastern Europe. The obovate leaves, 1 to 2 inches long, are crowded at the end of the branchlets, and the creamy fragrant flowers, borne in heads, are followed by globose light-pink fruits.

For previous introduction see 92285.

98314. FAGUS SYLVATICA L. Fagaceae.  
European beech.

Variety *fastigiata*. A form with erect branches and smooth glossy leaves. Received as variety *dawyckii*.

## 98315 and 98316. NOTHOFAGUS ANTARCTICA (Forst.) Oerst.

98315. A forest tree up to 100 feet high, native to Chile and closely related to the American beech (*Fagus grandifolia*). The branchlets are tomentulose, and the small leaves, about 1 inch long, are broadly ovate to oblong and have fine irregular teeth on the margin or occasionally bear small lobes.

98316. Variety *uliginosa*.

## 98317 to 98339.

From the Netherlands. Plants purchased from B. Ruys, Ltd., Royal Moerheim Nurseries, Dedemsvaart. Received April 6, 1932.

## 98317. ERYNGIUM sp. Apiaceae. Eryngo.

*Jewel*; a hybrid with dark-violet flowers.

## 98318. ERYNGIUM sp. Apiaceae. Eryngo.

*Springfield seedling*; a hybrid with dark steel-blue flowers which have blue stems.

## 98319. FUCHSIA LONGIPEDUNCULATA Hort. Onagraceae.

A name for which a place of publication and a description have not been found.

## 98320. GALEGA sp. Fabaceae. Goatstue.

*His Majesty*; a high-growing hybrid with fine dark-blue flowers.

## 98321. GALEGA sp. Fabaceae. Goatstue.

*Lady Wilson*; a hybrid with pinkish flowers.

## 98317 to 98339—Continued.

98322. HELENIUM AUTUMNALE L. Asteraceae.  
Sneezeweed.

*Moerheim Beauty*; a hybrid of erect habit. The strong flowers, which clear the foliage by several inches, are about 3 inches in diameter and have broad deep-crimson ray florets, shading to orange at the tips, surrounding a deep-purple disk which becomes golden as the stamens appear.

98323 to 98326. HOSTA spp. Liliaceae.  
Plantainlily.

## 98323 and 98324. HOSTA FORTUNEI (Baker) Bailey.

98323. A perennial herb, native to Japan, with slightly glaucous cordate leaves 6 to 8 inches long. The funnel-shaped pale-lilac flowers, 1 to 2 inches long, are borne in a raceme on a stalk 18 inches high.

98324. Variety *robusta*; a gigantic form with enormous leaves and flowers of the same color as the type.

98325. HOSTA SIEBOLDIANA (Hook.) Engler (*Funkia glauca* Sieb.). Cushion plantainlily.

A perennial herb, native to Japan, with very glaucous cordate leaves 10 to 15 inches long. The slender pale-lilac drooping flowers are borne on short stalks usually shorter than the leaves.

## 98326. HOSTA MINOR (Baker) Nakai.

Variety *alba*; a white-flowered form of this herbaceous perennial, native to China and Japan, with slightly cordate leaves, 4 to 6 inches long, on petioles as long as the blades. The small flowers are borne on long stalks 12 to 18 inches high.

98327 to 98329. KNIPHOFIA HYBRIDA Hort. Liliaceae.  
Torchlily.

98327. *Egypt*. Flowers a distinct shade of orange yellow.

98328. *Excellence*. Elegant stems and flowers a very peculiar shade of red.

98329. *Lord Roberts*. A variety with wonderful red flowers of distinct merit.

98330. LATHYRUS LATIFOLIUS L. Fabaceae.  
Perennial pea.

*Rose Queen*. A variety with large bright-pink flowers.

98331. PODOPHYLLUM EMODI Wall. Berberidaceae.  
Himalayan mayapple.

Variety *majus*; a very early flowering plant with foliage peculiarly marbled on long stems. The light-pink flowers, also on long stems, are raised just above the leaves and are followed by conspicuous fruits like the Spanish pepper.

98332 to 98339. PRIMULA JULIAE Kusnez. Primulaceae.  
Primrose.

98332. *Bunty*. A dwarf novelty, the finest of the Juliae-hybrid group. The flowers are as near blue as possible.

98333. *Helena*. A hybrid with beautiful carmine-purple flowers.

98334. *Helena* *purpurkissien*. A hybrid with very early, fine purple flowers.

98335. *Juliana Gloria*. A very free-flowering dwarf hybrid with brilliant magenta-colored flowers with an orange eye.

98336. *Magenta*. Flowers deep velvety crimson red with brilliant yellow eye.

98337. *Mrs. MacGillivray*. An early variety with enormous quantities of fine lilac-pink flowers. (Originated in the Ruys Nurseries.)

98338. *Pam*. A Juliae cross which is a dwarf with deep purple-crimson flowers; one of the finest and richest colors of this group.

## 98317 to 98339—Continued.

98339. *Wanda*. A very early dwarf hybrid with a mass of brilliant purple-blue flowers.

## 98340 to 98347.

From France. Seeds presented by the secretary general, Société Nationale d'Acclimatation de France, Paris. Received April 2, 1932.

98340. *ANNONA DIVERSIFOLIA* Safford. *Annonaceae*. *Llama*.

A small tree, native to Mexico and tropical America, with brown-gray aromatic bark. The thin membranous leaves 5 inches long are broadly elliptical to oblanceolate. The broadly ovoid fruit, about 6 inches long, is clothed in dense grayish feltlike tomentum and, when mature, is usually covered with stout thick protuberances. The hard smooth golden-brown nutlike seeds are embedded in the edible cream-colored or rose-tinted flesh.

For previous introduction see 58850.

98341. *CARICA PAPAYA* L. *Papayaceae*. *Papaya*.

98342 and 98343. *CASIMIROA EDULIS* Llave. *Rutaceae*. *White sapote*.

98342. Originally from Hidalgo, Mexico.

98343. Originally from Tlaxcala, Mexico.

98344 to 98346. *PRUNUS CAPULI* Cav. *Amygdalaceae*. *Capulin*.

98344. Originally from Mexico, Mexico.

98345. Originally from Puebla, Mexico.

98346. Originally from Tlaxcala, Mexico.

98347. *PSIDIUM CATTLEIANUM* Sabine. *Myrtaceae*. *Strawberry guava*.

A form with red fruits.

For previous introduction see 94288.

98348 to 98350. *SACCHARUM OFFICINARUM* L. *Poaceae*. *Sugarcane*.

From British Guiana. Cuttings presented by the British Guiana Experiment Station, Georgetown. Received April 7, 1932.

98348. No. 10.

98349. No. 663-13.

98350. No. 666-18.

98351. *VITIS VINIFERA* L. *Vitaceae*. *European grape*.

From Algeria, Africa. Cuttings presented by Emil Vivet, Director of Agriculture, Algiers, through Oscar S. Heizer, American consul. Received April 7, 1932.

*Valsani*. A large round golden-yellow grape which forms a rather loose cluster and somewhat resembles the *Panse Précoce*.

## 98352 to 98362.

From the Union of Soviet Socialist Republics. Seeds presented by the director, Botanic Garden, Kamianetz Podilskyj, Ukraine. Received April 5, 1932.

98352 to 98356. *ALYSSUM* spp. *Brassicaceae*.

98352. *ALYSSUM ARGENTUM* Vitm. *Silver alyssum*.

A dwarf herbaceous perennial up to 15 inches high, native to Europe. The oblong spatulate leaves, 1 inch long, are silvery beneath, and the small yellow flowers appearing all summer are borne in dense clusters.

## 98352 to 98362—Continued.

98353. *ALYSSUM CALYCNINUM* L.

A rather low annual alyssum from the mountains of Asia Minor. The lower leaves are obovate, the upper oblanceolate, and the flowers are in a simple raceme.

For previous introduction see 90608.

98354. *ALYSSUM MARITIMUM* (L.) Lam. *Sweet alyssum*.

Variety *Benthami*; a dwarf compact form, not over 6 inches high, with very pervasive scent.

98355. *ALYSSUM MONTANUM* L.

A tufted alpine perennial, native to the mountains of Europe. The pubescent plants, 2 to 3 inches high, have obovate leaves, and the fragrant yellow flowers are borne in simple racemes.

98356. *ALYSSUM SAXATILE* L. *Goldentuft*.

A low herbaceous perennial, native to Europe, forming dense mats. The oblanceolate hoary-tomentose leaves, 2 to 4 inches long, are entire or wavy margined, and the bright-yellow flowers are borne in small compact clusters on stems about 1 foot high.

98357. *DIANTHUS CHINENSIS* L. *Silenaceae*. *Chinese pink*.

Variety *Sequiriti*; a form with the flowers in panicles and with squarrose-spreading bracts.

98358. *ECHINOPS KARATAVICUS* Regel and Schmah. *Asteraceae*. *Globethistle*.

A stout hairy perennial composite from Turkistan, with a stem 1 or 2 feet high and elliptic-lanceolate or lanceolate pinnatifid leaves 6 to 8 inches long. The pale-blue flower heads are in small clusters.

98359. *ECHINOPS SPHAEROCEPHALUS* L. *Asteraceae*. *Common globethistle*.

A tall herbaceous perennial, native to southern Europe, with coarse stems 5 to 7 feet high. The large pinnatifid leaves are viscid pubescent above, tomentose beneath, and the broad lobes are armed with yellow spines. The white or bluish flowers are borne in globose masses.

98360. *KITABELLIA VITIFOLIA* Willd. *Malvaceae*.

A robust herbaceous perennial up to 8 feet high, somewhat like abutilon, with five-lobed maple-like leaves and showy white or rose colored five-petaled flowers, clustered in the axils. Said to be useful in half-shady places. Native to Europe.

For previous introduction see 79503.

98361. *STATICE PINIFOLIA* Brot. *Plumbaginaceae*. *Thrift*.

A stemless herbaceous perennial with long rigid sharp-pointed leaves 4 to 6 inches long and pink flowers on three or four scapes 1 to 2 feet high. Native to Portugal.

98362. *STATICE SPLENDENS* Lag. and Rodr. *Plumbaginaceae*. *Thrift*.

A magenta-flowered herbaceous perennial with narrow linear basal leaves one half inch long and simple filiform scapes 2 inches high. Native to Spain.

98363. *MEDICAGO SATIVA* L. *Fabaceae*. *Alfalfa*.

From Arabia. Seeds presented by K. S. Twitchell, mining engineer, Jidda, Hejaz. Received April 5, 1932.

A collection of native alfalfa introduced for the use of Department specialists.

## 98364 to 98387.

From China. Seeds presented by H. K. Fu, director, Botanic Garden, Dr. Sun Yat Sen's memorial park, Nanking. Received March 28, 1932. Numbered in April 1932.

98364 to 98366. *ABIES* spp. Pinaceae. Fir.

Collected in Szechwan Province.

98364. *ABIES BEISSNERIANA* Rehd. and Wils.

A fine tree up to 60 feet in height, with a trunk 2 to 3 feet in diameter, which grows along stream beds at about 11,000 feet altitude. The needles are not silvery beneath, and the erect cones are greenish white.

For previous introduction see 53499.

98365. *ABIES DELAVAYI* Franch.

A tall tree, often over 100 feet high, native to western China. The slightly grooved branchlets are lustrous red-brown and the emarginate linear leaves, about 1 inch long, are revolute on the margin, dark green above and with two white bands beneath. The violet-black cylindrical to ovoid cones are 2 to 4 inches long, and the scales are nearly 1 inch wide.

98366. *ABIES RECURVATA* Masters.

A tall tree up to 125 feet high, native to western China. The rough bark is dark gray or red brown, the lustrous branchlets are pale yellow-gray, and the sharp-pointed recurved linear leaves, more than 1 inch long, are shining blue-green above and paler beneath. The ovoid cones, 2 to 4 inches long, are violet-purple, finally becoming gray-brown.

98367. *BUDDLEIA LINDLEYANA* Fortune. Loganiaceae. Lindley butterflybush.

An upright shrub 6 to 8 feet high, collected in Chekiang Province, where it is native. The branchlets are four angled and slightly winged, and the ovate to oblong-lanceolate leaves are 2 to 4 inches long and have remotely denticulate margins. The purple-violet flowers are borne in rather dense upright spikes 6 to 8 inches long.

98368. *CASTANOPSIS HYSTRIX* A. DC. Fagaceae. Evergreen chinquapin.

A lofty tree 80 to 100 feet high, with trunks 3 feet in diameter, found in pine forests in Szechwan Province at 6,000 feet altitude. 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 is not attacked by insects.

For previous introduction see 65759.

98369. *CROTON TIGLIUM* L. Euphorbiaceae. Croton-oil plant.

Collected in Szechwan Province. A small ornamental tree with ovate leaves varying in color from metallic green to bronze and orange. The powerful purgative, croton oil, is obtained from the seeds by crushing.

For previous introduction see 45196.

98370. *EUCOMMIA ULMOIDES* Oliver. Trochodendraceae. Tu-chung.

*Shih mien shu*, stone cotton tree, in reference to the asbestoslike threads of shining whitish color which appear when the pieces of bark or leaf are snapped across. A tree which reaches a height of 80 feet and seems to grow best when sheltered by other trees. It is native to the southwestern part of China.

For previous introduction see 46119.

## 98364 to 98387—Continued.

98371. *EXOCHORDIA RACEMOSA* (Lindl.) Rehd. Rosaceae. Common pearlbrush.

A slender spreading shrub 9 to 12 feet high, native to eastern China. The elliptic to obovate leaves are 2 to 5 inches long and whitish beneath, and the white flowers, nearly 2 inches across, are borne in 6- to 10-flowered racemes.

98372. *GREWIA BILOBA* Don. Tiliaceae.

A shrub 6 to 9 feet high, with tomentose branchlets, native to northern China, and collected in Chekiang Province. The rhombic-ovate leaves, 2 to 5 inches long, are unequally and doubly serrate, sometimes three-lobed, and are densely stellate pubescent beneath. The creamy-yellow flowers, about one half inch across, are borne in 5- to 8-flowered umbels and are followed by orange-red 2- to 4-lobed fruits.

98373. *GYMNOCLADUS CHINENSIS* Baill. Caesalpiniaceae.

Closely resembling the Kentucky coffee tree (*G. dioica*), but the oblong-obtuse leaflets are smaller and are pubescent on both sides. The lilac-purple flowers are borne in large panicles and appear before the leaves.

98374. *MALLOTUS APELTA* (Lour.) Muell. Arg. Euphorbiaceae.

Collected in Chekiang Province. A large tropical shrubby perennial, native to southeastern China, closely related to the castor-bean (*Ricinus communis*). The leaves are alternate, broadly oval, and the fruit is a prickly capsule.

## 98375 to 98380. Collected in Szechwan Province.

98375. *ORMOSIA HOSIEI* Hemsl. and Wils.

*Hung-tou Mu*, red bean tree, so-called because the seeds are red and in a beanlike pod. The heavy wood is a rich-red color, beautifully marked, and is used for the very best furniture and high-grade cabinetwork. In the spring the tree is covered with large panicles of white and pink pea-shaped flowers, and at all seasons it is striking in appearance.

For previous introduction see 54033.

98376. *PICEA PURPUREA* Masters. Pinaceae. Spruce.

A large forest tree often over 100 feet high, native to China. It is closely related to *P. likiangensis*, from which it differs in having purple cones about 2 inches long. The shoots are usually densely covered with pale-gray spreading villose pubescence; the leaves are narrowly lanceolate, about one half inch long, and vary from deep green to glaucous. The trees vary in habit from pyramidal to spreading, and sometimes the branchlets are drooping.

98377. *PINUS TABULAEFORMIS DENSATA* (Masters) Rehd. Pinaceae. Pine.

A tree up to 75 feet high, native to China. The stiff leaves are 3 to 5 inches long, and the obliquely ovoid cones, 2 to 3 inches long, have the ends of the outer scales conspicuously swollen.

98378. *PINUS YUNNANENSIS* Franch. Pinaceae. Yunnan pine.

A large forest tree, native to Yunnan, China. The long slender drooping leaves are up to 10 inches long, and the cones, 2 to 4 inches long, have flat scales.

98379. *PYRACANTHA CRENATO-SERRATA* (Hance) Rehd. Malvaceae. Firethorn.

An evergreen shrub up to 10 feet high, native to central and western China. The branchlets are rusty pubescent, and the elliptic to obovate leaves, 1 to 3 inches long, are entire or crenate, dark green and lustrous above and paler beneath. The umbels of small white flowers are followed by coral-red fruits.

## 98364 to 98387—Continued.

98380. *QUISQUALIS INDICA* L. Combretaceae.  
Rangoon-creeper.

A rambling subscandent shrub, native to India, with opposite obovate leaves 4 inches long and short axillary and terminal spikes of tubular pink or red flowers. The obovoid fruits are 1 to 2 inches long and are sharply five-angled.

98381 to 98387. Collected in Chekiang Province.

98381. *RHAMNELLA FRANGULOIDES* (Maxim.)  
Weberbauer. Rhamnaceae.

A tree up to 30 feet high, native to China and Japan. The long-pointed oblong-ovate leaves, 2 to 5 inches long, are serrulate on the margin, and the small green flowers, in axillary cymes, are followed by cylindrical-oblong black fruits about one-third inch long.

98382. *RHEUM ALEXANDRAE* Batal. Poly-  
gonaceae.

A stout herbaceous perennial, native to China, with a rosette of elliptic-ovate dark glossy-green leaves and flower stems, 3 to 4 feet high, bearing large pale-yellow overlapping leaflike bracts.

For previous introduction see 84049.

98383. *SOPHORA FLAVESCENS* Ait. Fabaceae.

A subshrubby perennial, 3 to 4 feet high, with odd-pinnate leaves of 3 to 6 pairs of elliptical leaflets 1 to 2 inches long and loose racemes of creamy white pea-shaped flowers 1 inch long. It is native to northern China.

For previous introduction see 98124.

98384. *TSUGA CHINENSIS* (Franch.) Pritz.  
Pinaceae.

A large forest tree, up to 150 feet high, native to western China. The branchlets are yellowish at first, later turning pale yellow-gray. The linear leaves, 1 inch long, are glossy dark green above and have broad whitish bands beneath which later become inconspicuous. The ovoid cones, 1 inch long, have lustrous yellow-brown scales.

98385. *XYLOSMA CONGESTUM* (Lour.) Merr.  
Flacourtiaceae.

A shrub or small tree, sometimes spiny, native to China and Japan. The ovate-serrate leaves are 1 to 2 inches long, and the small fragrant yellow flowers, in axillary racemes 1 inch long, are followed by globose black fruits one fourth inch in diameter.

98386. *ZANTHOXYLUM ALATUM PLANISPINUM*  
(Sieb. and Zucc.) Rehd. and Wils. Rutaceae.  
Prickly-ash.

A Japanese shrub 7 to 13 feet high, much branched at the base, sometimes with a short trunk. The dark-brown spreading branches, drooping a little at the tips, bear stout straight spines in pairs and evergreen pinnate leaves, dark green above and paler beneath. The small red fleshy fruits are persistent and emit a very agreeable aromatic odor when bruised. The shrub may be used as an ornamental or as a hedge plant.

For previous introduction see 98085.

98387. *ZANTHOXYLUM SCHINIFOLIUM* Sieb. and  
Zucc. Rutaceae. Prickly-ash.

A graceful Japanese shrub or small tree with attractive compound leaves and, in the autumn, rather conspicuous clusters of greenish or brownish fruits.

For previous introduction see 90676.

98388 to 98392. *VITIS VINIFERA* L.  
Vitaceae. European grape.

From the Union of Soviet Socialist Republics. Cuttings presented by Maj. C. R. Olberg, Tiflis, Transcaucasia, through the commercial attaché, Istanbul, Turkey. Received April 9, 1932.

A collection of commercial varieties introduced for the use of Department specialists.

98388. *Rozviti Kishmish*, light-red raisin grape.

98389. *Zheltii Kishmish*, yellow raisin grape.

98390. *Akepu askjari*.

98391. *Meskahakie*.

98392. *Rozviti Kishmish*, light-red raisin grape.

98393. *CORDIA* sp. Boraginaceae.

From the West Indies. Seeds collected by Gaines R. Wilson, of Miami, Fla., at Albert Town, Fortune Island, Bahamas. Received March 28, 1932. Numbered in April 1932.

A tree growing in poor soil in an exposed position, where it has become both drought and hurricane resistant. The dark-green leaves looked thrifty, although there had been a drought for 4 months.

98394 to 98396. *FICUS* spp. Moraceae.  
Fig.

From Egypt. Cuttings presented by T. W. Brown, director, horticultural section, Cairo. Received April 15, 1932.

98394. *FICUS BENGHALENSIS* L. Banyan tree.

A large tree, 75 to 100 feet high, rooting from the branches. The branchlets are softly pubescent, the broadly ovate coriaceous leaves are 4 to 8 inches long, and the globose red fruits, borne in pairs, are about the size of small cherries. The tree is native to India and northern Africa.

98395. *FICUS ERIBOTRYOIDES* Kunth and  
Bouche.

A tree with straight branches, brown pubescent branchlets, and oblong-ovate, coriaceous leaves 1 foot long and 3 to 4 inches wide. The native country is not known.

For previous introduction see 93271.

98396. *FICUS LACCIFERA* Roxb.

A tropical tree with oval or cordate shining-green leaves up to 7 inches long and smooth oval fruits the size of a gooseberry. Native to Silhet, India.

98397. *BOUGAINVILLEA GLABRA* Choisy.  
Nyctaginaceae. Lesser bougainvillea.

From the Canal Zone. Plants presented by J. E. Higgins, director, Experiment Gardens, Summit. Received April 13, 1932.

A form with pink flowers.

98398. *PERSEA AMERICANA* Mill.  
Lauraceae. Avocado.

From the Society Islands. Bud wood presented by Harrison W. Smith, Papeari, Tahiti. Received April 14, 1932.

*Motuovini*. A variety of excellent flavor and quality, originated by Mr. Smith.

## 98399 to 98417.

From the West Indies. Scions collected by David Fairchild and F. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

## 98399 to 98417—Continued.

**98399.** CITRUS AURANTIFOLIA (Christm.) Swingle. Rutaceae. **Lime.**

No. 2942. From Charlotteville, Tobago, February 20, 1932. Very acid and very juicy fruit; on the same tree were found large fruits with rough skin and small smooth-skinned fruits.

**98400 to 98416.** MANGIFERA INDICA L. Anacardiaceae. **Mango.**

Nos. 98400 to 98406 were presented by E. A. Walter, superintendent of the Agricultural Experiment Garden at St. Lucia, Windward Islands, March 8, 1932.

**98400.** No. 3717. *Tin creme*. A medium-sized oval yellow to green mango with smooth cream-flavored flesh with persistent fibers. It is an early mango in St. Lucia, ripening a small crop in February and March and the main crop from April until August.

**98401.** No. 3718. *La Rose*. A bright rose-colored medium-sized pear-shaped subacid mango which ripens in August.

**98409.** No. 3720. *Tin T'in*. The *Tin* mango seems to be a race of seedlings coming partly true to type. There is a theory that these seedlings came from a grafted mango. They are not immune to anthracnose, but fruit in February and March and again from April to August.

**98403.** No. 3721. *Amelie*. A medium-sized, green-yellow mango which has a red blush if grown in the sun; one of the most prized mangoes of the island. It is a midseason variety and rather stringy and not so good a shipper as the *Julie*.

**98404.** No. 3722. *Imperial*. A large very juicy yellow fruit with a small seed and very little fiber, which ripens in midseason.

**98405.** No. 3723. *Graham*. A seedling of the *Julie*, that has a larger fruit and develops a crimson blush when grown in the sun. It is preferred by many in the West Indies to the *Julie*, which seems to be the standard mango of the islands.

**98406.** No. 3724. *Julie*. This dwarf mango, with wedge-shaped squarish fruit that in sunlight develops a distinct red blush, is becoming the standard mango of the West Indies. It is a midseason variety, yielding a reasonably sure crop, and is a good shipper.

Nos. 98407 and 98408 were presented by Mr. Buffon, head gardener at Jardin d'Essais, Basses Terres, Guadeloupe, French West Indies, March 12, 1932.

**98407.** No. 3787. *D'Or*. A large round yellow mango, not fibrous, with a medium-sized seed and much juicy flesh, rather inclined toward the acid side.

**98408.** No. 3788. *Coq D'Inde* (turkey egg). A small yellow mango about the size of a turkey egg, with thin skin, a large seed, and highly perfumed yellow fibrous flesh. A midseason variety that may prove better than the ordinary "turpentine" mango.

**98409.** No. 3816. *Quanto*. From Tortola, British Virgin Islands, March 18, 1932. A mango of medium size with green skin, a small seed, and sweet yellow flesh without fiber but with a turpentine flavor. The tree is a heavy bearer and is introduced for comparison with the ordinary "turpentine" mango now growing in Florida, as stock or for crossing purposes.

**98410.** No. 3817. *Turkey breast*. From the French side of St. Martin Island, March 17, 1932. A large thick mango with a suture down one side, which gives it the appearance of a turkey's breast. The fruit is said to be

## 98399 to 98417—Continued.

fiberless, but as it was not ripe its quality could not be judged, but it is evidently the best mango of this region.

Nos. 98411 to 98416 were collected March 18, 1932, on Tortola.

**98411.** No. 3818. *Bullhead* or *Miss Niles*. Scions from a seedling tree 70 years old, on the estate of J. S. W. Georges, at Bough Bay. The large light-yellow fruits, up to a pound in weight, have small seeds, light-yellow, very juicy flesh with short fibers, and are not so strong flavored as most mangoes.

**98413.** No. 3819. *Cottage*. Scions from an old seedling tree 3 feet in diameter which was loaded with both fruit and flowers. The fruits are medium to small, very sweet, and rather fibrous. Evidently a rather early sort, which may have some character worth preserving.

**98413.** No. 3826. *Royal*. Presented by Roy Campbell, on whose place the tree was growing. A medium-sized seedling mango of scarlet color, not very fibrous, and of good flavor, but not the best. Its color will make it a valuable variety for use in breeding work.

**98414.** No. 3831. *Tortola seedling*. From an old seedling tree growing in the orchard plot at the Tortola Experiment Station. The fruit is said to be of good quality, somewhat acid, and very juicy, with less fiber than the common type. The skin is yellow, overlaid with a dark-red blush, similar in shape to the *Julie*, but larger, as the fruits weigh from three-fourths to 1 pound each.

**98415.** No. 3832. *Rector* or *Boar hog*. Collected near Sea Cow Bay. A large sweet yellow fruit with very little fiber. It is one of the largest-fruited mangoes on the island and is probably a midseason or late variety.

**98416.** No. 3833. *Kidney*. Collected near the experiment station. The large fruits are said to be greenish yellow when ripe and one of the best seedling mangoes on the island.

**98417.** ARMOURIA BEATA Lewton. Malvaceae.

No. 2617. A new genus and species from Beata Island, Dominican Republic, March 22, 1932. Seeds and scions of a shrub or small tree 15 to 20 feet high found on a rocky cliff. The leaves, over 2 inches long, are cordate, subobtusate, roughish above, paler and softly stellate-tomentose beneath. The beautiful salver-shaped cream-colored flowers are solitary and over 3 inches in diameter.

**98418 to 98444.** ACER spp. Aceraceae.

From England. Plants purchased from W. Fromow & Sons, Chiswick, London, W. Received April 13, 1932.

**98418 to 98427.** ACER PALMATUM Thunb.

Japanese maple.

**98418.** *Atropurpureum*; a vigorous handsome plant with bold dark-purple foliage.

**98419.** *Corallinum*; a pretty small-growing variety with bright coral-red foliage in spring.

**98420.** *Crispum*; a tree of very distinctive erect habit with green red-stalked leaves which have convoluted edges.

**98421.** *Decompositum*; a distinct variety with pretty green leaves.

**98422.** *Dissectum atropurpureum*; a variety with fine purple deeply serrated leaves, 9- to 10-parted.

**98423.** *Dissectum ornatum*; a variety with bronze-purple, deeply serrated leaves, 9- to 10-parted. It is very similar to *dissectum atropurpureum* except that the leaves are more bronzy.

## 98418 to 98444—Continued.

98424. *Dissectum palmatifidum*; a tree with bright-green very fine palmately divided leaves.
98425. *Dissectum variegatum*; a tree with very fine palmately divided leaves, prettily variegated rose and white.
98426. *Involutum*; a tree with five-lobed serrated leaves, edged with rose in the spring.
98427. *Involutum variegatum*; a tree with five-lobed serrated leaves, prettily variegated with white in the center and edged with rose; very pretty in the spring.
- 98428 to 98432. ACER JAPONICUM Thunb.  
Fullmoon maple.
98428. A tree with light-green, many-lobed leaves which change in summer to red tints.
98429. *Aureum*; a splendid bright-golden form of the above; the finest golden maple.
98430. *Dissectum*; a distinct species with large broad foliage of dark green, marbled with yellow.
98431. *Laciniatum*; a beautiful form whose leaves have deeply lacinated lobes which are light green in the spring, changing to reddish in the summer and crimson in autumn.
98432. *Uribanishki*.
- 98433 to 98444. ACER PALMATUM Thunb.  
Japanese maple.
98433. *Laciniatum*; bright-green, deeply lacinated leaves which change to red in autumn.
98434. *Laciniatum atropurpureum*; a dark-purple form of the above.
98435. *Linearifolium*; a very distinct form with light-green leaves having seven very narrow lobes.
98436. *Linearifolium purpureum*; a dark-purple form of the preceding.
98437. *Reticulatum* (flavescens); a form with pale yellow-green, seven-lobed, deeply serrated leaves with dark-green veins.
98438. *Roseum marginatum*; a very distinct and charming variety having light-green leaves with deeply cut lobes, margined with rose.
98439. *Rufescens*; a form with pale-green sharply serrated leaves with seven lobes.
98440. *Sanguineum*; a striking variety with five-lobed leaves of deep reddish crimson.
98441. *Sanguineum variegatum*; a striking variety with five-lobed leaves of deep reddish crimson variegated with bright scarlet, changing to white.
98442. *Septemlobum*; a form with seven-lobed, pale-green leaves which change to red in the autumn.
98443. *Seigenii*; a pretty variety with bright-red leaves in the spring which change in the summer.
98444. *Variegatum* (versicolor); a form with variegated green leaves spotted and striped, rose and white.

98445 to 98447. MANGIFERA INDICA L.  
Anacardiaceae. Mango.

From the West Indies. Scions collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 14, 1932.

Presented February 17, 1932, by R. O. Williams, director, Trinidad Botanic Garden.

98445. No. 2898. *Graham*; a seedling of the *Julie* mango, originated locally and named after the

## 98445 to 98447—Continued.

originator. When grown in the wet part of the island, the mango is a yellowish green, but when grown in dry parts of the island it develops a crimson cheek. The fruit is larger than the *Julie*, and the tree is a good bearer.

98446. No. 2899. *Pere Louis*; a medium-sized, yellow mango of very good flavor and very little fiber. It has no turpentine taste.

98447. No. 2900. *Roseau*; a yellow-green mango of good flavor and little fiber, with no turpentine flavor. It is not as good as the *Julie* and is not a good shipper.

98448. CITRUS AURANTIUM L. Ruta-  
ceae. Seville orange.

From the West Indies. Seeds collected on Dominica, Windward Islands, and presented through the Division of Fruit and Vegetable Crops and Diseases. Received April 14, 1932.

*Dominican sour orange*.

98449. CITRUS GRANDIS (L.) Osbeck.  
Rutaceae. Grapefruit.

From the West Indies. Plants collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

No. 2865. Presented February 16, 1932, by R. O. Williams, director, Trinidad Botanic Gardens. A wild grapefruit which is oval in shape and quite distinct from the common grapefruit of Florida.

98450 to 98481. RHODODENDRON spp.  
Ericaceae.

From England. Plants purchased from Harry White, Sunningdale Nursery, Windlesham, Surrey. Received April 15, 1932.

98450 to 98456. RHODODENDRON AZALEODENDRON  
Vilm. and Bois.

A collection of rhododendron-azalea hybrids.

98450. *Goventianum*.

98451. *Odonatum*.

98452. *Jackie*.

98453. *Katie*.

98454. *Nellie*.

98455. *Smithii aureum*.

98456. *Torlonianum*.

98457. RHODODENDRON AMBIGUUM HemsL.

A low Chinese evergreen shrub with lanceolate leaves 2 to 3 inches long and flowers which are pale yellow spotted with greenish yellow and 2 inches across.

For previous introduction see 86758.

98458. RHODODENDRON CALOSTROTUM Balf. and Ward.

A low shrub a foot high, native to northeastern Burma between 11,000 and 12,000 feet altitude. The obovate leaves 1 inch long are densely covered above with greenish scales, and the lower surface is pale red with numerous flaky scales. The widely funnel-shaped flowers, 1 inch long, are bright red purple and are borne in pairs at the ends of the branchlets.

For previous introduction see 97384.

98459. RHODODENDRON CANTABILE Balf. f.

A shrub up to 3 feet high with small oval-elliptic leaves densely dotted brown beneath. The small flowers are a deep purplish blue.

For previous introduction see 59564.

## 98450 to 98481—Continued.

## 98490. RHODODENDRON CEPHALANTHUM Franch.

A shrub 2 feet high with small elliptical leaves which have brownish wool beneath. The tubular flowers are white.

For previous introduction see 59029.

## 98461. RHODODENDRON CHARTOPHYLLUM Franch.

A distinct species with the general characteristics of *R. yunnanense*, but the leaves are usually deciduous, more narrowly oblanceolate, and entirely wanting the bristles on the upper surface, which are typical of the true *R. yunnanense*. The form with leaves completely deciduous is called *R. chartophyllum praecox*. No doubt the two species, both of which grow in Yunnan, hybridize freely, and this probably explains the confusion between them in gardens.

For previous introduction see 97622.

## 98462. RHODODENDRON DASYPETALUM Balf. and Forr.

A low shrub 2 to 3 feet high, with scaly branchlets, native to Yunnan, China. The oblong-elliptic leaves, less than an inch long, are densely covered beneath with light-green overlapping scales. The openly funnel-shaped flowers, 1 inch long, are borne in terminal clusters of 1 to 2 flowers, and the bright purple-rose corolla is softly pubescent outside.

## 98463. RHODODENDRON FASTIGIATUM Franch.

A low erect shrub with scaly branchlets, native to Yunnan, China. The elliptic-oblanceolate leaves, one third inch long, are densely scaly on both surfaces, and the light-purple flowers, one-half inch long, are borne in terminal clusters of 4 or 5.

## 98464. RHODODENDRON SARGENTIANUM Rehd. and Wils.

A low alpine shrub up to 2 feet high, native to Szechwan, China. The broadly elliptic mucronate leaves half an inch long are reticulate and shining above, clothed with loose flaky scales beneath. The widely tubular lemon-yellow flowers, less than 1 inch long, are densely scaly outside and are borne in loosely capitate few-flowered clusters.

## 98465. RHODODENDRON HIPPOPHAEOIDES Balf. and Smith.

A shrub up to 3 feet high, native to swampy situations in the Likiang Snow Range, Yunnan, China. The small narrowly oblanceolate leaves obtusely mucronate are covered with contiguous scales above, more densely below; the scales often slightly overlapping are a uniform pale gray. The small flowers, pale lilac to rose, are not spotted.

For previous introduction see 97625.

## 98466. RHODODENDRON HYPOLEPIDOTUM (Franch.) Balf. and Forr.

A shrub over 4 feet high with scaly branchlets, found in open situations in pine forests at 13,000 feet altitude in southeastern Tibet. The oblanceolate leaves up to 2 inches long are scaly on both surfaces, the scales below being rather dense and very unequal, flaky, some pale, others darker; lateral nerves distinct. The small yellow flowers are in terminal clusters of 5 or 6.

For previous introduction see 59076.

## 98467. RHODODENDRON IMPEDITUM Balf. and Smith.

A low shrublet native to the Likiang Snow Range, Yunnan, China, between 15,000 and 16,000 feet altitude. The short branchlets are covered with small black scales, and the broadly elliptic leaves, less than 1 inch long, are deeply scaly on both surfaces, the scales below being about half their own diameter apart, more or less uniform but some darker. The openly funnel-shaped

## 98450 to 98481—Continued.

flowers, mauve or light purplish blue, are in terminal clusters of 1 or 2.

For previous introduction see 59263.

## 98468. RHODODENDRON LYSOLEPIS Hutchins.

A dwarf shrub with erect branches and spreading or recurved oblong-elliptic leaves, glistening glandular scaly above and with scattered scales beneath. The deep-violet to pink-violet flowers, 1 inch across, in terminal clusters of three, have a short-tubed corolla with the limb spreading at right angles. This specimen was described from plants cultivated at Kew.

## 98469. RHODODENDRON MULIENSE Balf. and Forr.

A low shrub less than 3 feet high with densely scaly branchlets. The oblong-elliptic leaves, less than 1 inch long, are densely scaly on both surfaces, and the bright-yellow flowers are in compact 5- to 6-flowered terminal umbels.

For previous introduction see 94120.

## 98470. RHODODENDRON MYRTILLOIDES Balf. and Ward.

A dwarf shrublet, 3 to 4 inches high, native to northeastern Burma. The obovate-lanceolate leaves less than 1 inch long are rounded to a thick point and are glaucous beneath with a few scattered scales. The solitary terminal shortly bell-shaped flowers about one-half inch long are plum colored outside and maroon inside and are on slender peduncles over 1 inch long.

## 98471. RHODODENDRON RACEMOSUM Franch.

Mayflower rhododendron.

An upright Chinese shrub up to 6 feet high, with scaly branchlets, elliptic to obovate leaves which are glabrous above and glaucous beneath, and few-flowered clusters of pink flowers so abundantly produced as to completely cover the plant.

For previous introduction see 97400.

## 98472. RHODODENDRON OLEIFOLIUM Franch.

An erect shrub native to Yunnan, China. The narrowly lanceolate evergreen leaves, 2 inches long, are glabrous above and densely glandular scaly beneath. The pink to almost white flowers, 1 inch long, are borne in 1- to 2-flowered terminal clusters.

For previous introduction see 58505.

## 98473. RHODODENDRON RUBIGINOSUM Franch.

A rigid evergreen shrub or tree up to 30 feet high, with scaly purplish branches, native to Yunnan, China, in open situations in forests between 7,500 and 11,000 feet altitude. The ovate to lanceolate leaves, 2 to 3 inches long, are densely covered beneath with brown-red scales. The broadly funnelform flowers, varying from bright red to mauve spotted with brown, are produced in 4- to 8-flowered terminal clusters.

For previous introduction see 86762.

## 98474. RHODODENDRON RUSSATUM Balf. and Forr.

A small shrub up to 4 feet high, native to Yunnan, China. The oblong-lanceolate leaves, 1 inch long, are densely scaly on both surfaces, being rusty brown beneath. The white-throated deep purple-blue flowers are openly funnel-shaped and are borne in terminal clusters of 4 or 5.

## 98475. RHODODENDRON SCINTILLANS Balf. and Smith.

A small shrub with erect branches and densely scaly branchlets, native to Yunnan, China. The oblanceolate leaves, one-half inch long, are densely scaly on both surfaces, and the lavender-blue openly funnel-shaped flowers, one-half inch long, are borne in terminal clusters of three from the upper axils of the shoots.

For previous introduction see 59598.

## 98450 to 98481—Continued.

**98476. RHODODENDRON SMIRNOWII** Trautv.  
Smirnow rhododendron.

A shrub or small tree about 20 feet high, with dark-green leaves, gray-hairy beneath, and compact heads of rose-red flowers each about 3 inches across. Native to the Caucasus region.

For previous introduction see 79042.

**98477. RHODODENDRON TELMATEIUM** Balf. and Smith.

A low shrubby plant up to 3 feet high, with oblong or narrowly lanceolate leaves about one-half inch long and solitary rose-purple flowers one-half inch long. Native to Yunnan, China.

For previous introduction see 94130.

**98478. RHODODENDRON UNGERNII** Trautv.

A shrub or small tree up to 20 feet high, with white-tomentose branchlets, native to the Caucasus region. The thick leathery oblong-lanceolate leaves are 4 to 8 inches long, glabrous and dark green above and covered beneath with gray to fawn dense woolly tomentum and scattered long-stalked glands. The funnel-campanulate, pale-rose flowers, 1 to 2 inches long, are borne in 20- to 30-flowered lax racemes.

**98479. RHODODENDRON WEYRICHII** Maxim.

A deciduous shrub up to 15 feet high, native to Japan and China. The broadly ovate to rhombic leaves, 1 to 3 inches long, are in clusters of 2 to 3 at the tips of the branchlets and turn vinous-purple in autumn. The rotate-funnel-form red flowers, 1 to 3 inches across, appear before or with the leaves.

**98480. RHODODENDRON YUNGNINGENSE** Balf. f.

A low shrub 1 to 2 feet high with short densely scaly branchlets, native to Szechwan, China. The oblong-lanceolate leaves, one-third inch long, are densely covered with rust-brown scales, and the openly funnel-shaped deep-purple flowers are one-third inch long.

**98481. RHODODENDRON YUNNANENSE** Franch.  
Yunnan rhododendron.

A low shrub, 6 feet or less high, with narrowly elliptic somewhat hairy leaves and few-flowered clusters of broadly funnel-shaped flowers, white with the upper lobes spotted blood red. Native to Yunnan, China.

**98482. RHODODENDRON CAUCASICON** Pall.  
Ericaceae, Caucasian rhododendron.

From England. Plants purchased from Robert Veitch & Son, Ltd., Royal Nurseries, Exeter. Received April 15, 1932.

*Cunningham's sulphur.*

**98483 to 98503. Phoenicaceae. Palm.**

From the West Indies, British Guiana, and Surinam. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 18, 1932.

**98483. ACROCOMIA SCLEROCARPA** Mart.  
Macauba palm.

No. 2961. From St. Vincent, Windward Islands, February 4, 1932. A beautiful palm 40 feet high, with a very spiny trunk, particularly when young, as its finely pinnate leaves are graceful and drooping. The large bunches of fruits are green with brown scurfy hairs at the basal portion.

For previous introduction see 93399.

**98484. ARCHONTOPHOENIX ALEXANDRAE** (F. Muell.) Wendl. and Drude.

No. 2983. From the Botanic Garden, Georgetown, British Guiana. A pinnate-leaved palm,

**98483 to 98503—Continued.**

70 to 80 feet high, with leaves several feet long of lanceolate usually entire leaflets, 1 to 2 feet long, and whitish beneath. The green-yellow flowers are borne in a cluster about 1 foot long and are followed by small round fruits. It is native to Queensland, Australia.

For previous introduction see 97805.

**98485. ARECA TRIANDRA** Roxb.

No. 2954. From the Botanic Station, Scarborough, Tobago. A graceful spineless palm ultimately about 25 feet high, usually with several trunks which bear crowns of pinnate leaves 4 to 6 feet in length. The fruits, about the size of an olive, are orange-scarlet. Native to India.

For previous introduction see 97807.

**98486. ARECA** sp.

No. 3727. Collected March 10, 1932, on the island of Martinique.

**98487. BORASSUS FLABELLIFER** L. Palmyra palm.

No. 2979. From the Botanic Gardens, Georgetown, British Guiana, February 25, 1932. A handsome though slow-growing palm found on the dry coastal regions of Ceylon where it appears able to withstand any amount of lime and is said to have been used successfully as a sand binder. In the number of ways in which this palm is used in Ceylon, it rivals the coconut.

For previous introduction see 93318.

**98488. COCCOTHRINAX MARTII** (Griseb. and Wendl.) Beccari.

No. 3899. From the United States Naval Station, Guantanamo Bay, Cuba, March 25, 1932. A slender fan palm 25 feet high growing in calcareous and hard red clay soil where the rainfall is 16 inches annually. It resembles the silver palm, but has a bottle-like base.

**98489. COCCOTHRINAX** sp.

No. 3873. From a tree in the Agricultural Experiment Station, Tortola, British Virgin Islands, March 19, 1932. A rather slender fan palm with tips of the pinnae drooping and the basal pinnae twisted in a position of a spiral, making some of the pinnae cross over the petiole of the leaf in a very characteristic manner. The shining black fruits are large for the genus.

**98490. RHYTICOCOS AMARA** (Jacq.) Beccari  
(*Cocos amara* Jacq.).

No. 3728. From Martinique. A tall slender perfectly straight feather palm 50 feet high, with leaves 15 feet long. The golden-yellow fruits, 2 inches long by 1½ inches wide, are covered with a pulp filled with long fibers. This pulp ferments easily and develops butyric acid. The seed is large and of the characteristic coconut shape.

For previous introduction see 97282.

**98491. COPERNICIA CERIFERA** Mart.  
Carnauba palm.

No. 2977. From the Botanic Garden, Georgetown, British Guiana. The wax palm of Brazil, which has fan-shaped leaves and grows to a height of 25 feet. From the leaves is obtained carnauba wax which is used in making phonograph records.

For previous introduction see 97811.

**98492. ELAeis MELANOCOCCA** Gaertn.

No. 3683. Collected near the Station Onverwacht, Surinam, March 3, 1932. A wide-spreading low wild palm which grows in damp situations. It is closely related to the African oil palm (*Elaeis guineensis*). A clear oil is extracted from the kernels in small quantities by the natives, who prize it highly for cooking.

For previous introduction see 97911.



## 98483 to 98503—Continued.

## 98493. EUTERPE OLERACEA Mart.

No. 2955. *Manac* or *Manaque*. From Tobago, February 20, 1932. A graceful palm with a trunk seldom more than 4 inches in diameter. It is said that fats suitable for oils and soaps can be derived from the blue-black berrylike fruits.

For previous introduction see 97813.

Nos. 98494 to 98496 were collected in the Georgetown Botanic Garden, British Guiana.

98494. HYPHAENE THEBAICA (L.) Mart.  
Dour palm.

No. 2980. A palm about 30 feet high, which is noted as one of the few branching palms. It grows in alkaline sandy soils and is native from Upper Egypt to central Africa. The stems of old trees sometimes fork 3 or 4 times. The beautiful yellow-brown fruits are borne in long clusters of 100 to 200. In Upper Egypt the poor people eat the fibrous husk, which tastes much like gingerbread but is rather hard. The hard tough wood is used for domestic utensils.

For previous introduction see 97814.

## 98495. LICUALA GRANDIS (Bull.) Linden.

No. 2978. A dwarf palm with the stem clothed with the dead leaf sheaths. The erect spreading fan-shaped leaves have closely plicate segments which are 2-lobed at the end. Native to the island of New Pommern, Bismarck Archipelago.

For previous introduction see 97815.

## 98496. LIVISTONA HOOGENDORPH Andre.

No. 2982. A form with blue fruits. A tall Javanese palm with fan-shaped leaves 4 to 6 feet wide on spiny petioles 3 to 5 feet long, red-brown at the base and becoming olive green near the blade. The blades are made up of 10 to 12 plicate pendulous segments with 5 to 7 acute lobes at the apex.

For previous introduction see 97914.

## 98497. MANICARIA SACCIFERA Gaertn.

No. 2940. *Monkey-cap* palm: Collected February 18, 1932, near Sangre Grande, Trinidad, in deep shady forest in poor wet soil that is probably acid. Unlike other palms, this Brazilian species has entire leaves which become about 30 feet long and 5 feet wide. The trunk is erect, ringed, and unarmed, and 15 to 20 feet high. The natives of Brazil use the immense leaves of this palm for thatching their huts and also for making a coarse cloth.

For previous introduction see 82600.

## 98498. MAURITIA FLEXUOSA L. f.

No. 2984. From the Botanic Garden, Georgetown, British Guiana, February 25, 1932. A palm native to tropical Brazil, which grows to a height of 150 feet and 30 inches in diameter. The fan-shaped leaves are from 9 to 18 feet long. This is one of the so-called ivory-nut palms. The fruit is spherical, about the size of a small apple, and covered with smooth reticulated scales. The spadix when loaded with fruit is of immense weight, often more than two men can carry.

For previous introduction see 97915.

## 98499. ENGLEROPHOENIX REGIA (Mart.) Kuntze.

No. 3684. *Maripa* palm. From the market at Paramaribo, Surinam, March 3, 1932. A massive ornate palm up to 50 feet high, with persistent leaf petioles and immense leaves, reminding one of the *Cohune*. The subacid fruits have thin fleshy pulp and are much appreciated by the natives.

For previous introduction see 97912.

## 98500. RAPHIA VINIFERA Beauv.

No. 3772. From Fort de France, Martinique, March 10, 1932. The *wine* palm of Africa. A

## 98483 to 98503—Continued.

striking pinnate palm with immense leaves rising almost upright from the rather low trunk, somewhat as do the leaves of the *Cohune* palm. It bears immense clusters of very decorative fruits that are covered with scales and polished like pieces of jade.

For previous introduction see 95211.

## 98501. COCCOTHRINAX BARBADENSIS (Lodd.) Beccari.

No. 3783. Presented by Mr. Buffon, superintendent of the Jardin d'Essais, Basseterre, St. Kitts, British West Indies, March 13, 1932. A tall slender fan palm with the aspect of the *Silver* palm, but much larger. The clusters of greenish fruits which later become black are not particularly attractive. The palm seems adapted to a strongly calcareous soil.

98502. LIVISTONA AUSTRALIS (R. Br.) Mart.  
Australian fan palm.

No. 3686. From Paramaribo, Surinam, March 4, 1932. A tall slender palm from 30 to 40 feet high, with a smooth trunk 8 to 10 inches in diameter and a dense crown of circular leaves 3 to 4 feet in diameter, divided nearly to the base into narrow plicate segments. The moderately hard light-colored wood is occasionally used for light construction work; the leaves are used for making baskets; and the unexpanded fronds, after being dipped in boiling water, are dried, shredded, and the fiber used in making hats resembling Panama hats.

For previous introduction see 97917.

## 98503. THRINAX sp.

No. 3689. Presented by Dr. G. Stahel, Paramaribo, Surinam, March 4, 1932. A form with white fruits.

## 98504. PIGAFETTIA ELATA (Mart.) Wendl. Phoeniceae. Palm.

From Buitenzorg, Java. Seeds presented by the 'sLands Plantentuin (Botanische Tuin). Received April 18, 1932.

A tall ornamental palm with a stout trunk, spiny above, and spreading pinnate foliage resembling that of the coconut. Native to the East Indies.

For previous introduction see 93981.

## 98505 and 98506. VITIS VINIFERA L. Vitaceae. European grape.

From Turkey. Cuttings received through the American Embassy, Istanbul. Received April 19, 1932.

Native varieties of grapes from the collection at the Halkali Agricultural School, Istanbul.

98505. *Chaoush*.98506. *Pembe Chaoush*.

## 98507. AMYGDALUS PERSICA L. Amygdalaceae. Peach.

From Java. Seeds presented by A. M. Cramer, Wonosobo. Received April 19, 1932.

A naturalized peach from 6,000 feet altitude at Tosari; introduced for the use of Department specialists.

## 98508. CITRUS LIMONIA Osbeck. Rutaceae. Lemon.

From Morocco. Seeds presented by H. Brayard, director, Experiment Station, Marrakech. Received April 22, 1932.

Introduced for rootstock experiments by Department specialists.

**98509. FICUS sp. Moraceae. Fig.**

From Cuba. Cuttings presented by Señor Antonio Portuondo, Director General of Agriculture, Habana. Received April 22, 1932.

An ornamental ficus, somewhat like *F. mysorensis*, but with a heavy coating of brown hairs on the under side of the leaves.

**98510 to 98514. Phoenicaceae. Palm.**

From the West Indies, British Guiana, and Surinam. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 13, 1932.

**98510. ASTROCARYUM sp.**

No. 2957. Collected on Tobago Island.

**98511. ASTROCARYUM SEGREGATUM** Drude.

No. 2987. Purchased February 23, 1932, in the market at Georgetown, British Guiana. A rather low-growing Brazilian palm with a spiny trunk and large pinnate leaves armed with large stout black spines along the midribs. The fragrant, oily, smooth fruits are about 2 inches in diameter. Native to eastern Brazil.

For previous introduction see 97809.

**98512. ASTROCARYUM PARAMACA** Mart.

No. 2685. Purchased in the market at Paramaribo, Surinam, March 2, 1932. A low-growing very attractive shade-loving palm from 6 to 8 feet high with the pinnae all on one plane. The inflorescence consists of a single central upright spadix to which the fruits are attached by peduncles 1 inch long. The fruits are small, 1 inch long, with tiny black spines and a tough oily endosperm.

For previous introduction see 97910.

**98513. COCCOTHRINAX sp.**

No. 2614. From Beata Island, Dominican Republic. A very handsome slender fan palm with a trunk 20 feet high and about 3 inches in diameter. The under side of the leaves is silvery and the fruit is dark purple. Found on sand dunes near the seacoast.

For previous introduction see 96483.

**98514. MAURITIA FLEXUOSA** L. f.

No. 3652. Collected in the Lamaha Savanna, British Guiana, February 26, 1932.

For previous introduction see 98498.

**98515. DIOSCOREA sp. Dioscoreaceae.****Yam.**

From Puerto Rico. Tubers presented by T. B. McClelland, director, Agricultural Experiment Station, Mayaguez. Received April 19, 1932.

*Morado*; so called from its purple color just below the epidermis. The flesh below this is white or cream colored, and is of good quality. In comparative trials this year at the experiment station this yam outyielded all other varieties. The production from one plant was 22 pounds, but this figure is sometimes nearly doubled.

**98516 to 98519.**

From the West Indies, British Guiana, and Surinam. Seeds and tubers collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

**98516. COCOS NUCIFERA** L. Phoenicaceae.**Coconut.**

No. 2724. *Claret*. Presented by S. H. Walter, curator, Botanic Garden, St. Lucia, Windward Islands, February 3, 1932. Seeds of a distinct variety with claret-colored husk. This is apparent only when the young coconut husk is cut.

**98516 to 98519—Continued.****98517. XANTHOSOMA sp. Araceae.****Yautia.**

No. 2908. Tubers purchased in the market at Paramaribo, Surinam, March 2, 1932.

**98518. DIOSCOREA TRIFIDA** L. f. Dioscoreaceae.**Yampi.**

No. 3677. *Bush yam*. Presented February 29, 1932, by Mr. Collins, secretary of the British Guiana Producers' Association in Georgetown, British Guiana. This is the yam grown by the Negroes of the interior. It is considered the best one grown in the colony.

**98519. XANTHOSOMA CARACU** Koch and Bouche, Araceae.**Yautia.**

No. 3768. March 8, 1932. Tubers purchased in the market at Castries, St. Lucia. Remarkable for their large size and uniform shape.

**98520. ANANAS SATIVUS** Schult. f. Bromeliaceae. **Pineapple.**

From Ceylon. Plants purchased from the manager of the publication depot and central seed store, Department of Agriculture, Peradeniya. Received April 25, 1932.

*Mauritius.***98521 to 98523. Phoenicaceae. Palm.**

From the West Indies and British Guiana. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

**98521. NYPA FRUTICANS** Wurmb.**Nipa palm.**

No. 2981. Presented March 23, 1932, by Professor Dash, Department of Agriculture, Georgetown, British Guiana. A very ornamental palm with a stout creeping underground stem and pinnate leaves about 20 feet long in erect clusters. The flat fruits, 5 inches long, 4 inches wide, and 2 inches thick, are crowded into a large round head which is borne on a special erect stalk. The juice obtained by cutting this stalk just below the fruiting head is a promising source of sugar and alcohol. The leaves are extensively used for thatching and for making baskets and mats.

**98522. MAURITIA FLEXUOSA** L. f.

No. 3652. Collected in the Lamaha Savanna, British Guiana, February 26, 1932.

For previous introduction and description see 98514.

**98523. MAURITIA SETIGERA** Griseb. and Wendl.

No. 2929. From the Scarborough Botanic Station, Tobago, February 19, 1932. A fan palm 60 feet high of magnificent proportions. Its fruits are covered with polished brown overlapping scales, are as large as hens' eggs, and very attractive. The tree was growing in acid soil and will probably do well in soil in which there is a considerable quantity of lime.

**98524 to 98536. AGROPYRON spp. Poaceae. Wheatgrass.**

From the Union of Soviet Socialist Republics. Seeds presented by N. Vavilov, Bureau of Introduction, Leningrad. Received April 8, 1932.

A collection of grasses to be tested by Department specialists for resistance to drought.

**98524 and 98525. AGROPYRON CRISTATUM** (L.) Gaertn.

**98524.** No. 7027. From the Omsk Experiment Station.

**98525.** No. 9051. From the Saratov Institute for the Study of Drought.

**98526. AGROPYRON ELONGATUM** (Host) Beauv.

No. 9052. From the Saratov Institute for Study of Drought.

## 98524 to 98536—Continued.

98527. *AGROPYRON GMELINI* (Griseb.) Scribn. and Smith.

No. 9053. From the Saratov Institute for the Study of Drought.

98528. *AGROPYRON ORIENTALE LASIANTHUM* Boiss.

No. 9026. From the Saratov Institute for the Study of Drought. An annual grass thickly branched at the base, with numerous mostly prostrate stems scarcely 8 inches high. Native to Asia Minor and northern Africa.

For previous introduction see 98201.

98529 to 98531. *AGROPYRON REPENS* (L.) Beauv.

For previous introduction see 94258.

98529. No. 9014. From the Experiment Station, Omsk, Siberia.

98530 and 98531. From the Saratov Institute for the Study of Drought.

98530. No. 9055. 98531. No. 9035.

98532 to 98534. *AGROPYRON SIBIRICUM* (Willd.) Beauv.

98532. No. 9009. From the Experiment Station, Omsk, Siberia.

98533. No. 9033. From the Saratov Institute for the Study of Drought.

98534. No. 5305. From Kasakstan, Aktyubinsk.

98535. *AGROPYRON TENERUM* Vasey.

No. 7786. From the Experiment Station, Omsk, Siberia.

98536. *AGROPYRON SIBIRICUM* (Willd.) Beauv.

No. 7951. From the Saratov Institute for the Study of Drought.

98537 to 98544. *ZEA MAYS* L. Poaceae. Corn.

From Australia. Seeds presented by Dr. H. Wenzholz, director of plant breeding, Department of Agriculture, Sydney, New South Wales. Received February 18, 1932.

A collection of corn from the Glen Innes Experiment Farm, introduced for the use of Department specialists.

98537. 43-1-3-4-1. 98541. 43-1-2-2-1.

98538. G-43-2-3-4-2. 98542. G-43-2-3-3-2.

98539. G-55-5-1-1-1. 98543. G-55-5-1-1-2.

98540. G-43-1-1-5-1. 98544. G-44-1-1-2-1.

## 98545 to 98561.

From the West Indies and British Guiana. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

98545. *ATTALEA COHUNE* Mart. Phoenicaceae. Cohune palm.

No. 2746. From the Botanic Garden on St. Vincent, Windward Islands. A magnificent feather-leaved palm, native to the West Indies and Central America, which reaches a height of 40 feet, with leaves about 20 feet long, produced abundantly at the top of the trunk. The yellowish flowers are borne very freely, and the ovoid fruit, 2 to 3 inches long, contains a seed or nut which yields an oil of considerable value, as it is of high quality and finds a ready sale for cooking purposes.

For previous instructions see 97542.

## 98545 to 98561—Continued.

98546. *BYRSONIMA SPICATA* (Cav.) DC. Malpighiaceae.

No. 2912. *Serrette*. From the Avena Forest Reserve in the northern part of Trinidad, February 16, 1932. A large tree with a girth of 10 feet, found in poor sandy soil. The narrow leaves are shiny green above the rusty brown beneath, and the yellow flowers, followed by acid edible fruits of the same color, make the tree a showy ornamental. The tough light wood is useful for general construction, and the bark is a source of tannin.

For previous introduction see 62006.

98547. *CARICA PAPAYA* L. Papayaceae. Papaya.

No. 2915. From Roseau, Dominica, Leeward Islands, January 29, 1932. A very sweet, firm-fleshed, large, long-fruited papaya grown from seed brought from São Paulo, Brazil, by Mrs. Green of Dominica. Introduced for comparison with varieties now growing in the United States.

98548. *CARYOCARUM TUBERCULOSUM* (Aubl.) Baill. Caryocaraceae.

No. 2999. *Souari*. Presented February 29, 1932, by Mr. Collins, secretary of the British Guiana Producers' Association, Georgetown. A tree native to tropical America, up to 100 feet high, with digitately 3- to 5-foliolate leathery leaves and large white flowers in terminal racemes, followed by large drupaceous fruits having a hard stone and an edible seed, one of the very largest and finest of the tropical world. It is nearly 3 inches long, over 1 inch wide, and almost 1 inch thick. The flavor is delicate, reminding one of the Brazil nut, but it is not so oily.

98549. *COLVILLEA RACEMOSA* Boj. Caesalpinjaceae.

No. 2907. From the Botanic Garden, Trinidad, February 16, 1932. A tree said to become from 40 to 50 feet high. The pinnate leaves are 3 feet long, and the brilliant orange-scarlet curiously shaped flowers with 10 protruding stamens are borne in drooping racemes more than a foot long. The tree was discovered in Madagascar in 1824 and named for the Governor of Mauritius, Sir Charles Colville. In all probability it will stand no more frost than the poinciana. Like other leguminous trees, it is readily propagated from seeds.

For previous introduction see 79538.

98550. *COUROUPITA GULANENSIS* Aubl. Lecythidaceae.

No. 2904. From Port-of-Spain, Trinidad, February 13, 1932. The famous *Cannon-ball* tree, distinguished by the trunk being covered for many feet with short crooked branches that bear showy flowers of the strangest structure, like a mouse trap, followed by fruits the size and shape of a cannon ball. These fruits are a russet brown and are packed with a pulp full of seeds that, when ripe, has one of the most repellent odors in the vegetable kingdom. The pulp stains anything it touches an inky black.

For previous introduction see 76777.

98551. *CYRSTOCHYRS RENDA* Blume. Phoenicaceae. Palm.

No. 2834. *Sealing-wax* palm. From Port-of-Spain, Trinidad. A handsome palm with scarlet leaf sheaths. A Sumatran palm of stately habit about 25 feet high, with a slender spineless trunk crowned by a graceful cluster of pinnately divided leaves.

For previous introduction see 97546.

98552. *EUGENIA CALYCOLPOIDES* Griseb. Myrtaceae.

No. 2854. From the Trinidad Botanic Garden, February 13, 1932. A small tree, native to Trini-

## 98545 to 98561—Continued.

dad, with oblong-lanceolate membranous leaves 2 to 3 inches long. The small flowers are borne in axillary fascicles and are followed by ovoid scarlet berries one half inch long, said to be edible.

**98553. JAPARANDIBA AUGUSTA (L.) Kuntze** (*Gustavia augusta* L.). Lecythidaceae.

No. 2853. Presented February 13, 1932, by R. O. Williams, director, Botanic Garden, Port-of-Spain, Trinidad. A small evergreen tree, native to tropical America, which bears flowers 4 inches across, creamy white tinged with rose inside and externally rose colored. The stamens form a circle in the center of the flowers and are white at the base with rosy filaments and yellow anthers.

**98554. HELICONIA PSITTACORUM L. f.** Musaceae.

No. 2905. Collected February 15, 1932, on the Aripo Savanna, Port-of-Spain, Trinidad. A shrub 3 feet high with a small cluster of pretty and curiously shaped flowers at the top of the slender stems, orange yellow with black tips.

**98555. JACARANDA FILICIFOLIA (Anders.) Don.** Bignoniaceae.

No. 2901. From the Botanic Garden, Trinidad, February 12, 1932. A tree with blue-purple flowers and fernlike leaves.

**98556. MANICARIA SACCIFERA Gaertn.** Phoenicaceae. Palm.

No. 2940. *Monkey-cap* palm. Collected February 18, 1932, near Sangre Grande, Trinidad.

For previous introduction and description see 98497.

**98557. OPERCULINA PTERODES (Choisy) Meisn.** Convolvulaceae. Morning-glory.

No. 2959. From the Botanic Garden, Trinidad, February 15, 1932. A tuberous-rooted climbing vine, native to Trinidad, with large cordate-sinuate leaves and campanulate yellow flowers 2 inches across, said to open in the morning.

**98558. PELTOGYNE PORPHYROCARDIA Griseb.** Caesalpiniaceae.

No. 2913. *Purple heart*. From the Avena Forest Reserve, Trinidad, February 16, 1932. A much-branched timber tree which reaches a girth of 10 feet, with bifoliate leaves consisting of oblong-falcate leaflets about 1 inch long and small flowers in short racemes. The wood is a strange purple color, very hard and durable, and is used for a certain type of furniture. It is native to the West Indies.

**98559. PICOSENDRON BACCATUM (L.) Krug. and Urb.** (*P. arboreum* Planch.). Simaroubaceae.

No. 2846. From the Botanic Garden, Trinidad, February 13, 1932. A deciduous tree up to 40 feet high, native to Jamaica. The digitately compound leaves are made up of three elliptical to lanceolate leaflets 4 to 5 inches long, and the inconspicuous flowers are followed by orange-yellow fruits about 1 inch in diameter.

**98560. RHEEDIA MACROPHYLLA (Mart.) Planch. and Triana.** Clusiaceae.

No. 2860. From the Botanic Garden, Trinidad, February 15, 1932. A shrub with deep-green leathery foliage and fruit the shape and size of a lemon, with a rough watery skin and several large smooth seeds. The scanty pulp around the seeds is palatable and reminds one of the mangosteen.

**98561. STACHYTARPHETA GRANDIFLORA Hort.** Verbenaceae.

No. 2906. From the Botanic Garden, Trinidad, February 15, 1932. A name for which a place of publication and a description have not been found.

98562 to 98565. *ORYZA SATIVA* L. Poaceae. Rice.

From India. Seeds purchased through Arthur G. Frost, American consul general, Calcutta. Received April 19, 1932.

A collection of Patnai or Patna rice, introduced for the use of Department specialists.

**98562. Borna.** 98564. *Kotcho*.

**98563. Deshi.** 98565. *Nabashan*.

## 98566 and 98567.

From Chilóe Island, Chile, South America. Tubers collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received April 20, 1932.

**98566. DIOSCOREA sp.** Dioscoreaceae. Yam.

No. 186. *Silvestre*. Collected March 22, 1932.

**98567. DIOSCOREA sp.** Dioscoreaceae. Yam.

No. 143. Collected March 16, 1932.

98568. *AGROPYRON FUNGENS* (Pers.) Roem. and Schult. Poaceae. Wheatgrass.

From the Union of Soviet Socialist Republics. Seeds presented by N. Vavilov, Bureau of Introduction, Leningrad. Received April 23, 1932.

From the Maikop region, Khutor Shuntuk; at 800 feet altitude. Introduced for the use of Department specialists working with drought-resistant forage crops.

## 98569 to 98572.

From Chile, South America. Seeds and tubers collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received April 20, 1932.

**98569. DIOSCOREA sp.** Dioscoreaceae. Yam.

No. 144. Collected March 16, 1932, on Chilóe Island.

**98570. SOLANUM TUBEROSUM L.** Solanaceae. Potato.

No. 102. Seed balls from a wild type of potato growing in a cultivated field on the farm of Mr. Ritter, south of Ancud, Chilóe Island. The balls are less than 1 inch in diameter and are round at the apex.

**98571. SOLANUM TUBEROSUM L.** Solanaceae. Potato.

No. 162. *Frutilla*. Collected March 22, 1932, in the garden of Francisco Schwerter, Puerto Montt. A small round irregular tuber with rather deep eyes, pink and white mottled skin, and white flesh. It is considered a very disease-resistant potato.

**98572. (Undetermined.)**

No. 153. Collected March 17, 1932, in the garden of Mr. Turner, Ancud, Chilóe Island. A plant cultivated for its medicinal properties and not as a food. Probably the same as no. 144 (98569).

## 98573 and 98574.

From Africa. Seeds presented by P. T. L. Putman, Avakuli, Stanleyville, Belgian Congo. Received April 22, 1932.

**98573. (Undetermined.)**

M-73. A large forest tree with edible fruits.

**98574. ERYTHROPHLOEUM sp.** Caesalpiniaceae.

M. 123. *Akoba* or *igbanda*. A black bean, seed of a leguminous forest tree, which is eaten by monkeys; but when shelled, steamed a little, and beaten into a paste it is used by the natives as an arrow poison.

**98575 to 98721. SOLANUM TUBEROSUM**  
L. Solanaceae. Potato.

From Chile, South America. Tubers collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received April 20, 1932.

Nos. 98575 to 98577 were collected March 2, 1932, near Puerto Montt, Chile, on the farm of Mr. Schaefer.

**98575. No. 38.** A variety with large round tubers having red skin, yellow flesh, and eyes slightly sunken. It is said to have been of French origin.

**98576. No. 39.** An indigenous variety cultivated as a curiosity. The small tubers are irregularly round with deep wide eyes and red skin; the outer flesh is white, while the inner flesh is red.

**98577. No. 40. Blanca Alemana.** A cultivated commercial type, probably from introduced stock. The large oval tubers have white skin, shallow eyes, and white flesh. It is considered one of the best and most disease-resistant varieties.

Nos. 98578 to 98637 were collected March 9, 1932, at the Genetic Station, Anoud, Chiloé Island.

**98578. No. 41. Corahila Quilquico.** Station No. 272. Large irregularly round tubers with red skin, shallow eyes, and white flesh. Said to have come originally from the island of Quilquico, Chile.

**98579. No. 42. Blanca Alemana.** Station No. 283. Ovate flattened tubers with white skin and flesh and shallow eyes. Said to have come originally from Pudeto, Chiloé Island.

**98580. No. 43. Cisne Redondo.** Station No. 251. An indigenous sort producing small irregularly round pink tubers with shallow eyes and yellow-white flesh.

**98581. No. 44. Corahila Rilán.** The small round red tubers, of a variety originally from Rilán, Chiloé Island, have shallow pink eyes and yellow-white flesh.

**98582. No. 45. Corahila Chonchi.** Station No. 33. A variety indigenous to the island of Chonchi, Chiloé Province. The small round red tubers have pink eyes and yellow-white flesh.

**98583. No. 46. Corahila Santa Elvira.** Station No. 75. A variety, originally from the island of Santa Elvira, Chiloé Province, which has small round-ovate red tubers with shallow pink eyes and white flesh mottled with yellow.

**98584. No. 47. Rosada Catpulle.** Station No. 164. A variety indigenous to the island of Catpulle, Chiloé Province, which has large round to oval red tubers, yellow flesh, and shallow pink eyes.

**98585. No. 48. Corahila Alao.** Station No. 207. A variety indigenous to the island of Alao, Chiloé Province, which has large round red tubers with white flesh mottled with red (the red is in the vascular ring) and shallow pink eyes.

**98586. No. 49. Corahila Blanca Alemana.** Station No. 224. A small round to oval red tuber with shallow pink eyes and yellow flesh. It is probably a hybrid between indigenous and introduced stock.

**98587. No. 50. Corahila Chaulinee.** Station No. 12. A variety originally from the island of Chaulinee, Chiloé Province, with small round to oval red tubers, white flesh, and shallow pink eyes.

**98588. No. 51. Rosada Pudeto.** A variety originally from Pudeto, Chiloé, which has long ovate red tubers with yellow-white flesh and shallow narrow eyes.

**98575 to 98721—Continued.**

**98589. No. 52. Huevo.** An indigenous variety with large long-oval red tubers which have yellow flesh and deep long eyes.

**98590. No. 53. Volera Santa Elvira.** An indigenous type, originally from the island of Santa Elvira, with small long-ovate tubers which have gray skin, white flesh mottled with purple, and deep eyes with numerous buds.

**98591. No. 54. Blanca Alemana.** A round flattened tuber with white flesh and skin and shallow eyes. It is grown as a commercial potato and may be from introduced stock.

**98592. No. 55. Corahila Mechaico.** A variety originally from the island of Mechaico, Chiloé Province, which has ovate flattened red tubers with white flesh and shallow pink eyes.

**98593. No. 56. Blanco Alemana Pudeto.** A type, coming from Pudeto, Chiloé, with small round flattened red tubers which have shallow pink eyes and white flesh except the vascular ring, which is pink.

**98594. No. 57. Huevo Santa Elvira.** A variety originally from the island of Santa Elvira, Chiloé Province, which has small round red tubers with yellow flesh and deep eyes.

**98595. No. 58. Canales Jeske.** A variety indigenous to the islands of Chiloé Province. The large oval flattened red tubers have yellow-white flesh and shallow pink eyes.

**98596. No. 59. Alemana Elefant.** A type indigenous to Chiloé Province, with large irregularly round white tubers, white flesh, and deep eyes.

**98597. No. 60. Cisne Redonda.** An indigenous type having round flattened red tubers with shallow eyes and yellow-white flesh with the vascular ring red.

**98598. No. 61. Corahila Mechaico.** An indigenous type from the island of Mechaico, with small round flattened red tubers which have white flesh and shallow pink eyes.

**98599. No. 62. Corahila Santa Elvira.** A variety, originally from the island of Santa Elvira, Chiloé Province, having small round flattened red tubers, with shallow pink eyes and white flesh with the vascular ring red.

**98600. No. 63. Blanca Alemana Pudeto.** A type from Pudeto, Chiloé, with large ovate flattened white tubers which have white flesh and shallow eyes.

**98601. No. 64. Corahila Chelin.** A variety indigenous to the island of Chelin, Chiloé Province, with round to oval flattened red tubers which have white flesh and shallow eyes.

**98602. No. 65. Cuique.** An indigenous type with small round long-narrow red tubers which have shallow eyes and white flesh heavily mottled with red.

**98603. No. 66. Volera Santa Elvira.** A type indigenous to the island of Elvira, Chiloé Province, with small round gray tubers having white flesh and shallow blue eyes.

**98604. No. 67. Corahila Chonchi.** A type indigenous to the island of Chonchi, Chiloé Province. The tubers are small, long, round with red skin, white flesh, and shallow eyes.

**98605. No. 68. Corahila San José.** A type indigenous to San José, Chiloé Province, with round flattened red tubers, white to yellow flesh, and shallow eyes.

**98606. No. 69. Corahila Redondo Pudeto.** A type indigenous to Pudeto, Chiloé. The large irregularly round red tubers have shallow eyes and white flesh with a red vascular ring.

## 98575 to 98721—Continued:

98607. No. 70. *Corahila Tranqui*. A round flattened red tuber with shallow eyes and yellow-white flesh.
98608. No. 71. *Corahila Alemana Pudeto*. A type indigenous to Pudeto, Chiloé. The ovate flattened white tubers have white flesh and shallow eyes.
98609. No. 72. *Corahila Quilquico*. A variety indigenous to the island of Quilquico, with small round red tubers which have white flesh and deep eyes.
98610. No. 73. *Corahila Quehue*. A variety indigenous to the island of Quehue. The large round flattened red tubers have shallow eyes and yellow flesh with a red vascular ring.
98611. No. 74. *Cisne*. Small elongate-round red tubers with yellow-white flesh and shallow pink eyes; a type indigenous to Chiloé Province.
98612. No. 75. *Corahila Mechaico*. A type indigenous to the island of Mechaico, with round flattened red tubers, yellow-white flesh, and shallow pink eyes.
98613. No. 76. *Corahila Quilquico*. Ovate flattened red tubers with yellow flesh and shallow pink eyes. This type is indigenous to the island of Quilquico.
98614. No. 77. *Cisne*. A type indigenous to Chiloé Province. The large round flattened red tubers have white flesh and shallow eyes.
98615. No. 78. *Corahila Rauco*. Large ovate red tubers with yellow-white flesh and shallow eyes; a type indigenous to the island of Rauco, Chiloé Province.
98616. No. 79. *Corahila Alao*. A variety having small round tubers with white skin mottled with blue, white flesh, and shallow eyes; it is indigenous to the island of Alao, Chiloé Province.
98617. No. 80. *Villarzoeta*. A type indigenous to Chiloé Province, with red ovate tubers, white flesh, and shallow eyes.
98618. No. 81. *Corahila Mechaico*. Elongated white tubers mottled with pink, which have yellow-white flesh and shallow eyes. The type is indigenous to the island of Mechaico, Chiloé Province.
98619. No. 82. *Corahila Vilupulle*. A type, indigenous to Chiloé Province, with oval tubers having thick red skin, white flesh, and shallow pink eyes.
98620. No. 83. *Corahila Quilquico*. A variety indigenous to the island of Quilquico. The elongate-flattened red tubers have white flesh and shallow eyes.
98621. No. 84. *Corahila Chonchi*. A variety indigenous to the island of Chonchi. The ovate tubers with pink and white mottled skin have white flesh and shallow eyes.
98622. No. 85. *Cisne*. A variety indigenous to Chiloé Province, with oval white tubers, white flesh, and shallow eyes.
98623. No. 86. *Chautinee*. A type indigenous to Chiloé Province which has ovate red tubers with white flesh and shallow pink eyes.
98624. No. 87. *Corahila San José*. A type, indigenous to Chiloé Province, with elongated red tubers, white flesh, and shallow pink eyes.
98625. No. 88. *Corahila Rilán*. A variety, indigenous to the island of Rilán, with small ovate tubers, white flesh, and shallow eyes.
98626. No. 89. *Cisne Redondo*. A variety, indigenous to Chiloé Province, with round flattened red tubers, yellow-white flesh, and shallow pink eyes.

## 98575 to 98721—Continued.

98627. No. 90. *Corahila Rilán*. A variety, indigenous to the island of Rilán, with ovate red tubers which have white flesh and shallow pink eyes.
98628. No. 91. *Corahila Alao*. A variety, indigenous to the island of Alao, Chiloé Province, with elongated red tubers, yellow-white flesh, and shallow pink eyes.
- Nos. 98629 to 98631 are types indigenous to Chiloé Province.
98629. No. 92. *Corahila Vilupulle*. Oval red tubers with white flesh and shallow pink eyes.
98630. No. 93. *Americana*. Small elongated red tubers with yellow-white flesh and shallow pink eyes.
98631. No. 94. *Corahila Tenten*. Small round red tubers with white flesh and shallow pink eyes.
98632. No. 95. *Chelin*. A type, indigenous to the island of Chelin, Chiloé Province, with round red tubers which have white flesh and shallow eyes.
98633. No. 96. *Vilupulle*. A variety, indigenous to Chiloé Province, with ovate red tubers, shallow eyes, and yellow-white flesh.
98634. No. 97. *Blanca Alemana*. A variety, indigenous to Chiloé Province, with oval red tubers, shallow eyes, and white flesh with a red vascular ring.
98635. No. 98. A variety, indigenous to the island of Chiloé, with ovate red tubers, shallow eyes, and yellow flesh.
98636. No. 99. *Corahila Mechaico*. A variety, indigenous to the island of Mechaico, with ovate white tubers, shallow eyes, and white flesh.
98637. No. 100. *Corahila Tenten*. A variety, indigenous to the island of Tenten, with small ovate red tubers, shallow eyes, and yellow-white flesh.
- Nos. 98638 and 98639 were collected March 11, 1932, on the farm of Mr. Ritter, about 10 miles south of Ancud, Chiloé Island. They were grown from indigenous stock.
98638. No. 101. Large round red tubers with shallow eyes and white flesh.
98639. No. 103. Round red tubers with deep and pink eyes and white flesh.
- Nos. 98640 to 98653 are indigenous types from the farm of Mr. Sagner, about 5 miles south of Ancud, Chiloé Island.
98640. No. 104. *Corahila*. A commercial variety with flattened red tubers, shallow eyes, and white flesh.
98641. No. 105. A large irregularly round blue tuber with shallow white eyes and yellow-white flesh.
98642. No. 106. An ovate red tuber with deep eyes and yellow-white flesh.
98643. No. 107. Large elongated red tubers with shallow eyes and white flesh. This is the best commercial potato from native stock.
98644. No. 108. Large elongated red tubers with shallow eyes and yellow-white flesh with red center.
98645. No. 109. *Guapo*. Round red tubers with shallow pink eyes and yellow-white flesh.
98646. No. 110. Small round blue tubers with shallow white eyes and yellow-white flesh.
98647. No. 111. Large ovate red tubers with shallow eyes and yellow-white flesh with a red vascular ring.

## 98575 to 98721—Continued.

98648. No. 112. Large ovate red tubers with shallow pink eyes and yellow-white flesh slightly mottled with pink.
98649. No. 113. Large irregular tubers with mottled blue and white skin, deep white eyes, and white flesh with a purple vascular ring.
98650. No. 114. Ovate flattened red tubers with shallow white eyes and white flesh.
98651. No. 115. Large ovate red tubers with shallow eyes and white flesh. It is supposed to be more frost resistant than the usual types grown.
98652. No. 116. *Americana*. Large irregularly round tubers with mottled blue and white skin, deep eyes, and white flesh.
98653. No. 117. Large ovate red tubers with shallow eyes and yellow-white flesh. One of the best commercial types from native stock.
- Nos. 98654 to 98659 were collected March 14, 1932, near Ancud.
98654. No. 120. *Biscocha Maidama*. Small round light-violet tubers with shallow blue eyes and white flesh.
98655. No. 121. *Nochas*. A variety native to the island of Chelín and reputed to be disease resistant. The tubers are long and narrow, with purple-black skin, shallow eyes, and white flesh spotted with purple, and a purple vascular ring. The vascular bundles of the stem are also purple at the nodes.
98656. No. 122. *Biscocha*. A variety, native to Mochaico, Chiloé Province, with large round tubers, blue, rather deep eyes, violet skin, and white flesh.
98657. No. 123. A variety, native to the island of Chippicum, Chiloé Province, with small irregularly round red tubers, which have deep and pink eyes and rose-colored flesh with a red vascular ring.
98658. No. 124. *Inglesa*. A variety, native to Calpulle, which has large irregularly round blue-violet tubers with deep eyes and yellow-white flesh with a purple vascular ring.
98659. No. 125. *Mantequilla*. A native variety.
- Nos. 98660 to 98663 were collected in the northern part of the island of Chiloé, March 16, 1932. Unless otherwise stated, they are all native varieties.
98660. No. 126. *Ficocha*. Small round-oval white tubers with shallow eyes and white flesh.
98661. No. 127. *Inglesa*. Large ovate purple tubers with shallow eyes and white flesh.
98662. No. 128. *Guilcaña*. Small round purple-black tubers with shallow eyes and white flesh with the center mottled in purple.
98663. No. 129. *Ficocha negra*. Small round light-violet tubers with shallow eyes and yellow-white flesh.
98664. No. 130. *Peane negra*. Small round dark-purple tubers with shallow eyes and white flesh.
98665. No. 131. *Vastonesa*. Small round light-violet tubers with numerous shallow eyes and white flesh.
98666. No. 132. *Guego*. Small round pink tubers with shallow eyes and yellow flesh.
98667. No. 133. *Emperadora*. Small round white tubers with shallow eyes and white flesh.
98668. No. 134. *Guapa*. Large oval red tubers with deep eyes and white flesh with a purple vascular ring.
98669. No. 135. *Americana*. Large oval tubers with mottled purple and white skin, deep eyes, and white flesh.

## 98575 to 98721—Continued.

98670. No. 136. *Quila*. Small elongated white tubers, mottled with purple, shallow eyes, and white flesh.
98671. No. 137. *Clavella*. Large oval tubers with the skin mottled red and white, deep and white eyes, and white flesh with a red vascular ring.
98672. No. 138. *Alemana*. Small oval white tubers with white flesh and shallow eyes. This may be of introduced stock.
98673. No. 139. *Chalupa negra*. Long narrow slightly curved purple-black tubers with shallow eyes and white flesh with purple vascular ring.
98674. No. 140. *Notra*. Long narrow red tubers with numerous deep eyes and white flesh heavily mottled with purple.
98675. No. 141. Long oval red tubers with deep eyes and yellow-white flesh.
98676. No. 142. Small ovate dark-violet tubers with rather deep eyes and white flesh with purple vascular ring.
98677. No. 145. *Mantequilla*. Small oval tubers, very uniform in size and shape, with deep eyes and yellow flesh. A potato with a good flavor.
98678. No. 146. *Huevo*. Large oval tubers with deep eyes, red skin, and yellow flesh.
98679. No. 147. *Americana*. Large ovate tubers with deep eyes, skin mottled white and purple, and white flesh.
98680. No. 148. *Blanco*. Large oval white tubers with shallow eyes and white flesh.
98681. No. 149. *Clavella*. Large ovate tubers with deep eyes, skin mottled white and violet, and white flesh.
98682. No. 150. Small round tubers with deep eyes, skin mottled purple and white, and white flesh with purple vascular ring.
98683. No. 151. Large oval purple tubers with few and shallow eyes and white flesh.
- Nos. 98684 and 98685 were collected in the garden of Mr. Turner at Ancud, Chiloé Island, March 17, 1932.
98684. No. 152. *Mantequilla*. A native potato with irregularly round yellow tubers, deep eyes, and yellow flesh.
98685. No. 154. A potato of uncertain origin, with medium-sized smooth oval white tubers, shallow eyes, and white flesh.
- Nos. 98686 to 98692 were collected in the garden of Mr. Werner, Punta, Chiloé Island, March 19, 1932.
98686. No. 155. A wild potato native to the forests of Cucao, with small elongate purple tubers, shallow eyes, and white flesh.
98687. No. 156. *Blanca silvestre*. A native potato with large oval flattened white tubers, shallow eyes, and white flesh.
98688. No. 157. *Colorado silvestre*. A native potato with large round-oval red tubers which have shallow eyes and white flesh.
98689. No. 158. *Blanca Alemana*. A commercially cultivated potato with very large oval white tubers with shallow eyes and white flesh.
98690. No. 159. *Colorado Argentina*. A potato of uncertain origin with large irregularly oval red tubers which have shallow eyes and white flesh.
98691. No. 160. *Corahita*. The native potato generally cultivated commercially in Chiloé and sent to northern Chile as seed potatoes. It has large long-oval red tubers, shallow eyes, and white flesh.

## 98575 to 98721—Continued:

98692. No. 161. *Mantequilla*. A native potato which is a good but small producer. The small irregularly round yellow tubers have deep eyes and yellow flesh.
98693. Nos. 162 and 163. *Frutilla*. Collected March 22, 1932, at Puerto Montt, on the mainland, Chile. A potato of uncertain origin. The small irregularly round tubers have rather deep eyes, pink and white mottled skin, and white flesh. A very disease-resistant potato.  
No. 162. Collected in the garden of Francisco Schwertler.  
No. 163. Collected on a farm near Puerto Montt.
98694. No. 164. *Corahila*. A potato grown commercially in the region of Puerto Montt and Puerto Varas. Collected on the farm of Fernando Wilhelm, who has grown the same variety for 17 years. This is a disease-resistant potato with large oval flattened red tubers, shallow eyes, and white flesh.
98695. No. 166. *Castrina*. Collected south of Ancud, Chiloe Island, March 22, 1932. A potato with small oval pink tubers with rather deep eyes and white flesh mottled with pink.
- Nos. 98696 to 98721 are native varieties collected in the northern part of the island of Chiloe.
98696. No. 167. *Nohsas*. Long narrow red tubers with shallow eyes and white flesh mottled with red.
98697. No. 168. *Sedas*. Small oval tubers mottled white and purple, with shallow eyes and white and purple flesh.
98698. No. 169. *Remenda*. Small oval tubers with deep eyes, skin mottled white and purple, and white flesh with purple center.
98699. No. 170. *Pahacoña*. Small oval white tubers with shallow eyes and white flesh.
98700. No. 171. *Caque blanco*. Small long-oval red tubers with shallow eyes and white flesh.
98701. No. 172. *Francesa negra*. Small round black-purple tubers with white around the shallow eyes and white flesh mottled with purple.
98702. No. 173. *Neregue*. Large long-narrow purplish tubers with shallow eyes and white flesh.
98703. No. 174. *Camota*. Small round purple tubers with white around the deep eyes and white flesh with a purple vascular ring.
98704. No. 175. *Limeñe*. Small irregularly round red tubers with deep eyes and yellow-white flesh.
98705. No. 176. *Ficocha negra*. Small oval red tubers with shallow eyes and white flesh.
98706. No. 177. *Lichaquina*. Small oval blue-red tubers with deep eyes and yellow-white flesh.
98707. No. 178. *Maullina*. Small irregularly round white tubers mottled with pink, with deep eyes and white flesh.
98708. No. 179. *Ojos azules*. Small irregularly round yellow-white tubers with blue, deep eyes and yellow-white flesh.
98709. No. 180. *Alvasea*. Small oval flattened white tubers with shallow purple eyes and yellow-white flesh.
98710. No. 181. *Quilas*. Small long-narrow white and pink tubers with deep eyes and white flesh.
98711. No. 182. *Villarruela*. Large oval flat red tubers with shallow eyes and white flesh mottled with pink.

## 98575 to 98721—Continued.

98712. No. 183. *Guapa*. Small irregularly oval red tubers with deep eyes and white flesh.
98713. No. 184. *Francesa blanca*. Small oval white tubers with shallow eyes and yellow-white flesh.
98714. No. 185. *Chalupa*. Small long-narrow curved purple-black tubers with shallow eyes and white flesh with purple vascular ring.
98715. No. 187. *Vastoneca*. Small oval light-purple tubers with shallow eyes and white flesh with purple vascular ring.
98716. No. 188. *Mago*. Large irregularly round purple-black tubers with deep eyes and yellow-white flesh.
98717. No. 189. *Caballero*. Small smooth oval pink tubers with shallow eyes and white flesh.
98718. No. 190. *Quillpicume*. Small round red tubers with deep eyes and white flesh with red vascular ring.
98719. No. 191. *Guapa negra*. Small round oval purple-black tubers with shallow eyes and white flesh mottled with purple.
98720. No. 192. *Altamirana*. Small long-oval pink tubers with shallow eyes and white flesh.
98721. No. 193. *Maidama*. Large irregularly oval red tubers with deep eyes and white flesh.

98722 to 98726. ORYZA SATIVA L.  
Poaceae. Rice.

From India. Seeds presented by W. O'Brien, Corsley, Hyderabad, Deccan. Received April 21, 1932.

A collection of paddy rice introduced for the use of Department specialists.

98722. *Badsha*. A very fine variety that matures in 5 months.
98723. *Basmati*. A fine variety with large grains that matures in 4 months.
98724. *Burmah* or *Black Poofoo*. A very superior variety that matures in 5 months.
98725. *Peshawari*. A very fine variety that matures in 5 months.
98726. *Rajaneshal*. A medium-fine variety that matures in 4 months.

## 98727 to 98729.

From Tahiti, Society Islands. Seeds collected by Martin L. Grant, University of Minnesota. Received April 15, 1932.

98727. CANAVALLIA MICROCARPA (DC.) Piper.  
Fabaceae.

No. 5055. A seashore perennial which climbs trees to a height of 20 feet. The purple flowers are in large spikelike racemes and the pods are flat or slightly swollen. It is closely related to *C. obtusifolia*.

For previous introduction see 30879.

## 98728. INDIGOFERA SUFFRUTICOSA Mill. Fabaceae. Indigo.

No. 4570. A slender, yellow-flowered bushy legume 3 to 5 feet high producing rather scanty growth, making it an indifferent cover crop.

For previous introduction see 97885.

98729. VIGNA LUTEA (Swartz) A. Gray (*V. marina* Merr.). Fabaceae.

No. 4452. A tropical perennial vine or creeper, native to the Philippines, where it has been found useful as a cover crop. It has also made good forage.

For previous introduction see 80772.



**98730. CITRUS sp. Rutaceae.**

From Puerto Rico. Cuttings presented by Edmund H. Twilight, specialist in fruits, Bureau of Agricultural Development, Department of Agriculture and Commerce, Rio Piedras. Received April 21, 1932.

*Rico No. 5.* A light-yellow fruit between 3 and 4 inches in diameter, with thick rind, deep-yellow tender, very juicy flesh, and very few seeds. Introduced for the use of Department specialists interested in citrus breeding.

**98731 and 98732.**

From Ceylon. Seeds presented by Dr. Andreas Nell, Kandy. Received April 23, 1932.

**98731. ATALANTIA MISSIONIS (Wight) Oliver. Rutaceae.**

A small tree much resembling an orange tree in habit, with pale-gray bark, and branches armed with short stiff spines, rather large stiff leaves with indistinct veining and very sweet white flowers. The fruit is like a small dark orange. The pale yellow-white wood is close grained, smooth, and suitable for cabinetwork.

For previous introduction see 95350.

**98732. ATALANTIA CEYLANICA (Arn.) Oliver. Rutaceae.**

*Yakinaran* or *peykurundu*. A much-branched spiny shrub or small tree native to Ceylon and India. Chiefly of interest as a stock for the better varieties of citrus fruits.

For previous introduction see 41444.

**98733 to 98736. CASTANEA CRENATA Sieb. and Zucc. Fagaceae. Japanese chestnut.**

From Japan. Seeds purchased from the Yokohama Nursery Co., Yokohama. Received December 22, 1931. Numbered in April 1932.

A collection of chestnuts introduced for the use of Department specialists.

**98733.** From Iwate Ken. Midsuwasa Eirinsho, Iwate Ken, Esashi Gun, Yanagawa Mura.

**98734.** From Ginyose, Kyoto Fu, Minami, Kuwata Gun, Shino Mura.

**98735.** From Imakita, Kyoto Fu, Minami, Kuwata Gun, Shino Mura.

**98736.** From Akita Ken, Tsunodate Eirinsho, Akita Ken, Sanhoku Gun, Tsunodate machi.

**98737. ZAMIA PORTORICENSIS Urban. Cycadaceae.**

From Puerto Rico. Tubers presented by Henry C. Henrickesen, Puerto Rico Agricultural Experiment Station, San Juan. Received April 25, 1932.

A cycad with a short stem 12 to 18 inches high, native to Puerto Rico. The pinnately compound leaves, 2 to 3 feet long, are made up of 20 to 34 smooth shining narrowly linear leaflets, 2 to 8 inches long, which are usually entire but may have 1 or 2 small teeth near the top. The oblong-cylindrical fruiting cone, 10 inches long, is covered with gray tomentose scales.

**98738 and 98739. PRUNUS ARMENIACA L. Amygdalaceae. Apricot.**

From the Union of Soviet Socialist Republics. Scions presented by Maj. C. R. Olberg, Tiflis, Transcaucasia. Received April 26, 1932.

Native Armenian apricots about the size of small peaches, with very red skins. They compare favorably in flavor with the best of our apricots. Introduced for the use of Department specialists.

**98738.** *Mirsandjali*.

**98739.** *Hurman*.

**98740. LILIUM GIGANTEUM Wall. Liliaceae. Giant lily.**

From China. Seeds presented by Albert N. Steward, University of Nanking, Nanking. Received April 21, 1932.

*Nan Pai Ho.* Collected along a stream near Huang Chia Wan, Kweichow Province, at 5,000 feet altitude.

For previous introduction see 93213.

**98741. ASYSTASIA GANGETICA (L.) Anders. Acanthaceae.**

From the Seychelles Islands. Seeds presented by P. R. Dupont, director, Department of Agriculture. Received April 21, 1932.

A zigzag subshrub 1 to 4 feet tall, native to India. The cordate to ovate leaves are 1 to 4 inches long, and the yellow, dingy white or dark-violet flowers are narrow below and inflated above. It is considered a good pasture plant.

For previous introduction see 97926.

**98742. CITRUS GRANDIS (L.) Osbeck. Rutaceae. Grapefruit.**

From Hawaii. Plants presented by the Agricultural Experiment Station, Honolulu, through E. May, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry. Received April 25, 1932.

*Victoria Pomelo*.

**98743. LAPAGERIA ROSEA Ruiz and Pav. Liliaceae. Red Chile-bells.**

From Chile, South America. Seeds presented by Z. Galemo, of the Escuela de Artilleria, Linares, Chile, through J. L. Colom, chief, Division of Agricultural Cooperation, Pan American Union, Washington, D.C. Received April 27, 1932.

*Copihue*, the Chilean national flower.

For previous introduction see 80434.

**98744 to 98754. GOSSYPIUM spp. Malvaceae. Cotton.**

From the Bahamas, West Indies. Seeds presented by Hugh H. Matheson, Miami, Fla. Received March 14 and 22, 1932. Numbered in April 1932.

Nos. 98744 to 98751 were collected by Gaines R. Wilson, and 98744 to 98749 are from Clarence town, Long Island, Bahamas.

**98744.** GOSSYPIUM sp.

**98745.** GOSSYPIUM sp.

From Deadman's Cay, 13 miles from Clarence town.

**98746.** GOSSYPIUM sp.

From near Billy Rowe's place.

**98747.** GOSSYPIUM sp.

Presented by W. C. P. Major, J. P.

**98748.** GOSSYPIUM sp.

*Anquilla* cotton.

**98749.** GOSSYPIUM sp.

*Fly-a-way* cotton.

**98750.** GOSSYPIUM sp.

From Highburn Cay.

**98751.** GOSSYPIUM sp.

From Port Nelson, Rum Cay.

**98752.** GOSSYPIUM sp.

From Albert Town, Fortune Island.

## 98744 to 98754—Continued.

98753. *Gossypium* sp.

From Albert Town, Fortune Island.

98754. *Gossypium* sp.

From Duncan Town, Great Rugged Island.

98755. *BRYOPHYLLUM PROLIFERUM*  
Bowie. Crassulaceae.

Plants presented by George Pring, superintendent, Missouri Botanic Garden, St. Louis, Mo. Received April 29, 1932.

A tall robust succulent, native to southern Africa, with stems reaching a height of 12 feet. The new growth is four-angled, later becoming cylindrical, and the pinnatifid to pinnate leaves are much contorted and have finely crenate margins. The tubular yellowish flowers are borne in panicle clusters.

98756 to 98778. *Gossypium* spp. Mal-  
vaceae. Cotton.

From the West Indies. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry with the 1931-32 Allison V. Armour expedition. Received April 21, 1932.

98756. *Gossypium* sp.

No. 1. From Nassau, New Providence Island, Bahamas.

98757. *Gossypium* sp.

No. 4. From Conception Island, Bahamas.

Nos. 98758 to 98761 were collected in the Bahama Islands, but the names of the islands were not given.

98758. *Gossypium* sp.

No. 5.

98759. *Gossypium* sp.

No. 6.

98760. *Gossypium* sp.

No. 9.

98761. *Gossypium* sp.

No. 11.

98762. *Gossypium* sp.

No. 14. From Great Inagua, Bahamas.

98763. *Gossypium* sp.

No. 21. From Saona Island, Dominican Republic.

Nos. 98764 to 98768 were collected on Beata Island, Dominican Republic.

98764. *Gossypium* sp.

No. 16.

98765. *Gossypium* sp.

No. 17.

98766. *Gossypium* sp.

No. 18.

98767. *Gossypium* sp.

No. 19.

98768. *Gossypium* sp.

No. 20.

98769. *Gossypium* sp.

No. 25. From St. Kitts, Leeward Islands.

98770. *Gossypium* sp.

No. 30. From Dominica, Leeward Islands.

## 98756 to 98778—Continued.

98771. *Gossypium* sp.

No. 36. From a town between the Bar de l'Isle and D'Ennery, St. Lucia, Windward Islands.

98772. *Gossypium* sp.

No. 87. From St. Lucia, Windward Islands.

98773. *Gossypium* sp.

No. 91. From Martinique, French West Indies.

98774. *Gossypium* sp.

No. 95. From Deer Point, Guantanamo Bay, Cuba.

98775. *Gossypium* sp.

No. 8. From the Bahamas.

98776. *Gossypium* sp.

No. 3. From Cat Island, Bahamas.

98777. *Gossypium* sp.

From St. Martin, colony of Curaçao.

98778. *Gossypium* sp.*Marie Galante* cotton, from Cannouna Island.98779. *HERNANDIA SONORA* L. Her-  
nandiaceae.

From Trinidad. Seeds presented by the Bureau of Plant Quarantine. Received September 11, 1931. Numbered in April 1932.

A large soft-wooded tree growing very close to the beach line, with rather thin broad leaves and masses of very interesting, curiously shaped fruits. The black seed hangs in the center of a large white translucent inverted bell-shaped covering and may be seen through a hole in the bottom of this covering.

For previous introduction see 67185.

98780. *ZELKOVA SERRATA* (Thunb.)  
Planch. Ulmaceae. Sawleaf zelkova.

From Japan. Seeds presented by M. Fujioka, director, Forest Experiment Station, Department of Agriculture and Forestry, Meguro, Tokyo, at the request of Dr. H. Ando, director, Imperial Agricultural Experiment Station, Tokyo. Received April 23, 1932.

*Keaki*. Collected in Yamagata in 1930. A handsome tree, native to Japan, up to 90 feet high, with a short trunk dividing into many upright spreading branches and forming a broad round-topped head. The sharply serrate leaves are ovate and are usually 2 to 3 inches long, or on young shoots, up to 8 inches long.

For previous introduction see 82488.

98781. *HIBISCUS TILIACEUS* L. Mal-  
vaceae. Linden hibiscus.

From Straits Settlements. Seeds presented by R. Holtum, director, Botanic Gardens, Singapore. Received April 25, 1932.

A tall shrub or small tree up to 30 feet high, generally cultivated in the Tropics. The broadly cordate leaves are hoary beneath, and the yellow flowers are 2 to 3 inches long.

98782 to 98790. *Gossypium* spp. Mal-  
vaceae. Cotton.

From the Union of Soviet Socialist Republics. Seeds presented by the Bureau of Introduction of the Institute of Plant Industry, Leningrad. Received May 2, 1932.

A collection of Russian cotton varieties, introduced for the use of Department specialists.

98782 to 98789. *Gossypium hirsutum* L.  
Upland cotton.

## 98782 to 98790—Continued.

98782. No. 10337. From the Turkistan Selection Station.

98783. No. 36009. *Ak-Szhura*, variety 182. From the Selection Station, Gandzha, Azerbaijan.

98784. No. 133887. *King-Karajazskij*, variety 459. From the Selection Station, Gandzha, Azerbaijan.

98785. No. 36018. Variety 508. From the Turkistan Selection Station.

98786 to 98790. From the Selection Station, Gandzha, Azerbaijan.

98786. No. 106915. *King-Karajazskij*, variety 1138.

98787. No. 36029-a. *Thyeder*, variety 1306.

98788. No. 106914. *King-Karajazskij*, variety 1633.

98789. No. 106919. *King-Karajazskij*, variety 1827.

98790. *GOSYPIUM* sp.

*Barraka*.

## 98791 and 98792.

From Egypt. Roots presented by Alfred Bircher, Middle Egypt Botanic Station, El Saff. Received April 25, 1932.

98791. *ELETTARIA CARDAMOMUM* (L.) Maton. Zinziberaceae. Cardamon.

A perennial with large leafy shoots. The powdered dried fruits of this tropical Asiatic plant are used as a spice.

For previous introduction see 90895.

98792. *ZINZIBER MIOGA* Roscoe. Zinziberaceae.

A perennial herb about 3 feet high, found both wild and cultivated in Japan, with nearly linear smooth membranous leaves up to 15 inches long, white flowers in spikes over 3 inches long, and ovoid capsules. In summer and autumn the flowers with the bracts are eaten either raw or boiled and have a slight acid taste and an aromatic odor.

For previous introduction see 44579.

## 98793 to 98888.

From the West Indies, British Guiana, and Surinam. Roots and seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 20, 1932.

98793. *ZINZIBER OFFICINALE* Roscoe. Zinziberaceae. Ginger.

No. 2891. Roots purchased in the market at Trinidad, February 17, 1932. This is the tropical ginger from which Jamaica ginger and candied ginger are made.

For previous introduction see 97821.

98794. *ABELMOSCHUS MOSCHATUS* (L.) Medic. Malvaceae.

No. 3693. *Muskokra*. Collected March 2, 1932, along a new road near the Saramacca Canal, back of Paramaribo, Surinam. An ornamental annual 3 to 12 feet high which bears large light-yellow flowers with deep dark-chocolate purple spots in the throat. The seeds have a musky odor and are used in the making of perfume.

For previous introduction see 97860.

98795. *ABROMA AUGUSTA* L. f. Sterculiaceae.

No. 3703. *Devil's cotton*. Collected March 2, 1932, in the experiment station, Paramaribo,

## 98793 to 98888—Continued.

Surinam. A quick-growing shrub, native to the East Indies, with large angular leaves and dull, deep dark-red flowers. The fiber is used for ropes and cordage in the Orient.

For previous introduction see 93169.

98796. *ANACARDIUM OCCIDENTALE* L. Anacardiaceae. Cashew.

No. 3715. Collected March 8, 1932, on the Baboneau Marquis estate, St. Lucia, Windward Islands. The cashew nut of commerce.

For previous introduction see 97751.

98797. *ANNONA SQUAMOSA* L. Annonaceae. Sugar-apple.

Seeds of a good fruit collected on Eleuthera, Bahama Islands.

98798. *ARISTOLOCHIA ELEGANS* Masters. Aristolochiaceae. Caliciflower.

No. 3719. March 1, 1932. Presented by Dr. G. Stahel, director, botanic garden, Paramaribo, Surinam. A perennial vine with long-stalked broadly ovate leaves 2 to 3 inches across and solitary flowers, which have no unpleasant odor, borne on the pendulous young wood. The flowers have a yellow-green tube 2 to 3 inches long and the cordate-circular limb, 3 inches across, is purple and white blotched, white outside with a yellow eye. It is native to Brazil.

For previous introduction see 91393.

98799. *ARTOCARPUS INTEGRATA* (Thunb.) L. Moraceae. Jackfruit.

No. 3692. From Paramaribo, Surinam, March 3, 1932. A very sweet variety introduced from Java about 20 years ago into Surinam and growing now in the Javanese village of Oranweg. The fleshy aril of this fruit has a sweet delicious tropical flavor and is of good texture.

For previous introduction see 97563.

98800 to 98803. *BAUHINIA* spp. Caesalpiniaceae.

98800. *BAUHINIA MONANDRA* Kurz. Butterfly bauhinia.

No. 3812. Collected February 10, 1932, in the botanic garden at St. George, Grenada, Windward Islands. A small tree with gray bark and thick leaves, bearing large rose-colored flowers one petal of which is carmine spotted. Said to be a form which has escaped from cultivation in the West Indies.

For previous introduction see 97752.

98801 and 98802. *BAUHINIA TOMENTOSA* L. St. Thomas tree.

An erect shrub or small tree which has obtusely lobed leathery leaves, broader than long, and few-flowered clusters of pale-yellow flowers, with the upper petals marked by deep-purple blotches. Native to India.

For previous introduction see 90900.

98801. No. 2960. From the botanic station, Scarborough, Tobago Island, February 19, 1932.

98802. No. 3698. From the experiment station, Paramaribo, Surinam, February 29, 1932.

98803. *BAUHINIA VAHLII* Wight and Arn. Malu-creeper.

No. 2827. Collected in the botanic garden at Port-of-Spain, Trinidad, February, 1932. An enormous-leaved vine that climbs over the tops of forest trees and bears large white flowers. It is native to India.

For previous introduction see 53567.

## 98793 to 98888—Continued.

98904. *BILLBERGIA* sp. Bromeliaceae.

No. 3716. From the experiment station, Paramaribo, Surinam, March 1, 1932. The billbergias are tropical American evergreen epiphytic herbs with a rosette of long spiny pineapple-like leaves from which arises a spicate panicle of 3- to 6-parted flowers. The colored bracts of the flower cluster are usually quite showy.

98905. *BRADBURYA PUBESCENS* (Benth.) Kuntze-Fabaceae.

No. 3704. Collected March 2, 1932, in the experiment station, Paramaribo, Surinam. A leguminous vine, native to tropical America, with trifoliolate leaves and small yellowish flowers. It is used as a cover crop.

For previous introduction see 81440.

98906 and 98907. *BROMELIA PINGUI* L. Bromeliaceae.

A tropical succulent plant, 3 to 4 feet high, with spiny-margined leaves that turn red with age. The reddish flowers are in dense panicles, and the acid fruits, the size of plums, yield a cooling juice. Native to the West Indies.

For previous introduction see 82408.

98906. No. 3837. Collected March 15, 1932, on the mountain side above the village of Windward, Saba Island, Netherland West Indies.

98907. No. 3892. Collected March 27, 1932, on the island of Haiti.

98908. *BROWNEA GRANDICEPS* Jacq. Caesalpiniaceae.

No. 3794. From the Tivoli Garden, Martinique, French West Indies, March 9, 1932. A large handsome tropical American tree, up to 40 feet in height, with attractively mottled young foliage and bright-red flowers in large dense clusters borne at the ends of the branches.

For previous introduction see 67982.

98909. *BUCIDA BUCERAS* L. Combretaceae.

No. 3822. Collected March 14, 1932, near the village of Codrington, on Barbuda, Leeward Islands. A so-called oak with leaves up to 3 inches long and 2 inches wide. A tree up to 75 feet high with a diameter of 3 to 4 feet and having spatulate leaves clustered at the ends of the branches. The spikes of inconspicuous flowers are followed by small slightly fleshy drupes about one fourth inch long. It is native to tropical America.

For previous introduction see 97753.

98910. *CAESALPINIA SEPIARIA* Roxb. Caesalpiniaceae. *Myrsore thorn*.

No. 3851. *Wait-a-bit*. Collected March 10, 1932, near Fort de France, Martinique, French West Indies. A very spiny, vinelike shrub with strong recurved spines on the twigs and petioles which catch one's clothes and hold fast. The long upright racemes of yellow flowers are very showy.

For previous introduction see 67678.

98911. *ANNESLIA TERGEMINA* (L.) Britt. and Rose (*Calliandra tergemina* Benth.). Mimosaceae.

No. 3765. *Bois patat*. Collected March 10, 1932, at Morne la Regale, Martinique. A shrub or small tree which makes an exceedingly attractive hedge and is in bloom most of the time. When the foliage first appears it is pink, turning to yellow-green and later to dark green. The showy part of the flower is the bundle of stamens colored in bands of pink, white, and red.

For previous introduction see 97757.

## 98793 to 98888—Continued.

98812. *CALOPHYLLUM ANTILLANUM* Britton (*C. calaba* Jacq.). Clusiaceae. *Calaba-tree*.

No. 3776. *Galba*. From Basse Terre, Guadeloupe, French West Indies, March 13, 1932. A large tree, up to 100 feet high, native to the West Indies. The dark-green leathery leaves, 3 to 6 inches long, and the small white fragrant flowers, borne in small racemes, are followed by hard-shelled fruits about 1 inch in diameter.

For previous introduction see 97336.

98813. *CANARIUM INDICUM* Stickm. (*C. commune* L.). Balsameaceae. *Kanari*.

No. 3702. Collected March 2, 1932, in the botanic garden at Paramaribo, Surinam. A large ornamental tree, native to the East Indies, and grown to a great extent as a shade tree and for its edible nuts. The tree is notable for its enormous buttressed trunk and ornamental yellow blossoms. The dark-purple fruits are produced in great abundance throughout most of the year. The hard-shelled nuts are very rich in oil.

For previous introduction see 66207.

98814. *CANAVALIA MARITIMA* (Aubl.) Thouars. Fabaceae.

No. 2935. Collected February 19, 1932, in the botanic station, Scarborough, Tobago Island. A strong-growing vine 10 feet high climbing over shrubs and fence rows. The thick pods are from 4 to 6 inches long.

For previous introduction see 97758.

98815. *CANELLA WINTERANA* (L.) Gaertn. Canellaceae.

No. 3834. *Wild cinnamon*. Collected March 14, 1932, near Martello Tower on Barbuda, Leeward Islands. An evergreen shrub or small tree, up to 45 feet high, native to the West Indies. The gray bark and the spatulate leaves, 4 inches long, are aromatic. The purple, red, or violet flowers are borne in terminal clusters and are followed by crimson or nearly black fruits about one-third inch in diameter.

98816. *CAPPARIS INDICA* (L.) Druce. Cappariaceae.

No. 3836. Collected March 14, 1932, on Barbuda, Leeward Islands. A shrub with attractive foliage, silvery white beneath, and large white flowers.

98817 to 98819. *CAPSICUM* spp. Solanaceae.98817 and 98818. *CAPSICUM ANNUUM* L.*Common redpepper*.

A beautiful deep-red redpepper shaped like a turban, flattened lengthwise; of mild flavor, not very hot.

98817. No. 3804. Purchased in the market at Pointe-à-Pitre, Guadeloupe, French West Indies, March 13, 1932.

98818. Purchased in the market at Georgetown, British Guiana.

98819. *CAPSICUM FRUTESCENS* L.*Bush redpepper*.

No. 3823. Collected on the windward side of Saba Island, Netherland West Indies, at 1,500 feet altitude, March 15, 1932. An ornamental variety with thimble-shaped, almost black fruits, one-half inch long, which stand upright on their stems. Origin of the variety is unknown.

For previous introduction see 96503.

98820. *CARICA* sp. Papayaceae.

No. 2939. Collected February 20, 1932, on Tobago Island. A very sweet fruit with the characteristic papaya flavor.

## 98793 to 98888—Continued.

98821. *CASSIA OBOVATA* Collad. *Caesalpinaceae*.

No. 3797. From Anguilla, Leeward Islands, March 16, 1932. A low bushy herbaceous shrub with typical cassialike yellow flowers and flat pods, rounded at both ends and crested in the middle. A tea made from the leaves and fresh twigs is used by the Negroes of Anguilla medicinally. It is a naturalized species, introduced probably from the Old World Tropics.

For previous introduction see 34800.

98822. *CASUARINA* sp. *Casuarinaceae*.

No. 3852. Collected March 16, 1932, near South Hill, Anguilla. A handsome species with smaller cones and larger coarser twigs than *C. equisetifolia*; possibly a hybrid.

98823. *CAYAPONIA AMERICANA* (Lam.) Cogn. *Cucurbitaceae*.

No. 3855. Collected March 19, 1932, near Harrington, Tortola, British Virgin Islands. A woody vine with large scabrous rough five-lobed leaves of very dark-green color. The long-ovoid fruits, less than 1 inch long, turn red when ripe.

98824. *CEDRELA ODORATA* L. *Meliaceae*.  
Cigarbox-cedar.

No. 3800. From the Jardin d'Essais, Basse Terre, Guadeloupe. This is the *West Indian* or *Spanish* cedar, the soft fragrant wood of which is easily worked and in great demand for cigar boxes. It is also used as a shade tree in coffee plantations.

For previous introduction see 97976.

98825. *CLITORIA TERNATEA* L. *Fabaceae*.

No. 3824. Collected March 14, 1932, in the village of Codrington, Barbuda, Leeward Islands, where it was growing in dry rocky calcareous soil. An ornamental leguminous vine with pea-shaped blue or white flowers about 1 inch long.

For previous introduction see 90906.

98826. *CLUSIA ROSEA* Jacq. *Clusiaceae*.

No. 2892. From the Avena Forest Reserve, Trinidad, February 16, 1932. A Central American shrub or tree up to 30 feet high, usually epiphytic when young but eventually killing the host plant. The opposite entire broadly ovate leaves are very thick and leathery, and the large white flowers are often tinged with pink.

For previous introduction see 77024.

98827. *CLUSIA* sp. *Clusiaceae*.

No. 3825. From St. Cloud, near Basse Terre, Guadeloupe, French West Indies, March 13, 1932. A tree with crimson fruits 2 inches long with a five-parted stigma which persists, and thick dark-green foliage which seems never to be diseased.

98828 to 98831. *COCCOLOBA* spp. *Polygonaceae*.98828. *COCCOLOBA KRUGH* Lindau.

No. 3829. From near Codrington, Barbuda, Leeward Islands, March 14, 1932, where it forms a component of the scrub which thrives in the dry limestone soil of the island. A shrub or small tree up to 25 feet high, with smooth gray bark and slender branches, native to the West Indies. The light-green, somewhat leathery, broadly cordate leaves are 4 to 6 inches long, and the small green flowers with white stamens are borne in slender spikes and followed by small ovoid slightly fleshy black fruits.

98829 and 98830. *COCCOLOBA DIVERSIFOLIA* Jacq.

Collected on Barbuda Island March 14, 1932. A small tree 25 feet high, native to the West Indies. The ovate to elliptic-ovate coriaceous leaves are 2 to 6 inches long, and the small green flowers, followed by slightly fleshy black fruits, are borne in slender spikes longer than the leaves.

## 98793 to 98888—Continued.

98829. No. 3830. A larger-fruited form than no. 3829 (98828) and a promising ornamental.

98830. No. 3811. A small-leaved form that seems well able to withstand long periods of drought.

98831. *COCCOLOBA* sp.

No. 3874. Probably collected from trees on the dry rocky soil of Great Inagua, Bahama Islands.

98832. *CORDIA NITIDA* Vahl. *Boraginaceae*.  
Glossy cordia.

No. 3868. *Red manjack* or *West Indian cherry*. Collected March 19, 1932, on Tortola, British Virgin Islands. A shrubby tree with harsh glossy foliage, white flowers, and red viscid berries which are eaten by the wild doves.

For previous introduction see 51118.

98833. *CRACCA TOXICARIA* (Pers.) Kuntze (*Tephrosia toxicaria* Pers.). *Fabaceae*.

No. 3713. Collected March 1, 1932, at Paramaribo, Surinam. A shrub up to 7 feet high, with leaves made up of nine or more leaflets, and racemes of white and pink flowers. It is used as a cover crop, and in Peru, where it is native, parts of the plant are crushed and thrown into the water to poison fish. It is now being tried as an ingredient of insecticides to replace arsenical salts.

For previous introduction see 81056.

98834 to 98842. *CROTALARIA* spp. *Fabaceae*.98834. *CROTALARIA ANAGYROIDES* H. B. K.

No. 3711. From Paramaribo, Surinam, March 1, 1932. A shrubby vigorous species over 7 feet high with mucronate pubescent trifoliate leaves and terminal inflorescences of brilliant yellow flowers.

For previous introduction see 97878.

98835. *CROTALARIA BETUSA* L.

No. 3860. Collected March 19, 1932, above the village of Roadtown, Tortola, British Virgin Islands.

For previous introduction see 97958.

98836 to 98839. *CROTALARIA INCANA* L.

For previous introduction see 97956.

98836. No. 3814. From Little Bay, St. Martin Island, March 17, 1932.

98837. No. 3638. Collected March 15, 1932, at Bottom, Saba, Netherland West Indies. A small species growing in the cultivated lands.

98838. No. 3853. Collected March 19, 1932, on Tortola, British Virgin Islands. A small-podded legume growing on a rock wall at Harrigan.

98839. No. 3813. Collected March 17, 1932, on the island of St. Martin. A low bushy herbaceous legume with densely pubescent soft delicate leaves. It may be a naturalized form escaped or introduced with forage.

98840 and 98841. *CROTALARIA JUNCEA* L.  
Sunn-hemp.

For previous introduction see 97931.

98840. No. 2974. Collected February 25, 1932, in the Botanic Garden, Georgetown, British Guiana. A large plant 8 feet high with deep-orange or brilliant-yellow flowers 1 inch long borne on erect slender gray-pubescent branches. The short, somewhat flattened pods are covered with velvety pubescence.

## 98793 to 98888—Continued.

98841. No. 2973. From a private garden at St. George, Grenada, Windward Islands, February 9, 1932. Very similar to no. 2974 (98840), but a smaller plant.

## 98842. CRODALARIA RETUSA L.

No. 3876. Collected January 26, 1932, on Antigua, Leeward Islands.

For previous introduction see 98835.

## 98843. CYPERUS COMOSUS (Kunth) Poir. Cyperaceae.

No. 3701. Collected March 4, 1932, in the experiment station, Paramaribo, Surinam. A large handsome sedge which becomes 8 feet high in the wet lands of the experiment station at Paramaribo. Introduced for trial as an ornamental sedge for water gardens.

## 98844. DIOSPYROS PEREGRINA (Gaertn.) Guerke. Diospyraceae.

No. 2848. Collected February 13, 1932, at Port-of-Spain, Trinidad. An evergreen Indian species, with large leaves, which produce a very dense shade. The young foliage is blood red, and the white waxy blossoms are very fragrant. The fruits, over 1 inch in diameter, have sticky pulp which, in India, is used in calking boats. Introduced as an ornamental.

## 98845. DOLICHOS LAHLAR L. Fabaceae. Hyacinth-bean.

No. 3796. Collected March 15, 1932, in the village of Bottom, Saba, Netherland West Indies. This is the standard variety grown on the island, where it is known as the *Bonavist* bean and forms an important article of diet.

## 98846. ERYTHRINA VARIATA Stickm. Fabaceae. Coraltree.

No. 3774. Collected March 12, 1932, in the Jardin d'Essais, Guadeloupe. A moderate-sized, quick-growing deciduous tree, native throughout India from the foot of the Himalayas into Burma and cultivated in many parts of the Tropics. The clusters of large bright-red flowers appear before the leaves. The pods, 4 to 8 inches long, contain several dark-carmine seeds. The flowers are dried for use as a dye; the bark is used for tanning and dyeing and yields an excellent pale straw-colored fiber. The leaves are used as cattle fodder; the bark and leaves are also used medicinally. The open-grained light wood is durable and does not split or warp; it is used for boxes, toys, and also for firewood. Much of the lacquered ware of India is made from the wood of this tree.

For previous introduction see 68335.

## 98847. ERYTHRINA GLAUCA Willd.

No. 3710. *Bois Immortelle*. From St. Louis, Windward Islands, March 8, 1932. The immortelles are spectacular trees as seen from the harbor in St. Lucia. Their salmon-colored flowers, borne by leafless branches on great spreading crowned trees, dot the landscape with color, making it gay and very attractive. There are several forms, though all have salmon-pink and yellow blossoms.

For previous introduction see 77163.

## 98848. EUGENIA AUSTRALIS Wendl. Myrtaceae. Australian brush-cherry.

No. 3655. The so-called *Jammon*. Collected in the Botanic Garden, Georgetown. A form with small, almost black, fruits not over one-half inch long. An Australian tree up to 80 feet high, with ovate evergreen leaves 3 inches long, branching panicles of white flowers 1 inch across, and ovoid reddish edible fruits an inch long.

For previous introduction see 76938.

## 98849 to 98851. FICUS spp. Moraceae. Fig.

## 98793 to 98888—Continued.

## 98849 and 98850. FICUS LAEVIGATA Vahl.

98849. No. 3728. Collected March 10, 1932, on the drier side of the island of Martinique. A rather attractive species with medium-sized glossy leaves and an abundance of white berries with irregular chocolate-brown spots.

98850. No. 3861. From near Harringan, Tortola, British Virgin Islands, March 19, 1932. A good-looking tree 15 feet high growing on the dry side of the island. The white fruits, less than one-half inch in diameter, turn pink as they ripen and are covered with irregular reddish spots.

## 98851. FICUS sp.

No. 3904. From Haiti, March 27, 1932. A tall buttressed tree with leaves like *F. altissima*, found at 1,000 feet altitude.

## 98852. GALACTIA LONGIFLORA Arnott. Fabaceae.

No. 2657. Collected January 26, 1932, on Boggy Peak, MacCarthy Valley, Antigua, Leeward Islands. A tropical leguminous vine with pinnately trifoliate leaves composed of rounded or retuse leaflets and handsome scarlet pealike flowers in small axillary racemes of great charm and beauty. Native to St. Vincent, British West Indies.

## 98853. HAMELIA ERECTA Jacq. Rubiaceae. Scarletbush.

No. 3764. Collected March 10, 1932, in Lamentin, Martinique. A shrub or small tree up to 25 feet high, native to Florida and southward to Brazil. The opposite or verticillate, elliptic to ovate leaves, 2 to 6 inches long, are pubescent, and the cymes of tubular crimson, scarlet, or orange flowers, nearly 1 inch long, are followed by small dark-red to purple berries. Introduced for comparison with the forms now grown in the Southern States.

## 98854. HIBISCUS BIFURCATUS Cav. Malvaceae. Rosemallow.

No. 3696. Collected March 3, 1932, from a pot-hole in the rocks in the middle of the Surinam River. A wild species, with large pink flowers 3 inches long, that occurs commonly along the Surinam River.

## 98855 to 98861. INDIGOFERA spp. Fabaceae. Indigo.

## 98855 and 98856. INDIGOFERA TINCTORIA L. True indigo.

For previous introduction see 45309.

98855. No. 3714. Collected February 6, 1932, on almost pure beach sand at Grand Bay, Cannouan, Grenadine Islands.

98856. No. 3801. Collected January 23, 1932, in an open field near the experiment station of St. Kitts, Leeward Islands.

## 98857 to 98859. INDIGO SUFFRUTICOSA Mill.

A slender yellow-flowered bushy legume 3 to 5 feet high, producing a rather scanty growth which is not considered one of the best cover crops.

For previous introduction see 98728.

98857. No. 3835. From Barbuda, Leeward Islands, March 14, 1932.

98858. No. 3839. From the town of Bottom, Saba, Netherland West Indies, at 1,000 feet altitude, March 15, 1932. A low shrubby very fruitful species, covered with small sickle-shaped pods.

98859. No. 3875. From Beata Island, Dominican Republic, March 23, 1932. A woody plant 5 feet high found on the beach.

## 98793 to 98888—Continued.

98860 and 98861. *INDIGOFERA TINCTORIA* L.  
True indigo.

For previous introduction and description see 98856.

98860. No. 3877. From the roadside in dry situations on the southern part of St. Martin Island, March 17, 1932.

98861. No. 2886. From Guantanamo, Cuba, March 24, 1932. Found in heavy clay soil on a high bluff above the river.

98862. *INGA LAURINA* (Swartz) Willd. *Mimosaceae*.

No. 3761. *Pois doux*. From the Jardin d'Essais, Pointe-à-Pitre, Guadeloupe, Grand Terre Island, French West Indies, March 11, 1932. A valuable shade and windbreak tree with dark glossy-green leaves like a laurel and remarkably strong trunks which appear to withstand the hurricanes well. The tree is a rapid grower and produces pods containing beans surrounded by a sweet but insipid aril of which children are quite fond, hence the name *Pois doux* (sweet peas).

For previous introduction see 52511.

98863. *LONGHOCARPUS DOMINGENSIS* (Pers.) DC. *Fabaceae*.

No. 3770. From the Botanic Garden, Basse Terre, Guadeloupe, March 12, 1932. The *Savon-eth de Riviere* of Martinique. A medium-sized handsome spreading tree with long slender branches, large pinnate leaves, and violet or rose-colored flowers. A leguminous tree of real promise.

98864. *LUCUMA DUSSIANA* Pierre. *Sapotaceae*.

No. 3864. From the Basse Terre Botanic Garden, Guadeloupe, March 12, 1932. A small tropical tree with elliptic-obovate leathery leaves and edible ovoid or depressed-spherical fruits about twice as large as a hen's egg, with smooth yellowish skin and yellow-brown pulp. Native to Peru, where it is called *pomme pam*.

98865. *MABA GRISEBACHII* Hiern. *Diospyraceae*.

No. 3388. Presented by Comdr. G. B. Keester, of the Naval Station at Guantanamo, Cuba, March 24, 1932. *Ebony* tree. A tree 1 foot in diameter found on the top of dry calcareous cliffs. The hard green fruits, with persistent 3-parted calyx, are filled with a sticky juicelike gambaoge that upon exposure to air turns very dark and almost iridescent. It is not astringent, but stains the hands deep yellow. The wood is said to be blue-black.

98866. *MALPIGHIA FUNICIFOLIA* L. *Malpighiaceae*.

No. 3805. Presented by Mrs. Lawton, wife of the American consular agent in Paramaribo, Surinam, March 1, 1932. A shrub that is quite generally cultivated in the West Indies, with pretty rose-colored flowers followed by brilliant red fruits the size of ordinary cherries, which have a thin skin and juicy orange-colored pulp of a refreshing flavor.

98867 and 98868. *MAMMEA AMERICANA* L. *Clusiaceae*. *Mamey*.

A tropical tree with dark-green glossy foliage and large gray-green fruit. The skin of this fruit exudes a resinous, gummy juice which is used for killing chigoes and lice when applied locally.

For previous introduction see 47425.

98867. No. 3709. From the market at Georgetown, British Guiana, February 29, 1932.

98868. No. 3906. From near the citadel of Christophe, Haiti, March 27, 1932.

## 98793 to 98888—Continued.

98869. *MIMUSOPS BALATA* (Aubl.) Gaertn. f. *Sapotaceae*.

No. 3895. From the Bayeux plantation in west-central Haiti, under observation of the Division of Rubber Plant Investigations, March 27, 1932. A tree which bears small round edible fruits, but is cultivated for its latex which is much like gutta-percha in character and is used in the trade for coating cables, etc.

98870. *OCHNA MOSSAMBICENSIS* Klotzsch. *Ochnaceae*.

No. 2971. From the Botanic Garden, Georgetown, British Guiana, February 25, 1932. An ornamental evergreen shrub which has large thick deep-green obovate leaves and terminal clusters of showy flowers, with the central disk and rather fleshy sepals wine red.

98871 and 98872. *PASSIFLORA LAURIFOLIA* L. *Passifloraceae*. *Waterlemon*.

*Pomme Liane*. A strong vigorous vine, very suitable for arbors and trellises, with oval to ovate leaves and fragrant purple flowers about 2 inches in diameter. The ovoid-pointed fruit has a tough leathery shell which when green is six-riated with white stripes, but when quite ripe is a dull orange yellow. The numerous seeds are embedded in the juicy scented pulp, which is aromatic and delicious.

For previous introduction see 68038.

98871. No. 3771. From the market at Castries, St. Lucia, Windward Islands, March 8, 1932.

98872. No. 3775. From the market at Basse Terre, Guadeloupe, March 13, 1932.

98873. *PHASEOLUS LUNATUS* L. *Fabaceae*. *Lima bean*.

No. 3795. *Rum* bean. From Bottom, Saba, Netherland West Indies. A variety with brown-spotted seeds, which is one of the staple food plants of the island.

98874. *PHASEOLUS MUNGO* L. *Fabaceae*. *Urd*.

No. 3795. From Paramaribo, Surinam, March 3, 1932. A promising bean grown on sandy soils of the savanna back of Paramaribo by the Javanese colonists. It seemed to be growing and fruiting well in the strictly tropical climate and was probably introduced from Java by the Javanese.

98875. *PITHECOLLOBIUM DULCE* (Roxb.) Benth. *Mimosaceae*. *Guamachil*.

No. 2962. From the Botanic Garden, Georgetown, British Guiana, February 23, 1932. A large stately tree with pinnate leaves composed of obovate or oblong leaflets 1 inch long; the white flowers, finely pubescent, are followed by twisted pods 5 or 6 inches long and over 1 inch wide. It is widely cultivated in the Tropics as an ornamental. The pulpy arils are eaten by the poorer classes as food, and the bark yields a yellow dye.

For previous introduction see 92366.

98876. *PLUMERIA ALBA* L. *Apocynaceae*.

No. 3799. From Anguilla, Leeward Islands, March 16, 1932, where it was growing in the pot-holes in calcareous rocks and exposed to the drying salt-spray-laden trade winds. A tree up to 30 feet high, native to the West Indies. The linear-lanceolate subcoriaceous leaves, 10 inches long, are glabrous above and densely white-tomentose beneath. The salver-shaped flowers, 2 inches across, white with a yellow eye, are borne in compact clusters.

For previous introduction see 97576.

## 98793 to 98888—Continued.

98877. *PSIDIUM* sp. Myrtaceae.

No. 3807. From Kaley, Surinam, March 4, 1932. A wild relative of the guava which bears fruits 1 inch in diameter composed mostly of angular hard seeds. Of possible value in breeding with the ordinary guava.

98878 and 98879. *QUASSIA AMARA* L. Simaroubaceae.

A lofty tree, native to Surinam, which resembles the ash, with large showy red flowers, followed by beautiful and decorative fruits arranged in fives around a fleshy peduncle. The wood of this tree is extremely bitter and was found to be a remedy for certain fevers by a Negro named Quassi.

98878. No. 3661. From the Botanic Garden, Paramaribo, Surinam, March 2, 1932.

98879. No. 3802. Presented by Père Quentin, of Basse Terre, Guadeloupe, March 13, 1932.

98880. *RAVENALA GUYANENSIS* Steud. Musaceae.

No. 3866. From an Indian village near Paramaribo, Surinam, March 3, 1932. There are only two species in the genus, one in Madagascar and the other in Guiana. This species is not so large as the Madagascar one, but it rises to a height of 25 feet making a fanlike head. Its enormous flower spike is 9 feet long and as much as a man can carry. Unlike the Madagascar species, the seed of which has a deep-blue aril, this has an orange aril.

98881. *SAMANEA SAMAN* (Jacq.) Merr. (*Pithecolobium saman* Benth.). Mimosaceae.

No. 2966. From the Botanic Garden, Georgetown, British Guiana, February 24, 1932. The rain tree of the West Indies. A large spreading tree up to 60 feet high, native to Central America, but widely distributed throughout the Tropics as an ornamental and shade tree. The horizontal branches are extremely long, and between each pair of leaflets there is an extra-floral nectary, which exudes nectar and attracts insects. The dropping of this nectar has given the tree the reputation of producing rain. The dark pods, like carob beans, are filled with sweet pulp and are fed to stock. The wood is not very hard, but the heartwood is a handsome red color and takes a fine polish.

For previous introduction see 93364.

98882. *SICANA ODORIFERA* (Vell.) Naud. Cucurbitaceae. **Casabanana.**

No. 3772. From Fort-de-France, Martinique, French West Indies. A subtropical ornamental cucurbitaceous vine producing large fruits a foot or more long. Its texture and flavor are extremely pleasant, reminding one of a summer squash. For cultivation the vine would require a strong trellis like the chayote.

For previous introduction see 92926.

98883. *STIGMAPHYLLOM LINGULATUM* (Poir.) Small. Malpighiaceae.

No. 3850. From the village of Sandy Ground, Anguilla, Leeward Islands, March 16, 1932. A woody vine with glossy foliage and flowers which resemble those of crapemyrtle except that they are a pretty yellow color. The winged fruits are borne in pairs.

For previous introduction see 33585.

98884. *TAMARINDUS INDICA* L. Caesalpinaceae. **Tamarind.**

No. 3790. From a hillside above the village of Bottom, Saba, Netherland West Indies, March 15, 1932. A tree bearing unusually large fine fruits. Some of the pods were 8 to 9 inches long and over an inch wide.

## 98793 to 98888—Continued.

98885. *TRIMEZA MARTINICENSIS* (Jacq.) Herb. (*Cipura martinicensis* H. B. K.). Iridaceae.

No. 3903. From a terrace just below the rain-forest edge in the St. Cloud region above Basse Terre, Guadeloupe, March 13, 1932. A yellow tigrisialike plant 18 inches high, with small round rhizomes having intensely yellow flesh, light-green leaves, and small fugaceous yellow flowers.

For previous introduction see 97762.

98886. *VANGUERIA MADAGASCARIENSIS* Gmel. Rubiaceae.

No. 3762. From Guadeloupe, March 13, 1932. A small deciduous tree with large light-green leaves having prominent midribs. In March and April it bears quantities of globular green fruits over 1 inch in diameter, which become brown when ripe. The seeds are surrounded by slightly acid brown pulp, reminding one of the tamarind.

98887. *VIGNA LUTEA* (Swartz) A. Gray. Fabaceae.

No. 3885. From Road Town, Tortola, British Virgin Islands, March 19, 1932.

For previous introduction and description see 98728.

98888. *ZEA MAYS* L. Poaceae. **Corn.**

No. 3691. From the market, Paramaribo, Surinam, March 3, 1932. Introduced for the use of plant breeders who are searching for a strain resistant to the corn ear worm.

## 98889 to 98903.

From Egypt. Seeds presented by Alfred Bircher, Middle Egypt Botanic Garden, El Saff. Received April 25, 1932.

98889. *ACROCARPUS FRAXINIFOLIUS* Wight and Arn. Caesalpinaceae.

A lofty tree, native to the eastern Himalayas up to 4,000 feet altitude. The sapwood is white and the heartwood light red and moderately hard. The natives use the wood for planking and tea boxes.

For previous introduction see 57882.

98890. *BRAHEA DULCIS* (H. B. K.) Mart. Phoenicaceae. **Palma dulce.**

A short palm, up to 20 feet high, native to Mexico. The fan-shaped leaves, 4 to 5 feet long, are made up of about 50 linear leaflets, and the globose yellow edible fruits are borne on pendulous much-branched stalks 6 to 8 feet long.

98891. *BUTIA CAPITATA* (Mart.) Becc. Phoenicaceae. **Palm.**

A large palm, like the coconut, native to Argentina, with a spineless trunk, pinnate leaves, and large bunches of small edible fruits. It is said to be harder than any species of *Cocos*.

For previous introduction see 82399.

98892. *CANTHIUM PARVIFLOMUM* Lam. Rubiaceae.

A rigid spiny shrub, native to India and Ceylon. The crowded leathery ovate to orbicular leaves are about 1 inch long, and the very small yellowish flowers, borne in cymes, are followed by obovate fruits less than 1 inch long.

98893. *CEREUS JAMACARU* DC. Cactaceae. **Mandacaru.**

A rigid upright cactus 12 to 16 feet high and 6 inches in diameter, native to Brazil. The new growth is azure, becoming dark green with age, and the large white flowers are 10 inches long and 8 inches across.



## 98889 to 98903—Continued.

**98894. DOYALIS HEBECARPA** (Gardn.) Warb. (*Aberia gardnerii* Clos.). Flacourtiaceae.

A small, much-branched tree 16 to 20 feet high, native to India. The ovate-lanceolate leaves are 2 to 4 inches long, and the greenish flowers are followed by pale-purple edible fruits about 1 inch in diameter.

**98895. EUOLEA PSEUDEBENUS** E. Mey. Diospyraceae.

A shrub or small tree, native to southern Africa. The alternate entire linear coriaceous leaves are 1 to 3 inches long, and the inconspicuous flowers are followed by blue-black edible fruits about one-fourth inch in diameter.

**98896. EUGENIA SUPRA-AXILLARIS** Spring. Myrtaceae.

A glossy-leaved evergreen shrub from eastern Brazil, which bears clusters of white flowers and black one-seeded globose fruits in clusters of 3 to 10. The fruits are about the size of small cherries and somewhat resemble juniper berries in flavor.

For previous introduction see 47988.

**98897. JUNIPERUS BARBADENSIS** L. Pinaceae. Bermuda redcedar.

An evergreen tree, up to 40 feet high, native to the West Indies. The small spiny-pointed imbricated leaves are pale blue-green, and the depressed globose fruits are blue.

**98898. OPUNTIA PARAGUAYENSIS** Schum. Cactaceae. Pricklypear.

An erect shrubby branched cactus of the section *Platyopuntia*. The flat joints, about 8 inches long and 3 inches wide, are spineless, but are beset with short yellow bristles that tend to disappear with age. The yellow flowers are over 2 inches across. Native to Escoban, Paraguay.

**98899. OPUNTIA TUNA** Mill. Cactaceae. Pricklypear.

An erect spreading treelike cactus 10 to 12 feet high, native to the West Indies and Mexico. The elliptical deep-green joints are 10 to 14 inches long; the yellow, fading to red, flowers are 3 to 4 inches across, and the dark-purple, round or pear-shaped edible fruits are 1 to 2 inches in diameter.

**98900. PACHIRA FASTUOSA** (DC.) Decaisne (*P. excelsa* Hort.). Bombacaceae.

A handsome tropical tree native to Mexico, with leaves not unlike those of the horse-chestnut but more leathery in texture. The attractive white flowers, 12 inches in diameter, have strap-shaped petals and large brushlike clusters of crimson and yellow stamens.

For previous introduction see 73879.

**98901. PROSOPIS SPICIGERA** L. Mimosaceae.

A low prickly tree with gray branches, native to India and Persia. The compound leaves are made up usually of four pinnae, each bearing 16 to 24 gray coriaceous leaflets less than one-half inch long. The small flowers are borne in axillary spikes and terminal panicles, and the pods, 4 to 6 inches long, contain an edible pulp.

**98902. TRECULIA AFRICANA** Decaisne. Moraceae.

A tropical African tree, related to the bread-fruit, up to 80 feet high and yielding a whitish latex. The coriaceous ovate-elliptic leaves are 8 inches long and 4 inches broad. The large yellowish fruit, a foot or more in diameter, is said to weigh up to 30 pounds. The seeds are ground by the natives and used as meal.

**98903. VANGUERIA MADAGASCARIENSIS** Gmel. Rubiaceae.

For previous introduction and description see 98886.

## 98904 and 98905.

From the West Indies and Surinam. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

**98904.** (Undetermined).

No. 2763. From Mayero Island, one of the Grenadines, February 6, 1932. An unidentified orchid with very large seed pods.

**98905. SCHOMBURGKIA UNULATA** Lindl. Orchidaceae.

No. 3660. Presented March 6, 1932, by Mrs. Lawrence, wife of the American consul at Paramaribo, Surinam. A showy orchid with purple flowers in many-flowered clusters at the tips of long flower stalks.

**98906. ARUNDINARIA MACROSPERMA** Michx. Poaceae. Southern cane.

From Louisiana. Cuttings presented by Charles E. Chambliss, Crowley, La. Received May 2, 1932.

A native American bamboo growing along streams in the southeastern part of the United States. The stems are 20 to 30 feet high with numerous short divergent branches and lanceolate leaves 10 to 15 inches long.

For previous introduction see 75148.

**98907. SOLANUM TUBEROSUM** L. Solanaceae. Potato.

From England. Tubers presented by Sutton & Sons, Reading. Received April 27, 1932.

*Shamrock.* Introduced for the use of Department specialists.

**98908 to 98917.**

From China. Seed purchased from L. Ptitzin, Harbin, Manchuria. Received December 23, 1931. Numbered in April 1932.

**98908. ACER GINNALA** Maxim. Aceraceae. Amur maple.

A shrub or small tree up to 25 feet high, native to northeastern Asia, with lustrous dark-green three-lobed serrate leaves, long-stalked panicles of yellowish flowers, and winged fruits which are conspicuously red during the summer. The leaves turn bright red in autumn.

For previous introduction see 77615.

**98909. FRAXINUS MANDSHURICA** Rupr. Oleaceae. Manchurian ash.

A handsome ash, often 100 feet high, native to eastern Asia. The leaves are up to 15 inches long with dull-green bristly leaflets. The tree is said to be susceptible to late spring frosts.

For previous introduction see 90781.

**98910. PINUS KORAIENSIS** Sieb. and Zucc. Pinaceae. Korean pine.

A 5-needle pine that occasionally becomes 150 feet high, with smooth red-gray bark. It produces valuable lumber and edible seeds and is also of ornamental value, being of slow growth and forming a dense broad pyramidal head or handsome foliage. Native to Japan.

For previous introduction see 93419.

**98911. ROSA** sp. Rosaceae.

**98912. RUBUS** sp. Rosaceae.

**98913. RUBUS** sp. Rosaceae.

**98914. RUBUS** sp. Rosaceae.

**98915. RUBUS** sp. Rosaceae.

## 98908 to 98917—Continued.

98916. *SYRINGA AMURENSIS* Rupr. Oleaceae.  
Manchurian lilac.

A shrub or small tree with large clusters of white flowers.

For previous introduction see 92067.

98917. *VITIS AMURENSIS* Rupr. Vitaceae.  
Amur grape.

A wild grape with large bunches of acid purple berries about the size of a marrowfat pea. They are eaten fresh and also made into wine. This variety is hardy in the region of Mefun, Manchuria.

## 98918 and 98919.

From the Philippine Islands. Cuttings presented by the chief of the division of forest investigation, Bureau of Forestry, Agricultural College, Laguna, through Arthur Fischer, director of forestry, Manila. Received May 9, 1932.

98918. *DEGUELLA ELLIPTICA* (Roxb.) Taub. (*Deris elliptica* Benth.). Fabaceae.

A large handsome climbing vine native to southeastern Asia. The compound leaves, 1 foot long, are made up of 9 to 13 thin leathery obovate leaflets 4 to 6 inches long, and the bright-red pea-shaped flowers, 1 inch long, are borne in lax racemes a foot in length. It yields the commercial tuba root, which is used in the manufacture of insecticides. The plant is at present extensively cultivated in the Malay Archipelago.

For previous introduction see 95366.

98919. *DEGUELLA POLYANTHA* (Perkins) Blake. Fabaceae.

A tropical woody climber with alternate pinnate leaves and small pinkish flowers in axillary racemes. It is closely related to *D. scandens* and is native to the Philippine Islands.

98920. *ARRACACIA XANTHORRHIZA* Bancroft. Apiaceae. Arracacha.

From Venezuela. Roots presented by H. Pittier, Caracas. Received May 10, 1932.

The arracacha is a biennial herb about 3 feet high, with carrotlike foliage and small umbels of purple flowers. It is native to northern South America, where it is cultivated for its roots, which may be white, yellow, or mulberry colored. The large fleshy roots are used as food in South America and Central America, being boiled like parsnips or sliced and fried. They also produce an excellent starch for laundry purposes. The plant is propagated either by seed or cuttings, and it will stand no frost.

For previous introduction see 78832.

98921. *CUCURBITA MOSCHATA* Duchesne. Cucurbitaceae. Cushaw.

From China. Seeds presented by W. T. Chang, Nanking University, Nanking. Received May 6, 1932.

## 98922 to 98924.

From Scotland. Seeds presented by the North of Scotland College of Agriculture, Craibstone, Aberdeen. Received May 9, 1932.

A collection of grasses introduced for the use of Department specialists.

98922. *DACTYLIS GLOMERATA* L. Poaceae.  
Orchard grass.

Craibstone grazing cocksfoot.

98923. *LOLIUM PERENNE* L. Poaceae.  
Perennial ryegrass.

Craibstone perennial ryegrass.

## 98922 to 98924—Continued.

98924. *PHLEUM PRATENSE* L. Poaceae. Timothy.

Craibstone timothy hay.

## 98925 and 98926.

From Ceylon. Seeds presented by the manager of the publication depot and central seed store, Department of Agriculture, Peradeniya. Received May 9, 1932.

98925. *CRACCA CANDIDA* (DC.) Kuntze (*Tephrosia candida* DC.). Fabaceae.

A low shrub with slender branches and large clusters of reddish or white flowers. It is the preferred cover crop in the lime plantations of Dominica, West Indies, and widely distributed in tropical countries. The bark and leaves are used as a fish poison plant in Bengal and Burma, but tests show that as an insecticide it is much inferior to *C. vogelii*.

For previous introduction see 97764.

98926. *CRACCA VOGELII* (Hook. f.) Kuntze (*Tephrosia vogelii* Hook. f.). Fabaceae.

A shrubby legume native to tropical Africa. All parts of the plant are macerated and thrown into the water to kill fish. It is considered very valuable for its insecticidal properties, the seeds being found to contain the highest concentration of the toxic principle.

For previous introduction see 81414.

98927. *BROMUS INERMIS* Leyss. Poaceae. Common brome grass.

From China. Seeds purchased from L. Pittsain, Harbin, Manchuria. Received May 9, 1932.

Koster. Introduced for the use of Department specialists working with forage crops.

98928. *CAVANILLESIA PLATANIFOLIA* H. B. K. Bombacaceae.

From the Canal Zone. Seeds presented by J. E. Higgins, director, Canal Zone Experiment Gardens, Summit. Received May 3, 1932.

A Colombian tree up to 100 feet high, with a large thick trunk, smooth pale bark, large shallowly 5- to 7-lobed leaves, and red flowers 1 inch long. The coarse pithlike wood is white or yellowish and is used for making canoes and rafts.

For previous introduction see 78818.

98929. *PRUNUS SALASII* Standl. Amygdalaceae.

From Central America. Seeds presented by Mr. Salas, director general, Agricultural Department, Guatemala, through Otto Katzenstein & Co., Atlanta, Ga. Received May 12, 1932.

A tropical evergreen cherry which is native to the highlands of Antigua, Guatemala, where it is known as the *carreto*. The light-green leathery narrow-oblong leaves are 3 to 5 inches long, and the small white flowers are in racemes about 6 inches long.

98930 to 98973. *MALUS SYLVESTRIS* Mill. (*Pyrus malus* L.). Malaceae. Apple.

From Germany. Plants presented by Dr. W. Gleisberg, Die Gartenbauwissenschaft, Fillnitz und Elbe, through L. Späth, Berlin-Baumschulenweg. Received May 13, 1932.

A collection of selected stocks introduced for the use of Department specialists in their studies of fruit-tree root stocks.

98930. No. 3. *Grosser Bohnapfel*.

98931. No. 6. *Kasselrenett (Grosse Reinette)*.

98932. No. 7. *Kanadarenett*.

## 98930 to 98973—Continued.

98933. No. 8. *Guldparmán* (*Winter-Goldparmäne*).  
 98934. No. 11. *Ananasrenett*.  
 98935. No. 12.  
 98936. No. 13.  
 98937. No. 19. *Winter-Dechans-bairne*.  
 98938. No. 21.  
 98939. No. 22.  
 98940. No. 24.  
 98941. No. 28.  
 98942. No. 31.  
 98943. No. 37. *Baumanns renett*.  
 98944. No. 43.  
 98945. No. 47.  
 98946. No. 49.  
 98947. No. 53.  
 98948. No. 55.  
 98949. No. 61.  
 98950. No. 64.  
 98951. No. 67.  
 98952. No. 72.

98974. *FRAGARIA* sp. Rosaceae.

## Strawberry.

From Sweden. Plants presented by Mr. Ekstrom. Central Bureau of Agriculture, Stockholm. Received May 25, 1932.

## Abundance.

98975. *GOSSYPIUM* sp. Malvaceae.

## Cotton.

From the Galápagos Islands. Seeds presented by George Stone. Received April 4, 1932.

Wild cotton collected on the island of Santa Maria.

## 98976 to 98999.

From the West Indies, British Guiana, and Surinam. Plants and seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

98976. *RODRIGUEZIA SECUNDA* H. B. K. Orchidaceae.

No. 3659. From Surinam, March 2, 1932. An epiphytic orchid with small delicate pseudobulbs, long slender leaves, and deep-rose flowers, borne in erect secund racemes 6 inches high. It grows commonly either on sapodilla or calabash trees in the savanna region around Paramaribo.

98977. *ACACIA CHORIOPHYLLA* Benth. Mimosaceae.

No. 3905. From Mariguana, Bahama Islands, March 29, 1932. A shrub or small tree with leathery pinnate leaves and pretty yellow flower heads followed by short thick pods in which the brown seeds are embedded in a white sweet aril. Introduced as an ornamental shrub or wind-break.

98978. *ALBIZZIA CARIBAEA* (Urban) Britton and Rose. Mimosaceae.

No. 2965. From the Botanic Garden, Georgetown, British Guiana, February 24, 1932. A tall

## 98976 to 98999—Continued.

gaunt naked-looking tree with slender branches, thin pinnate foliage, and papery pods 4 or 5 inches long and less than an inch wide, containing 11 or 12 seeds.

98979. *LYSILOMA LATISILIQUA* (L.) Benth. Mimosaceae.

No. 3887. From Blue Beach, near Guantanamo, Cuba, March 24, 1932. A small decorative tree 25 feet high, with pretty bipinnate leaves composed of obovate leaflets and papery pods of interesting structure. The outside of the dehiscent pod appears to flake off, leaving only the papery mesocarp to enclose the seeds; the dark margin of the pod persists.

98980. *AMERIMNON LATIFOLIUM* (Roxb.) Kuntze. Fabaceae.

No. 3657. From the Botanic Garden, Georgetown, British Guiana, February 24, 1932. A forest tree native to the Sikkim region in India. The pinnate leaves, 4 to 6 inches long, are made up of 5 to 7 orbicular coriaceous leaflets, and the small pea-shaped white flowers are borne in broad lax panicles. The brown strap-shaped pods are 2 to 3 inches long.

98981 and 98982. *BRADBURYA VIRGINIANA* (L.) Kuntze. Fabaceae. Piedmont butterfly-pea.

A long-podded vigorous legume, similar to the rice bean.

98981. No. 3815. From the Dutch side of the island of St. Martin, in a very dry locality, March 17, 1932.

98982. No. 3828. From Barbudo, Leeward Islands, March 14, 1932. Found in dry limestone soil.

98983. *CAESALPINIA PAUCIUGA* Benth. Caesalpinaceae.

No. 2967. From the Botanic Garden, Georgetown, British Guiana, February 24, 1932. *Brazilletto wood*. A large beautiful spreading timber tree which is covered in season with racemes of small fragrant yellow flowers.

For previous introduction see 98070.

98984. *CESTRUM LAURIFOLIUM* L'Her. Solanaceae.

No. 3862. From the village of Harringan, Tortola, British Virgin Islands, March 19, 1932. An attractive shrub 10 to 15 feet high with dark-green leaves. The yellow funnelliform flowers, one-half inch long, are followed by pretty black berries each with a persistent calyx and each bearing three ovate brown seeds flat on one side.

98985. *GYMINDA LATIFOLIA* (Swartz) Urban. Celastraceae.

No. 3842. *Maiden berry*. From Anguilla, Leeward Islands, March 16, 1932. A shrub or small tree, up to 30 feet high, native to the West Indies. The oblong to ovate, glossy-green, slightly leathery leaves are 1 to 3 inches long and the axillary clusters of small greenish flowers are followed by ellipsoid red drupes about a quarter of an inch long, said to be edible.

98986. *COSTUS CYLINDRICUS* Jacq. Zinziberaceae.

No. 2958. From Tobago Island, February 20, 1932. A rank-growing, forest-loving species with large dark-green leaves arranged spirally about the flower stalk, which is a terminal conelike structure with reddish bracts from above which pink-white flowers peep out.

98987 to 98990. *DOLICHOLUS* spp. Fabaceae.98987. *DOLICHOLUS* sp.

No. 3810. From Charlotteville, Tobago Island, February 21, 1932. A legume collected in a lowland meadow.

## 98976 to 98999—Continued.

**98993 and 98999. DOLICHOLUS RETICULATUS** (Swartz.) Millsp.

A legume with yellow flowers and very short broad pods.

**98998. No. 3843.** Collected March 15, 1932, above the village of Bottom on the island of Saba.

**98999. No. 3857.** Collected on the mountain side back of Road Town, Tortola Island, March 1, 1932.

**98990. DOLICHOLUS MINIMUS (L.) Medic.**

No. 3858. From near the village of Harringan, Tortola Island, March 19, 1932. A legume which may have value as a green manure.

For previous introduction see 97311.

**98991. ESCHWEILERIA sp.** Lecythidaceae.

No. 2857. From the Botanic Garden, Port-of-Spain, Trinidad, February 12, 1932. A large tree 50 feet tall, with fruits in clusters resembling acorns with their acorn cups. The seed is bean shaped, however, and strikingly different from any acorn.

**98992. EUGENIA LAMBERTIANA DC.** Myrtaceae.

No. 3779. From near St. Cloud, on Basse Terre, Guadeloupe, March 13, 1932. A tall shrub, native to the West Indies, with glossy dark-green oblong to elliptical leaves 4 to 6 inches long. The small flowers are followed by axillary clusters of 2 to 6 globular yellow fruits about one-half inch in diameter.

**98992. PHASEOLUS ADENANTHUS G. Meyer.** Fabaceae. Bean.

No. 3725. From Lamentin, Guadeloupe, March 10, 1932. A sparsely flowering legume of scraggy habit growing over underbrush. The white and purple flowers, borne on long peduncles, remind one of sweet peas.

For previous introduction see 97883.

**98994. GALACTIA LONGIFLORA** Arnott. Fabaceae.

No. 3859. From the road between the villages of Bottom and St. John, Saba Island, March 15, 1932.

For previous introduction and description see 98852.

**98995. GUZMANIA sp.** Bromeliaceae.

No. 3806. From the highlands of Guadeloupe, March 12, 1932. A bromeliad with leafy terminal inflorescences, not paniced, rising from the broad rather tender leaves which form a rosette. The leaves of the inflorescence differ little from the rest of the plant. A decorative species, but not a strikingly handsome one.

**98996. INDIGOPERA SUFFRUTICOSA** Mill. Fabaceae. Indigo.

No. 2616. From the beach of Beata Island, Dominican Republic, January 18, 1932.

**98997. INGA INGOIDES** Willd. Mimosaceae.

No. 2991. From the Botanic Garden, Georgetown, February 27, 1932. A tree 30 to 40 feet high, native to British Guiana. The compound leaves are made up of 3 to 4 pairs of elliptical leaflets 2 to 4 inches long, and the small tubular flowers are followed by tomentose four-angled pods 4 to 6 inches long.

**98998. IPOMOEA POLYANTHES** Roem. and Schult. Convolvulaceae.

No. 3763. From near the village of Vaucin, Martinique, March 10, 1932. A climbing herb with large bright-yellow flowers not abundant enough to make it a very showy species.

For previous introduction see 97769.

## 98976 to 98999—Continued.

**98999. NYMPHOIDES HUMBOLDTIANUM (H. B. K.)** Kuntze (*Limnanthemum humboldtianum* Griseb.). Menyanthaceae. Floating heart.

No. 3806. From the Lamaha Canal, near Georgetown, British Guiana, February 27, 1932. A water plant having tiny white flowers, with fringed petals which rise a foot above the floating leaves.

## 99000 to 99023.

From the West Indies, British Guiana, and Surinam. Seeds collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 20, 1932.

**99000. MORA EXCELSA** Benth. Caesalpiniaceae.

No. 3712. From Trinidad, February 16, 1932. A large forest tree, native to Guiana. The abruptly pinnate leaves are made up of 3 to 4 pairs of blunt leaflets 5 to 8 inches long, and the small flowers, borne in cylindrical spikes 6 to 10 inches long, are followed by oblong woody pods 3 to 6 inches long, each containing one seed.

**99001. PAULINIA PINNATA L.** Sapindaceae.

No. 2990. From the Botanic Garden, Georgetown, British Guiana, February 27, 1932. A strong-growing vine that climbs 30 to 40 feet to the tops of trees. The bright-red fruits, the size of cherries, are borne in racemes 6 inches or more in length.

**99002. PELTOGYNE PORPHYROCARDIA** Griseb. Caesalpiniaceae.

No. 2970. From the Botanic Garden, Georgetown, British Guiana, February 25, 1932.

For previous introduction and description see 98568.

**99003. PLATYMISCIUM POLYSTACHYUM** Benth. Fabaceae.

No. 2992. *Mormigo, palo de marimba.* From the Botanic Garden, Georgetown, British Guiana, February 25, 1932. A handsome tropical leguminous tree with opposite shining-green compound leaves made up of 3 to 5 ovate leaflets and racemes of small flowers. The wood is hard, streaked with black and red, and is considered excellent for cabinetwork.

For previous introduction see 80098.

**99004. SAMANEA SAMAN (Jacq.) Merr.** Mimosaceae.

No. 3706. From the Botanic Garden, Georgetown, British Guiana, February 23, 1932.

For previous introduction and description see 98881.

**99005 and 99006. TERAMNUS LABIALIS (L.) Spreng.** Fabaceae.

A legume found in dry places, growing over tall grasses. Its great productivity and the vigor of its growth are in its favor as a cover crop, although there is little substance in its foliage.

**99005. No. 3809.** From near Richmond, Tobago Island, March 19, 1932.

**99006. No. 3856.** From the French side of the island of St. Martin, March 17, 1932.

**99007 and 99008. TRICHACHNE INSULARIS (L.)** Nees. Poaceae. Grass.

A tropical grass cultivated in Central America where it grows from 6 to 7 feet high.

For previous introduction see 52922.

**99007. No. 3863.** From the experiment station at Harringan, Tortola Island, March 19, 1932.

**99008. No. 2809.** From Noms Rouge, Grenada, Windward Islands, February 10, 1932.

## 99000 to 99023—Continued.

99009. (Undetermined.)

No. 3827. March 3, 1932, near Kabel Station, Surinam. A vine with large yellow flowers found over tall forest trees at the edge of the Surinam River.

99010. *STEGNOSPERMA HALIMIFOLIUM* Benth. Phytolaccaceae.

No. 3878. Beata Island, Dominican Republic. A very pretty scandent shrub with fruits which are reddish brown when ripe and, when opening, show a magenta aril that almost conceals the shiny black seed. In habit it resembles the northern bittersweet, and it could be used in the same decorative way.

For previous introduction see 97901.

99011. *GUAIACUM OFFICINALE* L. Zygophyllaceae. *Lignum vitae*.

No. 3880. From Barbuda, Leeward Islands, March 14, 1932. An evergreen tree up to 30 feet high, native to tropical America. The pinnate leaves are made up of 4 to 6 obovate leaflets 2 inches long, and the small blue flowers are in terminal clusters. The yellow-brown wood is very hard and heavy and is valued for hubs, cogs, and pulleys.

99012. *DUGGENA HIRSUTA* (Jacq.) Britton. Rubiaceae.

No. 3781. From Basse Terre, Guadeloupe, French West Indies, March 13, 1932. A shrub up to 10 feet high, with long slender branches, native to the West Indies and northern South America. The lanceolate to ovate leaves are 2 to 8 inches long, and the small white flowers, borne in spicate panicles, are followed by white to blue berries one-fourth inch in diameter.

99013. *RUELLIA TUBEROSA* L. Acanthaceae.

No. 3841. From near the village of Bottom, Saba, Netherland West Indies, March 15, 1932. An erect or ascending finely pubescent herbaceous perennial 2 feet high, native to the West Indies, tropical America, and the southeastern part of the United States. The ovate to oblong leaves, 5 inches long, are undulate on the margin and have winged petioles, and the tubular purple flowers, 2 to 3 inches long, are borne in several-flowered cymes.

99014. (Undetermined.)

No. 3844. Collected near the edge of the rain forest of St. Cloud, above Basse Terre, Guadeloupe, French West Indies, March 13, 1932. A tree 50 feet high, bearing masses of yellow-brown fruit capsules that split open into three valves and show inside a parchmentlike mesocarp and 1 or 2 small seeds that are embedded in a deep orange-colored aril. When the fruit opens it resembles the northern bittersweet and could be used in the same decorative way.

99015. (Undetermined.)

No. 3792. From Saba, Netherland West Indies, March 15, 1932. An orchid growing on the mountain side, where it was exposed to the bright tropical sunlight.

99016. *BUNCHOSIA GLANDULOSA* (Cav.) DC. Malpighiaceae.

No. 3879. Collected March 17, 1932, near Little Bay, St. Martin Island, Netherland West Indies. A shrub or small tree 25 feet high, native to the West Indies. The oblanceolate to obovate leaves, 1 to 5 inches long, are bright green above and paler beneath, and the small yellow flowers, in panicles, are followed by ovoid yellow to orange drupes nearly half an inch in diameter. The fruits are said to be eaten by birds.

## 99000 to 99023—Continued.

99017. *CEPHAELIS MUSCOSA* Swartz. Rubiaceae.

No. 3782. From near St. Cloud, Basse Terre, Guadeloupe, March 13, 1932. A shrub or small tree up to 15 feet high, native to the West Indies and Brazil. The oblong-lanceolate leaves are 3 to 4 inches long, the small white flowers are in heads with pale-blue bracts, and the ripe berries are blue.

99018. *TAMONEA GUIANENSIS* Aubl. Melastomaceae.

No. 3780. From near St. Cloud, Basse Terre, Guadeloupe, March 13, 1932. A shrub or small tree up to 25 feet high, native to the West Indies. The oblong to ovate leaves, 3 to 8 inches long, are green and glabrous above and pale and scurfy beneath. The small white flowers are borne in many-flowered panicles.

99019. (Undetermined.)

No. 3707. From the Botanic Garden, Georgetown, British Guiana, February 27, 1932. A rank-growing woody vine which climbs to the tops of trees. The large opposite leaves are 4 inches wide by 5 inches long, and the immense woody pods are 7 inches by 4 inches. The large leaves make this desirable as a pergola vine for subtropical regions.

99020. *SCOLOPIA COCHINCHINENSIS* (Lour.) Cles. (*S. crenata* Clos.). Flacourtiaceae.

No. 3708. From the Botanic Garden, Georgetown, British Guiana, February 27, 1932. A thorny shrub or small tree, native to southern China. The lanceolate to ovate leaves, 2 to 6 inches long, are shining above, pale and reticulate beneath, and glandular crenate on the margin. The racemes of inconspicuous flowers are followed by red fruits about one-half inch in diameter.

99021. *ELAEODENDRON XYLOCARPUM* (Vent.) DC. Celastraceae.

No. 3864. From Tortola Island, March 19, 1932. A small tree up to 30 feet high, native to the West Indies. The elliptic to oblong coriaceous light-green leaves are 2 to 4 inches long, and the axillary clusters of small green flowers are followed by ellipsoid fruits 1 inch long.

99022. *CITHAREXYLUM FRUTICOSUM* L. Verbenaceae.

No. 3849. *Fairy tree*. From the village of Codrington, Barbuda, Leeward Islands, March 14, 1932. A tree up to 30 feet high, native to the West Indies, where the wood is used for furniture and general construction. The oblong to obovate leaves are 2 to 6 inches long. The small tubular flowers are borne in spike-like racemes and are followed by red-brown to black drupes about one-third inch in diameter.

99023. *ALLOPLECTUS CRISTATUS* (L.) Mart. Gesneriaceae.

No. 3752. From the island of Martinique, March 10, 1932. A most attractive vine with bright-red bracts and trumpet-shaped flowers that rise from these heads of clusters of bracts.

99024 to 99027. *VICIA FABA* L. Fabaceae. *Broadbean*.

From Peru. Seeds collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received May 17, 1932.

*Haba*. Broadbeans purchased in the market at Tarma, Peru; grown in the highlands at 10,000 feet altitude.

99024. No. 210. Purple beans.

99025. No. 211. White beans.

99026. No. 212. Purple-black beans.

99027. No. 213. White and purple-mottled beans.

## 99028 and 99029.

From Tasmania. Seeds presented by L. A. Evans, Sandy Bay, Hobart. Received May 18, 1932.

99028. *ANOPTERUS GLANDULOSUS* Labill. Escalloniaceae.

*Mountain laurel.* A tall evergreen Tasmanian shrub with spreading branches, oblong dentate leaves 4 to 6 inches long clustered at the ends of the branches, and axillary racemes of white flowers.

For previous introduction see 94259.

99029. *BLANDFORDIA MARGINATA* Herb. Liliaceae.

A stout herbaceous perennial, 2 to 3 feet high, native to Tasmania. The linear-lanceolate radical leaves are 1 to 3 feet long, and the upper ones are few, short, and erect. The rich brown-red tubular flowers are 1 to 2 inches long and are borne in dense racemes 6 to 8 inches long.

## 99030 to 99058.

From the West Indies, Surinam, and British Guiana. Plants collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison-V. Armour expedition. Received in April, 1932.

99030. *BROMELIA* sp. Bromeliaceae.

No. 3899. From Haiti, March 27, 1932. A pretty wine-red-leaved species growing on the battlements of the citadel of Haiti at 3,000 feet altitude, where cool moist conditions prevail during most of the year, but in the dry season the plants are subjected to intense heat and drought.

99031. *EPIDENDRUM* sp. Orchidaceae. Orchid.

No. 2626. From Saona, Dominican Republic, January 20, 1932. An orchid with yellow flowers.

99032. *EPIDENDRUM* sp. Orchidaceae. Orchid.

No. 2720. From St. Lucia, Windward Islands, February 3, 1932. An orchid with long racemes of delicate light-blue or lavender blooms, growing in masses on citrus trees in the moist valley beyond Bar de l'Isle.

99033. *HABENARIA* sp. Orchidaceae. Orchid.

No. 3754. From Martinique, March 10, 1932. A terrestrial orchid growing in full sunlight on the face of a cut in the mountain side in the rain-forest region between Port-de-France and St. Pierre.

99034 to 99036. *ONCIDIUM* spp. Orchidaceae. Orchid.

Nos. 99034 and 99035 were presented by H. Caracciola, Port-of-Spain, Trinidad, February 19, 1932.

99034. *ONCIDIUM CEBOLLETA* Swartz.

No. 2910. An epiphytic orchid with small pseudobulbs, each with a single terete obscurely furrowed leaf 1 foot long. The rigid erect panicle about 2 feet high bears six-parted flowers having red-spotted green-yellow sepals and petals and a large bright-yellow labellum. It is native to Brazil.

99035. *ONCIDIUM PAPILIO* Lindl.

Butterfly orchid.

No. 2911. An epiphytic orchid with oblong very leathery olive-green leaves, 6 to 8 inches long, mottled with purple brown. The flattened and jointed flower stem, 2 to 3 feet long, produces flowers several years in succession. The flowers are 4 to 5 inches long and 2 to 3 inches across and are mottled brown and yellow. It is native to the West Indies.

99036. *ONCIDIUM* sp.

No. 2572. From the village of Cotton Point, Rum Key, Bahamas, January 6, 1932. A large terrestrial or semiterrestrial orchid with leaves

## 99030 to 99058—Continued.

24 inches long and over an inch wide and an immense inflorescence over 8 feet tall, with many flowers which change color from light pink and yellow to deep pink or almost brown as they mature. The blossom has the fragrance of bee bread.

99037. *TILLANDSIA* sp. Bromeliaceae.

No. 2996. From the Sugar Experiment Station, Georgetown, British Guiana, February 25, 1932. A large species 3 feet long, bearing large attractive clusters of red and yellow flowers.

99038. *TILLANDSIA* sp. Bromeliaceae.

No. 3664. From near Charlotteville, Man of War Bay, Tobago, Windward Islands, February 20, 1932. A most attractive species, with long spikes of brilliant pink and yellow flowers.

99039 to 99041. *VANDA* spp. Orchidaceae. Orchid.

99039. *VANDA* sp.

No. 2688. From the Dominican Botanic Garden, January 29, 1932. Presented by F. A. Harcourt.

99040. *VANDA TERES* (Roxb.) Lindl.

No. 2835. *Agnes Joaquin*. Presented by Mrs. Fitt, Port-of-Spain, Trinidad, February 15, 1932. A vigorous hybrid which becomes 10 feet high and, when in full bloom, is a mass of lovely pink flowers. Some flowers are on the plant all the year.

99041. *VANDA TERES* (Roxb.) Lindl.

No. 2876. Presented February 16, 1932, by R. O. Williams, of the Botanic Garden, Trinidad. This straggling cactuslike orchid with large rose-colored flowers on erect stalks is grown very commonly in the gardens of Trinidad. It seems to be very vigorous and hardy, and its long peduncles make the flowers especially adapted for cutting purposes. While not so vigorous as its hybrid, no. 2835 (99040), it is a very showy plant blooming in early spring all at once, whereas the hybrid *Agnes Joaquin* is in bloom most of the year.

99042. (Undetermined.)

No. 3893. From the United States Naval Station at Guantanamo, Cuba, March 24, 1932. A pink-flowered epiphytic orchid collected in one of the driest, most arid regions of Cuba.

Nos. 99043 and 99044 were collected on Saba, Netherland West Indies, March 15, 1932.

99043. (Undetermined.)

No. 3792. A terrestrial orchid found in the perpendicular wall of a mountain side exposed to the bright tropical sunlight.

99044. (Undetermined.)

No. 3867. A terrestrial orchid growing on a rock fence near the town of Bottom.

Nos. 99045 and 99046 were collected March 27, 1932, in Haiti.

99045. (Undetermined.)

No. 3897. A semiterrestrial species, with handsome deep-purple flowers on a long-stalked inflorescence, growing on the decaying walls of the citadel at 3,000 feet altitude.

99046. (Undetermined.)

No. 3898. A terrestrial orchid collected on the decaying walls of the citadel at 1,000 feet altitude, where it is subjected to fogs and continual cold moisture in the winter. Flowers not seen.

99047. (Undetermined.)

No. 3753. From the island of Martinique, en route to St. Pierre, March 10, 1932. An epiphytic orchid with small but intensely pink flowers; of general appearance of a *Rodriquezia*.

## 99030 to 99058—Continued.

99048. (Undetermined.)

No. 26. Collected on the island of Beata, January 17, 1932; an epiphytic orchid, flowers not seen.

Nos. 99049 and 99050 were collected on St. Eustatius, Netherland West Indies, January 22, 1932.

99049. (Undetermined.)

No. 37. A large-seeded, attractive orchid growing on the rim of the crater. Flowers not seen.

99050. (Undetermined.)

No. 38. An attractive orchid with small greenish flowers.

99051. (Undetermined.)

From Grenada, Windward Islands. An orchid

99052. (Undetermined.)

An orchid.

99053. (Undetermined.)

An orchid from Great Inagua, Bahamas.

99054. (Undetermined.)

An orchid from Great Inagua, Bahamas.

99055. (Undetermined.)

An orchid from Paramaribo, Surinam.

99056. (Undetermined.)

No. 3896. From Haiti, March 27, 1932. An orchid found on the overhanging rocks at 100 feet altitude. In habit this reminds one of *Vanda teres*, with its long slender round stems hanging down in masses from the rocks. Flowers not seen.

99057. (Undetermined.)

No. 2763. From Mayoer Island, February 6, 1932. An epiphytic orchid with very large seed pods. Flowers not seen.

99058. (Undetermined.)

An orchid, received without notes.

99059 to 99070. RHODODENDRON spp.  
Ericaceae.

From Likiang, China. Seeds presented by Dr. Joseph F. Rock. Received May 11, 1932.

Collected on the western slopes of the Likiang Snow Range, Yunnan Province, in November and December 1931.

99059. RHODODENDRON sp.

A tree 12 to 16 feet high, with oblong to linear glabrous leaves and rich-pink flowers; collected in a limestone valley at 9,500 feet altitude.

99060. RHODODENDRON sp.

A shrub 3 to 5 feet high, with small glabrous leaves and pink to rose flowers, growing with pines and spruces at Atoda, 9,000 feet altitude.

99061. RHODODENDRON sp.

A shrub 3 feet high, with linear to elliptical glabrous leaves and pink flowers, collected at 10,000 feet altitude.

99062. RHODODENDRON sp.

A tree 10 feet high, with small leaves and red flowers, collected at 9,800 feet altitude.

99063. RHODODENDRON sp.

A very handsome shrub 3 to 4 feet high, with pink flowers.

99064. RHODODENDRON sp.

From the dense forests of Youngming, Bowutsu Valley, at 12,000 feet altitude. A tree 15 feet high with pink-purple flowers.

## 99059 to 99070—Continued.

99065. RHODODENDRON sp.

A tree 12 to 15 feet high, found along the streams in the Youngming forests.

Nos. 99066 to 99068 were collected on Mount Sengeganue at altitudes between 10,000 and 13,000 feet.

99066. RHODODENDRON sp.

A shrub 5 to 6 feet high, with purple flowers.

99067. RHODODENDRON sp.

A shrub or tree 6 to 20 feet high, with flowers varying from pale lavender to deep purple.

99068. RHODODENDRON sp.

A shrub 7 to 8 feet tall, with oblong leaves, deeply rufous brown woolly beneath, and pink flowers.

99069. RHODODENDRON sp.

A globose shrub 2 feet high, with blue flowers, found in swampy meadows at 10,000 feet altitude.

99070. RHODODENDRON sp.

A shrub 3 to 5 feet tall, with dull-green leaves and blue flowers, found on sunny exposed slopes at 11,000 feet altitude.

## 99071 to 99114.

From Peru. Tubers collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received May 17, 1932.

99071 to 99074. OXALIS CRENATA Jacq. Oxalidaceae.

*Oca*. Cultivated forms from high alpine meadows between 10,000 and 11,000 feet altitude.

Nos. 99071 to 99073 were bought in the market at Tarma, April 22, 1932.

99071. No. 229. An herb 8 inches high, with elongate tubers which have yellow skin mottled with red, deep wide eyes, and yellow-white flesh. The flowers vary in color.

99072. No. 230. An ornamental herb, with red elongated edible tubers which have wide pink eyes and yellowish flesh, mottled with red.

99073. No. 231. An ornamental herb which has elongated edible tubers with yellow skin, wide yellow eyes, and yellow flesh.

99074. No. 260. Purchased in the market at Huancayo, April 24, 1932. Small oval tubers with yellow skin, shallow eyes, and yellow-white flesh.

99075 to 99109. SOLANUM spp. Solanaceae.

99075. SOLANUM NEOWEBERBAUERII Wittm.

No. 265. From near Chorillos, April 30, 1932. A rare wild potato native to the dry coastal region in the environs of Lima and Callao, Peru, growing always in stony situations and depending on fog for its water supply. The tubers are small, about one half inch in diameter, several to each plant. The plant belongs to a series of which *S. macilla* is the most common, occurring in arid sandy situations.

99076 to 99106. SOLANUM TUBEROSUM L. Potato.

A collection of cultivated potatoes from the high alpine meadows between 3,000 and 11,000 feet altitude.

99076 and 99077. *Chuncho papas*. From Rio Colorado, near Merced, April 16, 1932. Cultivated by the Indians at 2,800 feet altitude.

## 99071 to 99114—Continued.

99078 and 99079. From the Hacienda Makko, near Tarma, April 20, 1932. A potato with large oval-flattened white tubers, shallow violet eyes, and white flesh. It is cultivated in alpine meadows at 11,500 feet altitude.

99078. No. 218.                      99079. No. 219.

Nos. 99080 to 99082 were bought in the market at Tarma, April 22, 1932. Cultivated in alpine meadows at 10,000 feet altitude.

99080. No. 221. Small round yellow-white tubers with violet eyes and yellow-white flesh.

99081. No. 222. Large round dark-purple tubers with deep and purple eyes and white flesh with purple vascular ring.

99082. No. 227. Large oval yellow-white tubers with deep eyes and yellow flesh.

Nos. 99083 and 99084 were collected at the experiment station, Huancayo, Peru, April 24, 1932. Grown at 10,800 feet altitude.

99083. No. 234. Large oval white tubers with shallow white eyes and white flesh. This is the best commercial potato grown in this region.

99084. No. 235. Large elongated white tubers with shallow purple eyes and white flesh.

Nos. 99085 to 99108 were bought in the market at Huancayo, April 24, 1932. Cultivated potatoes grown at 10,800 feet.

99085. No. 236. Large ovate white tubers mottled with purple, which have shallow purple eyes and white flesh.

99086. No. 237. Medium-sized oval red tubers with deep and pink eyes and white flesh.

99087. No. 238. Ovate white tubers mottled with dark purple which have deep and pink eyes and white flesh.

99088. No. 239. Small elongated red tubers with deep and pink eyes and white flesh with red vascular ring.

99089. No. 240. Irregularly ovate dark-purple tubers with shallow white eyes and yellow-white flesh.

99090. No. 241. Flattened ovate white tubers mottled with violet which have deep and violet eyes and white flesh.

99091. No. 242. Small round red tubers with deep and red eyes and white flesh tinged red at the eyes.

99092. No. 243. Small elongated red tubers with deep and red eyes and white flesh with red center.

99093. No. 244. Small round pink tubers with shallow pink eyes and yellow-white flesh.

99094. No. 245. Irregularly oval red tubers with deep and pink eyes and white flesh with red vascular ring.

99095. No. 246. Narrow-elongated dark-purple tubers with shallow purple eyes and white flesh with purple center, mottled except at the heart.

99096. No. 247. Narrow elongated white tubers mottled with red which have shallow pink eyes and gray-white flesh.

99097. No. 248. Elongated narrow white tubers mottled with violet which have shallow pink eyes and white flesh.

99098. No. 249. Large flat oval red tubers with few and shallow eyes and white flesh.

## 99071 to 99114—Continued.

99099. No. 250. Irregularly round dark-purple tubers with purple and deep eyes and white flesh.

99100. No. 251. Elongated dark-purple tubers with deep and purple eyes and white flesh with blue vascular ring.

99101. No. 252. Round dark-purple tubers with deep and purple eyes and white flesh with purple mottled center.

99102. No. 253. Round dark-purple tubers with deep and purple eyes and yellow flesh with purple marbling.

99103. No. 254. Round dark-purple tubers with deep and purple eyes.

99104. No. 255. Elongated white tubers mottled with red, which have shallow white eyes and white flesh with red center.

99105. No. 256. Elongated tubers with white skin mottled red, and shallow pink eyes.

99106. No. 257. Large elongated narrow tubers with yellow skin and shallow yellow eyes.

99107. No. 258. Elongated red tubers with shallow red eyes.

99108. No. 259. A round red-purple tuber with deep and purple eyes.

99109. SOLANUM WITTMACKII Bitter.

No. 266. A rare wild potato collected on Abancaes Hill, near Lima, at 500 feet altitude.

99110. TROPAEOLUM TUBEROSUM Ruiz and Pav. Tropaeolaceae.

No. 228. - *Massua*. From the market at Tarma, April 22, 1932. A bright-yellow carrot-shaped edible tuber with deep eyes. It is cultivated in alpine meadows at 10,000 feet altitude.

99111 to 99114. ULLUCUS TUBEROSUS Caldas. Basellaceae.

*Ullucu*; purchased in the market at Tarma, April 22, 1932, but cultivated in high mountain meadows at 10,000 feet altitude.

99111. No. 223. Elongated tubers with yellow skin blotched with pink, shallow eyes, and yellow flesh with white center.

99112. No. 224. Elongated tubers with yellow skin, shallow eyes, and yellow flesh with white center.

99113. No. 225. Short slender tubers with red skin, shallow eyes, and yellow flesh with white center.

99114. No. 226. Ovate tubers with carrot-colored skin, somewhat deep eyes, and carrot-colored flesh with white center.

## 99115 to 99138.

From Wales. Seeds presented by T. J. Jenkins, University College of Wales, Welsh Plant Breeding Station, Aberystwyth. Received May 2, 1932.

99115 to 99118. AGROPYRON spp. Poaceae.

99115. AGROPYRON CANINUM (L.) Beauv.

Awned wheatgrass.

Bs. 629. Harvested at Aberystwyth in 1930; original seed from Kew Gardens. A promising forage grass.

For previous introduction see 90124.

99116. AGROPYRON MULTIFLORUM LONGISETUM Hack.

Wheatgrass.

Bs. 380. Harvested at Aberystwyth in 1929; original seed from New Zealand.



## 99115 to 99138—Continued.

99117. *AGROPHYRON REPENS* (L.) Beauv.  
Couch grass.

Locally grown wild plants.

For previous introduction see 98531.

99118. *AGROPHYRON SCABRUM* (R. Br.) Beauv.  
Wheatgrass.

Bs. 379. Harvested at Aberystwyth in 1929; original seed from New Zealand.

99119 to 99128. *FESTUCA* spp. Poaceae. Fescue.

99119. *FESTUCA ELATIOR ARUNDINACEA* (Schreb.) Celak.

Bn. 87. Received from the Bureau of Introduction, Leningrad.

For previous introduction see 98294.

99120 to 99124. *FESTUCA ELATIOR* L.  
Meadow fescue.

Nos. 99120 to 99122 were received from Garton's, Ltd., Warrington, England, in 1930.

99120. Bf. 152. No. 10, English Pure Line Strain.

99121. Bf. 153. No. 6, Danish Pedigree Strain.

99122. Bf. 154. No. 27, Dutch Indigenous Strain.

99123. Bf. 156. Sample received through the Bureau of Introduction, Leningrad, from Irkutsk Government, Union of Soviet Socialist Republics.

99124. 2bF (1) (M1/66); open-pollinated seed from a single plant of local origin.

99125. *FESTUCA GIGANTEA* (L.) Vill.  
Great fescue.

597 (2) Bs. (1) (M1/67); seed from a single plant self-pollinated. Original seed came from wild plants near Belfast, Ireland.

99126. *FESTUCA OVINA* L. Sheep fescue.

B1. 1175. Sample from Sutton & Sons, Reading; described only as "sheep's fescue."

For previous introduction see 98296.

99127 and 99129. *FESTUCA RUBRA* L. Red fescue.

99127. B1. 728/ $\frac{2}{30}$ ; Welsh Plant Breeding Station pedigree strain; original material from old British pastures.

99129. B1. 1176. Sample from Sutton & Sons; described as "Chewing's fescue."

99129. *HORDEUM MARITIMUM* With. Poaceae.  
Grass.

Bs. 492. Sample harvested at Aberystwyth in 1930; original seed from Australia.

99130. *HORDEUM MURINUM* L. Poaceae. Grass.

Bs. 592-595. Seed harvested at Aberystwyth in 1930; original material native British grass.

For previous introduction see 78784.

99131 to 99138. *LOLIUM* spp. Poaceae.

99131 to 99136. *LOLIUM PERENNE* L.  
Perennial ryegrass.

99131. Bs. 962. *Wimmera* ryegrass; 1930 seed from the Government Experiment Farm, Cowra, New South Wales; not yet tested at Aberystwyth.

99132. Ba. 1769. Original seed received from Australia as representative of typical and true *Wimmera* ryegrass; present sample harvested at Aberystwyth in 1928.

## 99115 to 99138—Continued.

99133. Ba. 2246. A mixture from the Hawke's Bay district of New Zealand, received from the Plant Research Station, Palmerston North, New Zealand.

Nos. 99134 and 99135 were received from Sutton & Sons, Reading, England.

99134. Ba. 2247. Commercial perennial ryegrass.

99135. Ba. 2248. British wild perennial ryegrass.

99136. Ba. 2251. Seed harvested from an old Hampshire pasture. Received from Leighton, Ltd., Whitechurch, Shropshire, England.

99137 and 99138. *LOLIUM TEMULENTUM* L.  
Darnel.

99137. Bs. 548. Original seed received from the Basel Botanischer Garten; present sample harvested in Aberystwyth in 1930.

99138. Bs. 586. Original seed from Sutton & Sons, Reading; present seed harvested at Aberystwyth in 1930.

## 99139 to 99242.

From Kweichow and Hunan Provinces, China. Seeds presented by Albert N. Steward, Department of Botany, College of Agriculture, University of Nanking, Nanking. Received April 23, 1932.

99139 to 99141. *ACANTHOPANAX* spp. Araliaceae.

99139. *ACANTHOPANAX* sp.

No. 112. *Tze Teng Tai*. From a rocky slope in Laoshun, Fangchingshan, Kiangkouhsien, October 1, 1931. A shrub up to 15 feet tall, with black fruit.

99140. *ACANTHOPANAX* sp.

No. 105. *Tze Lao Pao*. Collected November 29, 1931, on a brushy slope near Tayoh, Tahoyen, Kiangkouhsien, at 4,000 feet altitude. A shrub up to 7 feet tall.

99141. *ACANTHOPANAX RICINIFOLIUM* Seem.

No. 109. *Tze Chiu*. From Miaowang, Kiangkouhsien, December 1, 1931, at 1,500 feet altitude. A tree about 60 feet tall and 25 inches in diameter, with black fruit. Found along the roadside.

99142. *ACER* sp. Aceraceae. Maple.

No. 12. *Ching Chuan*. From a rocky slope near Laoshan, Fangchingshan, Kiangkouhsien, October 1, 1931, at 7,000 feet altitude. A tree 30 feet high and a foot in diameter.

99143. *ACER* sp. Aceraceae. Maple.

No. 106. From a hillside in Papan, Kiangkouhsien, at 1,500 feet altitude, December 6, 1931. An evergreen tree about 35 feet high and 15 inches in diameter.

Nos. 99144 to 99150 were collected in Tahoyen, Kiangkouhsien.

99144. *ACTINIDIA CHINENSIS* Planch. Dilleniaceae.  
Yangtao.

No. 94. From a brushy slope, November 26, 1931, at 3,000 feet altitude. A strong trailing shrub with edible brownish fruit covered with rusty hairs.

For previous introduction see 77643.

99145. *ARDISIA* sp. Myrsinaceae.

No. 89. *Pa Chao Ching Lung*. Collected November 7, 1931, on a brushy slope at 2,500 feet altitude. A low shrub about 3 feet tall, with scarlet fruit.

## 99139 to 99242—Continued.

99146. *BENZOIN* sp. Lauraceae.

No. 35. *Shui Mei Yah*. Collected September 5, 1931, at 3,000 feet altitude. A shrub about 20 feet high, with greenish fruit which becomes red and black, found on a brushy slope.

99147. *BERBERIS* sp. Berberidaceae. **Barberry.**

No. 84. From near Huangchiawan, November 26, 1931, at 4,500 feet altitude. A shrub with black fruit.

99148 to 99150. *BETULA* spp. Betulaceae. **Birch.**99148. *BETULA* sp.

No. 19. *Hua Kan Erh* or *Hua Shu*. Collected on a rocky slope near Huangchiawan, September 11, 1931, at 4,000 feet altitude. A tree about 50 feet high with brownish fruit.

Nos. 99149 and 99150 were collected October 20, 1931, on a rocky slope at 4,000 feet altitude.

99149. *BETULA* sp.

No. 11. *Tieh Hua Kan*, a tree 60 feet high and a foot in diameter.

99150. *BETULA* sp.

No. 11-A. *Tieh Hua Kan*, a tree 60 feet high and a foot in diameter.

Nos. 99151 and 99152 were collected in Fangchingshan, Kiangkouhsien, at 3,500 feet altitude.

99151. *CARPINUS* sp. Betulaceae. **Hornbeam.**

No. 26. From a rocky slope below Szetzeah, October 4, 1931. A tree about 50 feet high and 10 inches in diameter, with brownish fruit.

99152. *CARPINUS* sp. Betulaceae. **Hornbeam.**

No. 45. From a rocky slope in the forest at Hweihsiangping, October 20, 1931. A tree about 65 feet tall and 15 inches in diameter, with brownish fruit.

99153. *CELASTRUS* sp. Celastraceae.

No. 53. From a brushy slope in Miaowang, Kiangkouhsien, September 26, 1931, at 1,500 feet altitude. A shrub about 15 feet high with yellow fruits. The seeds are covered with a red aril.

99154. *CELTIS KORAIENSIS* Nakai. Ulmaceae. **Haokberry.**

No. 58. *Chien Chiu Tze*. Collected along the roadside in Maolung, Kingkianghsien, November 6, 1931, at 2,000 feet altitude. A tree up to 40 feet high, with coarsely serrate, broadly ovate leaves 4 to 6 inches long and dull-orange, ovoid fruits one-fourth inch long.

99155. *CLEMATIS* sp. Ranunculaceae.

No. 13. *Hsiao Hsieh Teng*. From Laoshan, Fangchingshan, Kiangkouhsien, October 1, 1931, at 6,500 feet altitude. A twining herb, found along a forest roadside.

Nos. 99156 to 99163 were collected in Tahoyen, Kiangkouhsien.

99156. *CORNUS* sp. Cornaceae. **Dogwood.**

No. 63. *Teng Tai*. Collected September 3, 1931, at 3,000 feet altitude. A tree about 35 feet high and 15 inches in diameter, with black fruits; found near a stream.

99157. *CUNNINGHAMIA LANCEOLATA* (L.) Hook. Pinaceae. **China-fr.**

No. 31. *Sha Mu*. Collected October 10, 1931, at 3,500 feet altitude. A common forest tree about 65 feet tall growing on rocky slopes between 1,800 and 4,000 feet altitude.

99158. *CUPRESSUS FUNEBRIS* Endl. Pinaceae. **Mourning cypress.**

No. 69. *Pai Hsiang*. Collected October 15, 1931, at 3,000 feet altitude. A very graceful ever-

## 99139 to 99242—Continued.

green tree, native to China, growing on rocky slopes between 3,000 and 7,000 feet.

For previous introduction see 76900.

99159. *DAVIDIA INVOLUCRATA* Baill. Cornaceae. **Dovetree.**

No. 79. *Shan Mu Kou*. Collected November 25, 1931, at 4,500 feet altitude. A tree native to central and western China, which becomes 75 feet high with a shapely pyramidal crown, bright-green oval sharply toothed leaves 3 to 6 inches long, blooms with 2 or 3 large unequal snow-white bracts, followed by brownish pear-shaped fruits.

For previous introduction see 76030.

99160. *DECAISNEA FARGESII* Franch. Lardizabalaceae.

No. 82. From Huangchiawan, November 1, 1931, at 4,500 feet altitude. A handsome shrub up to 15 feet high with large pinnate leaves 3 feet long, greenish flowers in long pendulous racemes, and deep-blue fruits 3 to 4 inches long. Native to western China.

For previous introduction see 95507.

99161. *DIOSPYROS LOTUS* L. Diospyraceae. **Dateplum.**

No. 60. *Sze Tze*. Collected October 25, 1931, at 5,000 feet altitude. A tree about 20 feet high with small yellowish fruit. It is used as a stock on which to graft the better varieties of persimmons.

For previous introduction see 91515.

99162. *ELAEOCARPUS SIKKIMENSIS* Masters. Elaeocarpaceae.

No. 70. *Shuan Tsao*. From a rocky slope near Chingchaoqing, Tahoyen, Kiangkouhsien, November 8, 1931, at 2,000 feet altitude. A handsome evergreen tree with erect racemes of small white flowers and sharp-pointed serrate leaves about 8 inches long.

For previous introduction see 93204.

99163. *ENKIANTHUS* sp. Ericaceae.

No. 83. From Huangchiawan, November 25, 1931, at 4,500 feet altitude. A shrub up to 7 feet high, growing near a stream; the fruits are whitish.

99164. *EUGENIA* sp. Myrtaceae.

No. 62. From Chingchaoqing, Fangchingshan, Kiangkouhsien, October 23, 1931, at 3,500 feet altitude. A shrub up to 10 feet high with black fruits.

99165. *EUONYMUS ALATUS* (Thunb.) Rupr. Celastraceae. **Winged euonymus.**

No. 56. *Pan Lung Shu*. From Tahoyen, Kiangkouhsien, October 8, 1931, at 2,800 feet altitude. A spreading shrub up to 5 feet high, with corky branches, sharply toothed elliptic leaves about 2 inches long, small clusters of yellowish flowers, and small two-seeded fruits.

For previous introduction see 82508.

Nos. 99166 and 99167 are from Fangchingshan, Kiangkouhsien.

99166. *EURYA* sp. Theaceae.

No. 97. Collected November 26, 1931, at 2,800 feet altitude. A shrub or small tree up to 35 feet tall with black fruit. It is usually found on a brushy slope under forest trees.

99167. *EURYA* sp. Theaceae.

No. 65. *Pa Hua Mu*. From a forest slope near Machaoho, October 20, 1931, at 3,500 feet altitude. A very ornamental tree about 65 feet high, with scarlet fruits.

## 99139 to 99242—Continued.

99168. FAGUS sp. Fagaceae.

Beech.

No. 15. From a rocky slope near Huangchliawan, Tahoyen, Kiangkouhsien, October 15, 1931, at 5,000 feet altitude. A tree about 45 feet high and over 2 feet in diameter.

99169. FAGUS sp. Fagaceae.

Beech.

No. 21. From a rocky slope at Hwehsiangping, Fangchingshan, Kiangkouhsien, October 13, 1931, at 5,000 feet altitude. A tree about 65 feet high and over a foot in diameter.

99170 to 99173. FICUS spp. Moraceae.

Fig.

99170. FICUS sp.

No. 34. From a brushy slope near Tahoyen, Kiangkouhsien, September 5, 1931, at 3,000 feet altitude. A shrub about 7 feet tall with red fruits.

99171. FICUS sp.

No. 44. From Yingkianghsien, November 15, 1931, at 1,600 feet altitude. A shrub about 3 feet high with fruit tinged red, found along streams.

99172. FICUS sp.

No. 75. From Hwehsiangping, Fangchingshan, Kiangkouhsien, October 11, 1931, at 5,000 feet altitude. A shrub about 7 feet high with fruit tinged red; growing on a brushy slope.

99173. FICUS PUMILA L.

Climbing fig.

No. 110. From Mayang, Hunan Province, December 20, 1931, at 600 feet altitude. A woody vine about 35 feet long, growing on a tree trunk near the river.

99174. WARNEHIA AUGUSTA Stickm. (*Gardenia florida* L.). Rubiaceae.

Cape-jasmine.

No. 99. Huang Tze Tze. From Fangchingshan, Kiangkouhsien, November 26, 1931, at 6,500 feet altitude. A bush about 7 feet high with yellowish fruits which are used for dyeing purposes.

99175. HELWINGIA sp. Cornaceae.

No. 3. From Lianfengyah, Tsuenyih, August 3, 1931, at 3,500 feet altitude. A deciduous shrub 3 to 5 feet high with small green-white flowers borne on the midrib of the leaves followed by black fruits.

99176 to 99179. HYDRANGEA spp. Hydrangeaceae.

Nos. 99176 to 99178 are from Tahoyen, Kiangkouhsien.

99176. HYDRANGEA sp.

No. 10. Collected October 20, 1931, at 3,000 feet altitude. A shrub with brown capsules, growing on a brushy slope.

99177. HYDRANGEA sp.

No. 54. Collected September 20, 1931, at 2,800 feet altitude. A bush about 3 feet high; the sterile flowers are tinged with red and the capsules are brownish.

99178. HYDRANGEA sp.

No. 81. Collected November 15, 1931, at 4,500 feet altitude. A shrub with brownish capsules.

Nos. 99178 and 99180 were collected at Fangchingshan, Kiangkouhsien.

99179. HYDRANGEA sp.

No. 33. From Machaoho, October 26, 1931, at 3,000 feet altitude. A trailing shrub about 18 feet long, found on a rocky slope beside the road.

99180. ILEX sp. Aquifoliaceae.

No. 48. From the roadside near Hwehsiangping, at 5,300 feet altitude, October 25, 1931. An evergreen shrub about 18 feet high with reddish fruit.

## 99139 to 99242—Continued.

99181. ILEX sp. Aquifoliaceae.

No. 93. From a brushy slope near Chingchaoing, Tahoyen, Kiangkouhsien, November 14, 1931, at 2,500 feet altitude. An evergreen tree about 40 feet high and 15 inches in diameter, with bright-red fruits.

Nos. 99182 to 99184 were collected in Fangchingshan, Kiangkouhsien.

99182. ILLICIUM sp. Magnoliaceae.

No. 29. Hwei Hsiang. From near Hwehsiangping, October 2, 1931, at 5,000 feet altitude. A tree up to 35 feet tall and 12 inches in diameter, commonly found on rocky slopes and in the forest.

99183. JUGLANS MANDSHURICA Maxim. Juglandaceae.

Walnut.

No. 50. Shan Heh Tao. From near Fukwohsze, November 15, 1931, at 5,000 feet altitude. A tree over 30 feet high and 16 inches in diameter.

99184. KADSURA sp. Magnoliaceae.

No. 52. From Chawchang, November 1, 1931, at 3,600 feet altitude. A trailing shrub with red tinged fruit.

Nos. 99185 and 99186 were collected at Huangchliawan, Tahoyen, Kiangkouhsien.

99185. LIGUSTRUM sp. Oleaceae.

Privet.

No. 86. Collected November 25, 1931, at 4,500 feet altitude. A shrub about 15 feet high, with black fruit.

99186. LILIUM GIGANTEUM Wall. Liliaceae.

Giant lily.

No. 39. Nan Pai Ho. Collected October 7, 1931, at 5,000 feet altitude.

For previous introduction and description see 98740.

99187. LIQUIDAMBAR FORMOSANA Hance. Hamamelidaceae.

Formosa sweetgum.

No. 23. A handsome tree up to 100 feet high, with a straight trunk, a much-branched head, and frequently buttressed roots. The leaves turn to chestnut brown or red in the autumn and are retained late into the winter. This is one of the most widely distributed trees in China, being particularly abundant in western Hupeh. It is also cultivated in Japan.

For previous introduction see 71315.

Nos. 99188 to 99190 were collected in Tahoyen, Kiangkouhsien.

99188. LIRIODENDRON CHINENSE (Hemsl.) Sargent. Magnoliaceae.

Chinese tuliptree.

No. 41. Yuh Choh Pan. Collected October 28, 1931, at 3,200 feet altitude. A tree about 35 feet tall and 32 inches in diameter, found on a rocky slope.

99189. MICHELIA CHAMPACA L. Magnoliaceae.

Champac.

No. 74. Collected October 25, 1931, at 3,000 feet altitude. A tall evergreen tree, native to the Himalayas, with pubescent branchlets, ovate-lanceolate leaves 8 to 10 inches long, and axillary, usually solitary, pale-yellow fragrant flowers 2 inches across.

For previous introduction see 93544.

99190. NEILIA sp. Rosaceae.

No. 88. From Huangchliawan, November 25, 1931, at 4,500 feet altitude. A shrub about 7 feet high, growing along a stream.

99191 to 99193. PROTINIA spp. Malaceae.

99191. PROTINIA sp.

No. 59. From Fangchingshan, Kiangkouhsien, November 9, 1931, at 2,500 feet altitude. A tree about 25 feet high and 8 inches in diameter with bright-red fruits, growing on a brushy slope.

## 99139 to 99242—Continued.

99192. *PHOTINIA* sp.

No. 113. From Chingchaoping, Tahoyen, Kiangkouhsien, October 23, 1931, at 3,000 feet altitude. A shrub about 15 feet high with red fruits, growing on a brushy slope.

Nos. 99193 to 99196 were collected at Fangchingshan, Kiangkouhsien.

99193. *PHOTINIA* sp.

No. 51. From Hweihsiangping, October 25, 1931, at 5,000 feet altitude. A tree about 15 feet high and 4 inches in diameter, with bright-red fruits. Found on a rocky forest slope.

99194. *SORBUS* sp. Malaceae. Mountain-ash.

No. 104. From Niutoushan, November 29, 1931, at 4,000 feet altitude. A tree up to 35 feet high and 4 inches in diameter with spreading branches, growing on a rocky forest slope.

99195. *PITTSOPORUM* sp. Pittosporaceae.

No. 64. From a rocky slope near Machaoho, October 3, 1931, at 1,800 feet altitude. A shrub about 15 feet tall and 6 inches in diameter, with green fruits containing scarlet seeds.

99196. *PITTSOPORUM GLABRATUM* Lindl. Pittosporaceae.

No. 90. From a brushy slope near Huangchiawan, September 25, 1931, at 4,500 feet altitude.

99197. *PRUNUS* sp. Amygdalaceae. Plum.

No. 1. From Liangfengyah, Tsuenyih, August 28, 1931, at 2,800 feet altitude. A small sweet yellow-fleshed red plum.

99198. *PRUNUS* sp. Amygdalaceae. Plum.

No. 5. July 31, 1931. A plum, similar to no. 1 [99197].

Nos. 99199 and 99200 were collected in Tahoyen, Kiangkouhsien.

99199. *PYRACANTHA* sp. Malaceae. Firethorn.

No. 36. From Miaowang, October 25, 1931, between 1,800 and 3,000 feet altitude. A shrub up to 7 feet tall with bright-red fruits; commonly found along brushy slopes and dry stream beds.

99200. *PYRUS* sp. Malaceae. Pear.

No. 96. Collected on a brushy slope, November 26, 1931, at 2,800 feet altitude. A shrub about 7 feet tall, with yellowish fruit.

99201. *RHAMNELLA* sp. Rhamnaceae.

No. 6. From Liangfengyah, Tsuenyih, August 3, 1931, at 3,400 feet altitude. A deciduous shrub or small tree closely related to *Rhamnus*. The leaves are alternate, stipulate, serrulate, and the small green flowers, in axillary clusters, are followed by small orange-yellow one-seeded drupes which become black when ripe.

99202. *RHAMNUS* sp. Rhamnaceae. Buckthorn.

No. 78. From Tahoyen, Kiangkouhsien, November 20, 1931, at 2,500 feet altitude. A shrub about 7 feet high, with black fruits, growing along the roadside.

99203 to 99208. *RHODODENDRON* spp. Ericaceae.

Nos. 99203 to 99205 were collected near Hweihsiangping, Fangchingshan, Kiangkouhsien.

99205. *RHODODENDRON* sp.

No. 37. From a rocky slope, October 20, 1931, at 3,400 feet altitude. A shrub about 15 feet high.

99204. *RHODODENDRON* sp.

No. 46. From near Iaoshan, October 20, 1931, at 4,800 feet altitude. A common forest tree with the leaves silvery white beneath.

## 99139 to 99242—Continued.

99205. *RHODODENDRON* sp.

No. 72. Collected October 15, 1931, at 4,300 feet altitude. A shrub or small tree about 20 feet high, growing on a rocky slope.

99206. *RHODODENDRON* sp.

No. 85. From near Huangchiawan, Tahoyen, Kiangkouhsien, November 26, 1931, at 4,500 feet altitude. An evergreen shrub about 20 feet tall growing on a brushy slope.

99207. *RHODODENDRON* sp.

No. 103. *Ta Shieh Niu*. From a brushy slope near Niutoushan, Fangchingshan, Kiangkouhsien, November 21, 1931, at 4,000 feet altitude. A shrub or small tree about 15 feet high and 6 inches in diameter.

99208. *RHODODENDRON* sp.

No. 111. From Hweihsiangping, Fangchingshan, Kiangkouhsien, October 20, 1931, at 3,400 feet altitude. A shrub about 6 feet tall growing on a brushy slope.

99209. *RHUS* sp. Anacardiaceae. Sumach.

No. 73. *Chieh Shu*. From Tahoyen, Kiangkouhsien, November 5, 1931, at 3,100 feet altitude. A tree up to 15 feet high and 10 inches in diameter, growing on a brushy slope.

99210 to 99214. *ROSA* spp. Rosaceae. Rose.99210. *ROSA* sp.

No. 24. From Tahoyen, Kiangkouhsien, September 25, 1931, at 3,400 feet altitude. A trailing shrub about 15 feet long, with reddish fruit, growing on a rocky slope.

99211. *ROSA* sp.

No. 114. From Mingchiachang, Kiangkouhsien, December 2, 1931, at 1,200 feet altitude. A shrub with reddish fruits, growing along the roadside.

99212. *ROSA LAEVIGATA* Michx. Cherokee rose.

No. 107. *Hunan Kou*. From Mayang, Hunan Province, December 20, 1931, at 600 feet altitude.

99213. *ROSA MULTIFLORA* Thunb. Japanese rose.

No. 115. From Hehtehchang, Kiangkouhsien, December 3, 1931, at 900 feet altitude.

For previous introduction see 75691.

99214. *ROSA ROXBURGHII* Tratt. Roxburghrose.

No. 47. *Tze Li*. From Tahoyen, Kiangkouhsien, October 14, 1931, at 3,100 feet altitude. A common shrub about 7 feet high, with pinkish flowers followed by edible yellow-brown fruits.

99215 to 99218. *RUBUS* spp. Rosaceae.

Nos. 99215 and 99216 were collected July 23, 1931, at 3,400 feet altitude at Liangfengyah, Tsungyih.

99215. *RUBUS* sp.

No. 2. A widely distributed raspberry common along the roadsides and on brushy slopes. The orange-yellow fruits have a pleasant acid flavor and are three fifths of an inch in diameter.

99216. *RUBUS* sp.

No. 4. A shrub with small dark-red somewhat bitter fruits, separating from the receptacle like a raspberry, but the pedicel is easily deciduous so that the fully ripe fruit often falls together with the receptacle and pedicel.

99217. *RUBUS* sp.

No. 28. From Fangchingshan, Kiangkouhsien, October 1, 1931, at 6,800 feet altitude. A

## 99199 to 99242—Continued.

trailing shrub about 15 feet long with black fruits; collected from a rocky slope.

99218. *RUBUS* sp.

No. 32. *Tze Wu Pao*. From Tahoyen, Kiangkouhsien, September 25, 1931, at 3,400 feet altitude. A trailing shrub about 15 feet long with black fruits; collected from a brushy slope.

Nos. 99219 to 99221 were from Fangchingshan, Kiangkouhsien.

99219. *SCHIMA* sp. Theaceae.

No. 25. *Shuen Pan Tze*. October 2, 1931, at 5,300 feet altitude. An evergreen tree about 60 feet tall and 20 inches in diameter, with black fruits.

99220. *SCHIMA* sp. Theaceae.

No. 57. From Nantienyoh, November 18, 1931, at 2,800 feet altitude. An evergreen tree about 60 feet high and 16 inches in diameter, growing on a rocky brushy slope.

99221. *SLOANEA HEMSLEYANA* (Ito) Rehd. and Wils. Elaeocarpaceae.

No. 14. *Yo Chi Pa*. From a brushy slope near Machaoho, November 1, 1931, at 1,800 feet altitude. A tree about 60 feet tall and 4 feet in diameter.

99222. *SORBUS* sp. Malaceae. Mountain-ash.

No. 66. *Ai Li Tze*. From a rocky slope in the forest at Niutoushan, Tahoyen, Kiangkouhsien, September 7, 1931, at 3,900 feet altitude. A tree about 30 feet tall and 1 foot in diameter, with brownish fruit.

99223. *SORBUS* sp. Malaceae. Mountain-ash.

No. 76. From Fenghsiangping, Fangchingshan, Kiangkouhsien, October 18, 1931, at 4,800 feet altitude. A tree up to 60 feet tall and 18 inches in diameter, with fleshy pink fruits.

99224. *SPATHOLOBUS* sp. Fabaceae.

No. 18. *Wei Chan Tze*. From the city of Kiangkou, September 21, 1931, at 1,500 feet altitude. A trailing shrub about 30 feet long found commonly along the roadside. The winged fruits are tinged red.

99225. *STRANVAESIA* sp. Malaceae.

No. 68. *Shan Yang Niu*. From a rocky slope near Hweihsiangping, Fangchingshan, Kiangkouhsien, October 2, 1931, at 6,250 feet altitude. A tree up to 30 feet high and 16 inches in diameter.

Nos. 99226 to 99234 were collected in Tahoyen, Kiangkouhsien.

99226. *STRANVAESIA DAVIDIANA* Decaisne. Malaceae.

No. 102. *Shan Huang Tze*. Collected November 29, 1931, at 3,900 feet altitude. A shrub or tree about 15 feet high and 3 inches in diameter with bright-red fruits, found both on rocky slopes and in the forest.

For previous introduction see 93960.

99227. *STYRAX* sp. Styracaceae.

No. 30. From a rocky slope, November 5, 1931, at 3,000 feet altitude. A tree up to 35 feet tall and 10 inches in diameter with grayish fruits.

99228. *TAXUS CHINENSIS* (Pilger) Rehd. Taxaceae. Chinese yew.

No. 49. *Shieh Pai*. Collected November 5, 1931, at 3,000 feet altitude. A tree about 30 feet high and 14 inches in diameter, with reddish fruits.

99229. *THEA OLEOSA* Lour. Theaceae.

No. 38. *Yu Cha* or *Shan Cha*. From a rocky slope, October 7, 1931, at 2,800 feet altitude. A

## 99199 to 99242—Continued.

shrub or tree about 25 feet high and 8 inches in diameter. The fruits are brownish and oil is extracted from the seeds.

99230. *VACCINIUM* sp. Vacciniaceae.

No. 98. Collected November 26, 1931, at 2,800 feet altitude from a brushy slope. A shrub about 7 feet tall with black fruits.

99231 to 99233. *VIBURNUM* spp. Caprifoliaceae.

Nos. 99231 and 99232 were collected November 25, 1931, at 4,500 feet altitude.

99231. *VIBURNUM* sp.

No. 80. A shrub about 10 feet tall with blue black fruits, growing on rocky slopes, usually along a stream.

99232. *VIBURNUM* sp.

No. 87. A shrub up to 15 feet high with bright-red fruits, found on a brushy slope.

99233. *VIBURNUM* sp.

No. 11. Collected November 27, 1931, at 2,800 feet altitude. A shrub about 7 feet high with red fruits, growing on brushy slopes.

99234. *ZANTHOXYLUM* sp. Rutaceae. Prickly-ash.

No. 40. *Tze Chiu*. From a rocky slope near Jenchi, October 28, 1931, at 3,200 feet altitude. A tree about 60 feet tall and 30 inches in diameter.

99235. *ZANTHOXYLUM* sp. Rutaceae. Prickly-ash.

No. 92. From a brushy slope in Chingchaoping, Kiangkouhsien, November 24, 1931, at 2,800 feet altitude. A thorny shrub about 15 feet tall, with brownish fruits and shining black seeds.

Nos. 99236 to 99238 were collected from rocky slopes in Fangchingshan, Kiangkouhsien.

## 99236. (Undetermined.)

No. 55. Collected near Soochiapo, October 22, 1931, at 3,000 feet altitude. An evergreen tree about 35 feet tall and 18 inches in diameter.

## 99237. (Undetermined.)

No. 77. Collected October 28, 1931, at 6,250 feet altitude. A tree about 30 feet tall and 16 inches in diameter, with reddish fruits.

## 99238. (Undetermined.)

No. 20. From near Chiungtzze, October 3, 1931, at 6,250 feet altitude. A tree about 30 feet tall and 10 inches in diameter with red fruits.

## 99239. (Undetermined.)

No. 17. From a brushy slope at Huangchiawan, Tahoyen, Kiangkouhsien, September 11, 1931, at 4,300 feet altitude. A shrub about 20 feet tall and 4 inches in diameter with black fruits.

## 99240. (Undetermined.)

No. 71. From a brushy slope at Chingchaoping, Tahoyen, Kiangkouhsien, October 28, 1931, at 3,000 feet altitude. A trailing shrub about 30 feet long; the pale-green fruits become brown when ripe.

## 99241. (Undetermined.)

No. 43. *Tung Ching*. From the forest margin at Laoshan, Fangchingshan, Kiangkouhsien, September 30, 1931, at 6,500 feet altitude. An evergreen shrub about 15 feet tall, with bluish fruits.

## 99242. (Undetermined.)

No. 108. *Tung Loh Tze*. From a forested slope at Fangchingshan, Kiangkouhsien, October 3, 1931, at 6,250 feet altitude. A tree about 30 feet tall and 1 foot in diameter, with bluish fruits.

**99243. AMYGDALUS PERSICA L. Amygdalaceae. Peach.**

From Australia. Plants purchased from George D. F. Althofer, "Glen Ora" Dripstone, New South Wales. Received May 24, 1932.

**99244 to 99288. ZEA MAYS L. Poaceae. Corn.**

From Peru. Seeds collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received May 17, 1932.

Nos. 99244 to 99287 were purchased in the market at Huancayo, Peru, April 24, 1932. Grown at 10,800 feet altitude.

99244. Variegated.	99266. Red.
99245. Red.	99267. Red.
99246. White.	99268. Variegated.
99247. Variegated.	99269. Variegated.
99248. White.	99270. Red.
99249. Red.	99271. Variegated.
99250. Red.	99272. Red.
99251. White.	99273. Bronze variegated.
99252. Red.	99274. Variegated.
99253. Brown variegated.	99275. Variegated.
99254. Red.	99276. Variegated.
99255. Variegated.	99277. Red.
99256. Red.	99278. White.
99257. Red.	99279. Red.
99258. Variegated.	99280. White.
99259. Variegated.	99281. White.
99260. Red.	99282. White.
99261. Bronze.	99283. White.
99262. Variegated.	99284. Red.
99263. Bronze.	99285. Red.
99264. Red.	99286. Variegated.
99265. Red.	99287. White.

99288. No. 202. From Rio Colorado, near Marced, Peru, at 3,000 feet altitude, April 16, 1932. A few grains of red corn taken from a native hut.

**99289. BAMBUSA MULTIPLEX (Lour.) Rausch. Hedge bamboo.**

From Florida. Plant presented by J. H. Wells, Baldwin. Received May 15, 1929. Numbered in May 1932.

This distichous, or fern-leaved, variety of the hedge bamboo has slender culms with green stripes of various widths on a yellowish to pinkish ground color and is of dwarf habit, usually not more than 5 feet high. However, according to a statement by C. E. Pleas, of Chipley, Fla., from whom Mr. Wells obtained his original plant, the variety shows a strong tendency to revert to the species type, in which the leaves are much larger and fewer on the branchlets, and culms up to 30 feet in height are produced; the foliage then appears similar in form to that of the well-known varieties *Alphonse Karri* and *Argentea striata*. The new culms of this dwarf variety usually appear during June and extend their branches and leaves within a few weeks, differing in these respects from the type and from the large-growing varieties of the species.

**99290. PHASEOLUS LUNATUS L. Fabaceae. Lima bean.**

From Haiti. Seed presented by Pierre G. Sylvain, chef de la Section d'Horticulture, Service National de la Production Agricole, Port-au-Prince. Received May 18, 1932.

Variegated beans, purchased in the market at Port-au-Prince.

**99291 to 99301. DIANTHUS WINTERI J. L. Gibson. Silenaceae. Pink.**

From England. Plants purchased from Gibson & Amos, Ltd., Cranleigh, Surrey. Received May 27, 1932.

99291. <i>Betty Morton</i> .	99297. <i>Mrs. Wormald</i> .
99292. <i>Chery Morton</i> .	99298. <i>Norah</i> .
99293. <i>Ellen</i> .	99299. <i>Olive</i> .
99294. <i>Joey</i> .	99300. <i>Rachel</i> .
99295. <i>Meg Gardner</i> .	99301. <i>Winifred</i> .
99296. <i>Mrs. Black</i> .	

**99302 to 99314. ARACHIS HYPOGAEA L. Fabaceae. Peanut.**

From the Union of Soviet Socialist Republics. Seeds presented by the director, Regional Oil Plant Station, Kruglik, northern Caucasus. Received May 5, 1932.

A collection of peanuts introduced for the use of Department specialists.

**99302 to 99312. Spanish variety.**

99302. No. 154.	99308. No. 161.
99303. No. 155.	99309. No. 162.
99304. No. 156.	99310. No. 0286.
99305. No. 157.	99311. No. 0305.
99306. No. 158.	99312. No. 0344.
99307. No. 159.	
99313. No. 0433. <i>Valencia</i> variety.	
99314. No. 0512. <i>Spanish</i> variety.	

**99315. LYSILOMA LATISILIQUA (L.) Benth. Mimosaceae.**

From Cuba. Seeds collected in Oriente Province by J. G. Jack, Arnold Arboretum, and presented through Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos. Received June 6, 1932.

For previous introduction and description see 98979.

**99316 to 99318. CAPSICUM ANNUUM L. Solanaceae. Common redpepper.**

From Spain. Seeds presented by the Granja Escuela de Capataces Agricolas y Estaciones Especiales de Valencia, through Señor Miguel de Echegary, agricultural attaché, Spanish Embassy, Washington, D.C. Received May 23, 1932.

A collection of the best commercial varieties of mild-flavored sweet redpeppers grown in Spain.

99316. <i>Cornicabra</i> .
99317. <i>Grande comun</i> .
99318. <i>Morron gordo</i> .

**99319. CYRTOSPERMA SENEGALENSE**  
(Schott) Engler. Araceae.

From Cuba. Seeds presented by Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos. Received June 6, 1932.

A curious aroid which sends up its spathe on a spiny stem 10 feet high. The spathe itself is 16 inches long. The plant requires wet sandy soil, tropical conditions, and moist atmosphere.

For previous introduction see 90914.

**99320. PHASEOLUS LUNATUS L.** Fabaceae. Lima bean.

From Cuba. Seeds presented by Thomas R. Towns, Holguin. Received April 29, 1932.

A pole bean which grows for several years in Cuba and produces beans almost continuously. The pods are used as a green bean.

Introduced for the use of Department specialists.

**99321. CITRUS HYSTRIX DC.** Rutaceae. Cabuyao.

From India. Seeds presented by R. N. Parker, forest botanist, Forest Research Institute, New Forest, Dehra Dun. Received May 31, 1932.

From plants growing wild in Kumaon. A large thorny tree, 20 to 60 feet high, with leaves 6 to 8 inches long. The fruits vary in shape from oblate to pyriform-turbinate or oblong; the smooth to more or less corrugated thick ring is greenish lemon-yellow in color, and the flesh is greenish, juicy, and sharply acid. The tree is said to be very resistant to the citrus canker.

For previous introduction see 50309.

**99322 to 99325.**

From Australia. Seeds purchased from F. H. Brunning Pty, Ltd., Melbourne. Received May 17, 1932.

A collection of forage grasses introduced for Department specialists.

**99322. DACTYLIS GLOMERATA L.** Poaceae. Orchard grass.

Cocksfoot, Akaroa strain, New Zealand Government certified.

**99323 to 99325. LOLIUM PERENNE L.** Poaceae. Perennial ryegrass.

**99323.** Poverty Bay Perennial, New Zealand Government certified "mother" seed.

**99324.** Poverty Bay Perennial, New Zealand Government certified "maiden" seed.

**99325.** Victorian or Western District Perennial, genuine old pasture seed.

**99326. TRIFOLIUM PRATENSE L.** Fabaceae. Red clover.

From the Union of Soviet Socialist Republics. Seeds presented by the Kungursk elevator, Ural Regional Seed Producers, All-Russian Seed Producers' Union, city of Kungur, Ural District. Received May 25, 1932.

Introduced for the use of Department specialists.

**99327 to 99333.**

From Australia. Seeds purchased from the Glen Innes Experiment Farm, Plant Breeding Branch, Department of Agriculture, Sydney, New South Wales. Received May 23, 1932.

Forage grasses introduced for the use of Department specialists.

**99327 to 99329. DACTYLIS GLOMERATA L.** Poaceae. Orchard grass.

**99327 to 99333—Continued.**

**99327. G 30-205.** Improved New Zealand cocksfoot.

**99328. G 32-8.** Improved cocksfoot.

**99329. G 32-3.** Commercial cocksfoot.

**99330 and 99331. LOLIUM PERENNE L.** Poaceae. Perennial ryegrass.

**99330. G 30-29.** Improved New Zealand perennial rye.

**99331. G 32-4.** Commercial perennial rye.

**99332. PHALARIS TUBEROSA L.** (*P. stenophylla* Hort.) Poaceae.

G 32-9.

**99333. TRIFOLIUM PRATENSE L.** Fabaceae. Red clover.

Commercial red clover.

**99334 to 99337.**

From Tobago, British West Indies. Seeds presented by E. J. H. Thomas, Charlotteville. Received May 26, 1932.

**99334. CASSIA sp.** Caesalpinaceae.

*Easter blossom.* A form with yellow flowers.

**99335. ERYTHRINA sp.** Fabaceae.

*Mountain immortelle.*

**99336. ICHTHYOMETHIA PISCIPULA (L.) Hitchc.** Fabaceae.

An attractive leguminous shade tree which becomes 50 feet high, with a spreading habit and large pinnate leaves. The large racemes of pale-pink flowers appear before the leaves and somewhat resemble those of the black locust. The wood is used for cart building.

For previous introduction see 97847.

**99337. PASPALUM CONJUGATUM Berg.** Poaceae. Grass.

A creeping perennial grass with the flowering stems sometimes 3 feet tall. This species, originally from Surinam, is found in most places in the Tropics of both hemispheres and forms extensive and close mats.

For previous introduction see 76432.

**99338. SORGHUM VIRGATUM (Hack.) Stapf.** Poaceae. Grass.

From Africa. Seeds presented by Prof. August Chevalier, Museum of Natural History, Paris, France. Received May 25, 1932.

Seeds collected in the heart of the Sahara by Professor Chevalier on his recent trip across the Sahara to Timbuktu; they may prove of interest in the semidesert regions of the southwestern United States.

**99339 to 99349.**

From the Union of Soviet Socialist Republics. Seeds presented by the director, Regional Oil Plant Station, Kruglik, northern Caucasus. Received May 5, 1932.

**99339. BRASSICA ALBA (L.) Boiss.** Brassicaceae. White mustard.

The seeds of this white mustard are less pungent than those of the black mustard (*Brassica nigra*), but are used in the same way. The young leaves of both are useful as a potherb and also as a salad.

For previous introduction see 60774.

**99340. CARTHAMUS TINCTORIUS L.** Asteraceae. Safflower.

Used for oil and dye.

For previous introduction see 84283.

## 99339 to 99349—Continued.

99341. *CYPERUS ESCULENTUS* L. Cyperaceae  
Chufa.

A sedge which produces small edible tubers that taste like very sweet almonds. The plant grows with the greatest facility, does not require moisture, and yields an abundant crop.

For previous introduction see 73845.

99342. *DRACOCEPHALUM* sp. Menthaceae.

99343. *GUIZOTIA ABYSSINICA* (L.f.) Cass. Astera-  
ceae.

An annual plant 6 to 8 feet high, with showy yellow flower heads. The black shining seeds furnish the Niger oil of commerce.

For previous introduction see 75328.

99344. *LALLEMANTIA IBERICA* (Bieb.) Fisch. and  
Mey. Menthaceae.

A blue-flowered herbaceous perennial, native to semiarid regions in Asia Minor and Syria, whose seeds yield an oil said to be a high-grade drying oil.

For previous introduction see 72839.

99345. *RAPHANUS SATIVUS* L. Brassicaceae.  
Radish.

Variety *oleiferus*.

99346. *RICINUS COMMUNIS* L. Euphorbiaceae.  
Castor-bean.

Variety *praecox*.

99347 to 99349. *SESAMUM ORIENTALE* L. Pedali-  
aceae. Sesame.

Locally grown varieties.

99350. *PISTACIA LENTISCUS* L. Ana-  
cardiaceae. Lentisk.

From Italy. Seeds presented by the R. Orto Botanico di Palermo. Received May 4, 1932.

A wild shrub common in the Mediterranean regions where it grows on poor soil and withstands severe drought. It produces a gum used by the Arabs as a perfume. An edible oil known as shinia, used as a substitute for olive oil, is obtained from the berries.

For previous introduction see 97303.

## 99351 to 99377.

From the Union of Soviet Socialist Republics. Seeds collected by V. Gorbunova in Asia Minor and presented by Dr. V. P. Alekseev, chief, Bureau of Introduction, Institute of Plant Introduction, Leningrad. Received May 4, 1932.

99351 to 99356. *PISTACIA* spp. Anacardiaceae.

99351. *PISTACIA MUTICA* Fisch. and Mey.  
Terebinth.

Seeds originally from Transcaucasia. A deciduous tree up to 35 feet high, with pinnate foliage. Native to the eastern Mediterranean region.

For previous introduction see 97304.

99352 to 99356. *PISTACIA VERA* L. Pistache.

99352. No. 1422. 99355. No. 1438.

99353. No. 1423. 99356. No. 1450.

99354. No. 1436.

99357 to 99377. *ELAEAGNUS ANGUSTIFOLIA* L.  
Elaeagnaceae. Russian-olive.

Introduced for the use of Department specialists.

99357. No. 126. From Zaravshan.

99358. No. 127. From Zaravshan.

## 99351 to 99377—Continued.

99359 to 99364. From the Chirchik River.

99359. No. 234. 99362. No. 264.

99360. No. 256. 99363. No. 267.

99361. No. 260. 99364. No. 268.

99365 to 99368. From the Syr-Daria River.

99365. No. 285. 99367. No. 329.

99366. No. 300. 99368. No. 332.

99369. No. 356. From the Bokhara district.

99370 to 99372. From Zaravshan.

99370. No. 393. 99372. No. 403.

99371. No. 399.

99373. No. 617. From Farab, Amu-Daria.

99374 and 99375. From the Amu-Daria River.

99374. No. 618. 99375. No. 620.

99376. No. 621. From Amu-Daria.

99377. No. 622. From the Amu-Daria River.

## 99378 and 99379.

From Madagascar. Seeds presented by M. Raymond Decary, Ambovombe. Received June 3, 1932.

99378. *EUPHORBIA INTISY* Drake. Euphorbi-  
aceae.

From Behara, Madagascar. An arborescent succulent, about 12 feet high, native to southern Madagascar in regions of limited rainfall, occasional frost, and varied soil conditions. At one time it was the most important rubber plant of Madagascar, but is now practically extinct commercially because of the lack of care used in harvesting the rubber. It has gray bark, dichotomous or somewhat whorled branches, and minute scattered leaves. The small and inconspicuous greenish flowers are in very short cymes near the tips of the branches.

For previous introduction see 78169.

99379. *EUPHORBIA* sp. Euphorbiaceae.

Received as *E. intisy*, but the seeds do not agree with the description for that species. Collected from trees in the administrator's garden at Ambovombe.

## 99380 to 99466.

From Italy. Seeds presented by S. W. McLeod Braggins, superintendent, Botanic Gardens, La Mortola, Ventimiglia. Received April 27, 1932.

99380. *ALCEBYRON TOMENTOSUM* (F. Muell.)  
Radlk. (*Nephetium tomentosum* F. Muell.).  
Sapindaceae.

An Australian tree, 20 to 30 feet high, with rusty-velvety young branches, oval to lanceolate leaves 2 to 4 inches long, small flowers crowded in woolly panicles, and rather hard, depressed indehiscent fruits.

For previous introduction see 44521.

99381. *AMPHICOME ARGUTA* Royle. Bignonia-  
ceae.

A low herbaceous perennial, not over 3 feet high, native to northern India. The compound leaves are made up of 5 to 9 deeply serrate lanceolate leaflets 2 inches long, and the rose-colored funnel-shaped flowers, 1 inch long, are borne in terminal racemes 6 to 8 inches long.

99382. *ANACAMPSEROS FILAMENTOSA* (Haw.)  
Sims. Portulacaceae.

A low succulent, native to southern Africa, with thick cobwebby ovate leaves one-fourth inch long and filamentous stipules longer than the leaves. The rather large rose-colored flowers are borne on 3- to 4-flowered scapes 2 to 3 inches long.



## 99380 to 99466—Continued.

99383. *ANISACANTHUS WRIGHTII* (Torr.) A. Gray. Acanthaceae.

A low shrub, 2 to 4 feet high, native to southern Texas and northern Mexico. The linear to lanceolate leaves are 1 to 2 inches long, and the tubular red flowers, 2 inches long, are borne in interrupted one-sided spikes.

99384 to 99386. *ARISTOLOCHIA* spp. Aristolochiaceae.

99384. *ARISTOLOCHIA ALTISSIMA* Desf.

A somewhat woody evergreen vine climbing 12 to 18 feet high, native to southern Europe and northern Africa. The coriaceous cordate leaves are 2 to 3 inches long, and the purple-brown pipe-shaped flowers are about 2 inches long.

99385. *ARISTOLOCHIA MOLLISSIMA* Hance.

An ornamental vine, with ovate-cordate, rounded, silky-hairy leaves 2 to 3 inches long and erect solitary flowers about 1 inch long. Native to southern China.

99386. *ARISTOLOCHIA SEMPERVIRENS* L.

A prostrate or somewhat climbing vine, native to the island of Crete. The slightly leathery triangular-cordate leaves are 1 to 2 inches long, and the yellowish purple-striped flowers are smaller than those of *A. altissima*.

99387 to 99391. *ASPARAGUS* spp. Convallariaceae.

99387. *ASPARAGUS ACUTIFOLIUS* L.

A hardy evergreen species, native to Spain, which makes a beautiful hedge plant, somewhat resembling juniper. As the plants grow older there is a tendency to produce vinelike shoots. The tuberlike storage roots and drought-resistant foliage make it valuable for regions of scanty rainfall.

For previous introduction see 92149.

99388. *ASPARAGUS APHYLLUS* L.

A bushy perennial asparagus with rough angled stems, cladodes in fascicles of 4 to 12, and black berries. Native to southern Europe.

99389. *ASPARAGUS COOPERI* Baker.  
Cooper asparagus.

A vining asparagus which climbs to a height of 10 to 12 feet, with a shrubby terete stem up to 2 inches in diameter at the base; the firm twining wirelike stem sends out many slender spreading threadlike ultimate branchlets from which the numerous minute needlelike cladodes spring in dense clusters. The very small flowers are not abundantly produced. Native to southern Africa.

For previous introduction see 38143.

99390. *ASPARAGUS CRISPUS* Lam.  
Drooping asparagus.

A tuberous-rooted asparagus, native to southern Africa, with green herbaceous sarmentose stems 3 to 6 feet long. The zigzag reflexed branches bear reflexed 3-angled cladodes less than one-half inch long, and the fragrant white flowers, borne on axillary drooping pedicels, are followed by white or pinkish berries one-half inch across.

99391. *ASPARAGUS STIPULARIS* Forsk. (*A. horridus* L. f.).

A shrubby perennial, with erect, often climbing, angled stems, scalelike leaves, thick, often solitary sharp-pointed cladodes, and black berries. Native to southern Europe.

99392. *BAUHINIA GRANDIFLORA* Juss. Caesalpiaceae.

A small tree up to 20 feet high, with subcordate leaves slightly lobed at the apex and tomentose beneath. The large pure-white flowers, opening

## 99380 to 99466—Continued.

at night, are in clusters of 1 to 3 on axillary peduncles, and the obovate petals are clawed. Native to Peru.

For previous introduction see 81143.

99393. *BAUHINIA YUNNANENSIS* Franch. Caesalpiaceae.

A vigorous woody climber from southwestern China; the rounded 2-parted leathery leaves are over an inch long. The flowers, rosy white striped with purple, are in many-flowered pendulous racemes.

For previous introduction see 67635.

99394 to 99397. *BESCHORNERIA* spp. Amaryllidaceae.

99394. *BESCHORNERIA DEKOSTERIANA* C. Koch

A succulent, native to Mexico, with a rosette of about 20 thick oblanceolate leaves 2 to 3 feet long and 3 inches wide at the middle, the base being broad and thick. The green funnel-form flowers, 1 to 2 inches long, are borne in a deltoid panicle.

99395. *BESCHORNERIA PUBESCENS* Berger.

An agavelike plant with a rosette of stiff glaucous leaves 2 feet long by 2 inches wide and finely denticulate on the margin. The flower stem, 4 to 5 feet high, is bright red and bears green or yellow pubescent tubular flowers in the axils of showy bracts. It is said to be native to Mexico.

99396. *BESCHORNERIA TUBIFLORA* Kunth.

A stemless plant with a rosette of about 12 linear leaves 1 foot long, roughened on both surfaces and minutely striate. The flower stalk, 4 feet high, bears an erect raceme of drooping brown-green tubular flowers. It is native to Mexico.

99397. *BESCHORNERIA YUCCOIDES* C. Koch.

A yuccalike plant with a rosette of about 20 lanceolate glaucous-green leaves 1 to 2 feet long and 2 inches broad and a flower stalk 3 to 4 feet high, bearing a panicle of dark-green yellow-tipped flowers 3 inches long on drooping red pedicels. It is native to Mexico.

99398. *BRACHYLAENA DENTATA* (Thunb.) DC. Asteraceae.

A bushy plant with cuneate or somewhat three-lobed coarsely dentate hairy leaves and terminal spikelike heads of yellow flowers. Native to southern Africa.

99399. *BULBINE FRUTESCENS* (L.) Willd. Liliaceae.

A succulent with simple or branched stems 1 foot high, native to southern Africa. The subterete bright-green leaves are 6 to 9 inches long, and the small bright-yellow flowers are borne in a close raceme 6 to 12 inches long and 1 inch in diameter.

99400. *BYTTNERIA URTICIFOLIA* Schum. Sterculiaceae.

A spiny climbing shrub with grooved branches, native to Brazil and Argentina. The long-petioled, coarsely serrate, appressed-hairy leaves are broadly heart-shaped, and the green-purple flowers, one half inch across, are in stalked clusters of 3 to 5.

99401. *CAESALPINIA SEPIARIA* Roxb. Caesalpiaceae.  
Mysore thorn.

For previous introduction and description see 99810.

99402. *CALLISTEMON SALIGNUS* (J. E. Smith) Sweet. Myrtaceae.

A tall shrub or small tree up to 40 feet high, native to Australia. The distinctly penninerved

## 99380 to 99466—Continued.

lanceolate leaves are 1 to 3 inches long, and the small flowers, in spikes 1 to 2 inches long, have bright-yellow stamens usually not more than one half inch long.

99403. *CALLISTEMON SALIGNUS* (J. E. Smith) Sweet. Myrtaceae.

Received as *C. paludosus*, which is a form with smaller leaves not over 2 inches long.

99404. *CARISSA GRANDIFLORA* (E. Mey.) DC. Apocynaceae.

A handsome shrub, native to southern Africa, which is now cultivated in southern Florida and California as an ornamental hedge plant and for its edible scarlet berries.

For previous introduction see 98222.

99405. *CASUARINA CUNNINGHAMIANA* Miquel. Casuarinaceae. Cunningham beefwood.

A slender-branched leafless Australian ornamental tree, the so-called beefwood, which has branchlets suggesting horsetails.

For previous introduction see 90679.

99406. *CHILIANTHUS ARBOREUS* (L. f.) Benth. Loganiaceae.

An erect evergreen shrub 6 to 10 feet high with four-angled or crisply winged branchlets and lanceolate leathery leaves 3 to 4 inches long, smooth above and gray-scurfy beneath. The small cream-white flowers are in small clusters formed into a large lax panicle 8 inches across. It is native to southern Africa.

99407. *CHLOROPHYTUM CAPENSE* (L.) Kuntze (*C. elatum* R. Br.). Liliaceae.

A perennial herb, native to southern Africa, with a rosette of 12 to 20 bright-green lanceolate leaves 1 to 2 feet long, often variegated with white or yellow bands in garden varieties. The large panicle of small white flowers is borne on a stalk 3 to 4 feet high.

99408. *COLLETTIA CRUCIATA* Gill. and Hook. Rhamnaceae. Anchorplant.

A shrub 3 to 4 feet high, native to southern Brazil and Uruguay. The elliptic flattened decurrent spiny branches have few entire elliptic leaves and bear the small white flowers in clusters in the axils of the spines.

99409. *CORDIA SERRATIFOLIA* H. B. K. Boraginaceae.

A tropical tree, native to Campeche, Mexico, with oblong acuminate coarsely serrate leaves nearly 3 inches long and very small white flowers in globular spikes.

99410. *COWANIA MEXICANA* D. Don. Rosaceae.

A shrub 3 to 6 feet high, with small crowded cuneate 3- to 7-cleft leaves less than one half inch long and cream-white flowers 1 inch across. It is native to Mexico.

For previous introduction see 88734.

99411. *CROTALARIA CANDICANS* Wight and Arn. Fabaceae.

A stiffly erect much-branched shrubby species with hairy and somewhat leathery broadly rounded leaves and panicles of small silky yellow flowers. It is native to southwestern India.

For previous introduction see 64066.

99412. *CROTALARIA POLYSPERMA* Kotschy. Fabaceae.

A subshrubby densely villous perennial herb 1 to 2 feet high, native to the Nile region in Africa. The trifoliate leaves have obovate-oblong leaflets 1 to 2 inches long, and the small blue flowers are in lax lateral racemes.

## 99380 to 99466—Continued.

99413. *DANAE RACEMOSA* (L.) Moench. Convallariaceae.

A much-branched evergreen Persian shrub 3 to 4 feet high, with alternate lanceolate leaflike cladodes 4 inches long, terminal racemes of small white flowers, and globose red berries.

For previous introduction see 78677.

99414. *DIMORPHOTHECA ECKLONIS* DC. Asteraceae. Cape-marigold.

A robust and erect subshrub 2 feet or more high, with crowded linear-lanceolate leaves and terminal flower heads having rays over 1 inch long, which are white above and purplish below. Native to southern Africa.

For previous introduction see 81153.

99415. *DOYVALIS CAFFRA* (Hook. and Harv.) Warb. (*Aberia caffra* Hook. and Harv.). Flacourtiaceae. Kei-apple.

A very prickly shrub or small tree, native to tropical Africa, where it is used as a hedge. The pale-green leaves are over 1 inch long and nearly 1 inch wide. The edible fruit resembles a small yellow apple and is so exceedingly acid when fresh that it is said to be used as a pickle without adding vinegar.

For previous introduction see 98223.

99416. *DYCKIA RARIFLORA* Schult. f. Bromeliaceae.

A stemless succulent resembling an agave, native to Brazil. The lanceolate stiff spiny-margined leaves, 6 inches long, are in a basal rosette, and the flower stalk, 1 to 2 feet high, bears a panicle of orange flowers about one-third inch long.

99417. *ELAEODENDRON CAPENSE* Eckl. and Zeyh. Celastraceae. False-olive.

An erect shrub native to southern Africa, with leathery ovate leaves 3 inches long and panicles of small white flowers followed by red drupes 1 inch long. The plant has stood 18° F. without injury.

For previous introduction see 88346.

99418. *ENCEPHALARTOS VILLOSUS* Lem. Cycadaceae.

A cycad with a short thick woolly and scaly trunk up to 6 feet high, native to southern Africa. The pinnately compound leaves are 6 feet long and are made up of numerous linear-lanceolate, spiny toothed, and sharp-pointed bright-green leaflets.

99419. *ENCYCLAENA TOMENTOSA* R. Br. Chenopodiaceae.

A procumbent or widely branched shrub up to 3 feet high, native to Australia. The branches are silvery woolly, the alternate linear leaves are about one-half inch long, and the small flowers develop into fleshy edible red or yellow berries about the size of small peas.

99420. *FELICIA ABYSSINICA* Schultz Bip. Asteraceae.

A low shrubby much-branched perennial 6 to 12 inches high, native to the Nile region in Africa. The closely alternate linear entire leaves are less than 1 inch long, and the blue or violet asterlike flowers, 1 inch across, are borne on solitary terminal peduncles 1 to 2 inches long.

99421. *GMLINA LEICHARDTI* F. Muell. Verbenaceae.

An excellent timber tree, native to Australia. The somewhat leathery ovate leaves, 3 to 6 inches long, are glabrous and rugose above and densely softly tomentose beneath. The small two-lipped flowers, white with purple markings, are borne in loose ovoid terminal panicles.

## 99380 to 99466—Continued.

## 99422. GREWIA FLAVA DC. Tiliaceae.

A rigid much-branched shrub, native to southern Africa. The oval crenulate leaves, 1 inch long, are glabrous above and canescent beneath. The small solitary yellow flowers are followed by two-lobed black edible fruits.

## 99423. GYNOPOGON BUXIFOLIUS (R. Br.) Schum. Apocynaceae.

A low spreading shrub, native to Australia. The thick rigid obovate to orbicular leaves, 1 inch long, are in pairs or in whorls of three, and the inconspicuous tubular flowers, in terminal clusters, are followed by ovoid orange fruits about one-half inch long.

## 99424. GYMNOSPORA BUXIFOLIA (L.) Szysz. Celastraceae.

A spiny shrub, several feet high, native to southern Africa. The obovate toothed leaves are 1 to 2 inches long, and the small white flowers, in axillary clusters, are followed by small fruits about the size of a pea.

## 99425. HAKEA CYCLOCARPA Lindl. Proteaceae.

A glabrous shrub, 5 to 6 feet high, native to Western Australia. The thick entire oblong-lanceolate leaves are 4 to 6 inches long, and the axillary clusters of small silky pubescent flowers are followed by woody compressed two-valved capsules 1 to 2 inches long, recurved at the base, then incurved, with a broad inflexed beak having a dorsal truncate protuberance at the top of each valve.

## 99426. HALLERIA LUCIDA L. Scrophulariaceae.

A shrub or small tree up to 30 feet high, native to tropical and southern Africa. The broadly ovate leathery leaves, 2 to 4 inches long, have serrulate margins, and the curved tubular brown-red to orange-purple flowers, 1 inch long, are followed by dark-purple ovoid berries nearly 1 inch in diameter.

## 99427. HESPERALOE PARVIFLORA (Torr.) Coult. Liliaceae.

A stemless yuccalike plant, native to Texas and Mexico. The lanceolate concave leaves, 3 to 4 feet long by 1 inch wide, have coarse marginal threads, and the glaucous flower stalk, 3 to 4 feet high, bears a panicle of nodding rosy oblong flowers 1 to 2 inches long.

99428. HIBISCUS MUTABILIS L. Malvaceae.  
Cotton rosemallow.

A double-flowered variety of a tall East Indian shrub, with large broad cordate leaves and large white flowers, which later change to red. It blooms in summer and late autumn and is widely planted in the Bermuda Islands in gardens and hedges.

For previous introduction see 90918.

99429. INDIGOFERA MACROSTACHYA Vent. Fabaceae.  
Indigo.

A shrubby plant with hairy leaflets and pink flowers in dense racemes which are longer than the leaves.

For previous introduction see 62185.

## 99430 to 99432. KALANCHOE spp. Crassulaceae.

## 99430. KALANCHOE AEGYPTIACA DC.

A branched fleshy plant with pale-green ovate-spatulate leaves, the oldest rounded, and small orange flowers in a rather large terminal panicle. Native to Mount Melán, Egypt.

## 99431. KALANCHOE THYRSIFLORA Harv.

A suffrutescent succulent 2 to 4 feet high, native to southern Africa. The oblong-spatulate pale-green leaves are 4 to 6 inches long, and

## 99380 to 99466—Continued.

the coral-orange flowers are borne in a compact oblong panicle or thyrsus.

## 99432. KALANCHOE WELWITSCHII Britten.

An erect succulent plant, native to tropical Africa, with cylindrical stems 3 to 5 feet high and 1 inch in diameter at the base. The large ovate-lanceolate basal leaves are 8 to 10 inches long and crenate-dentate, with purple-margined teeth; the upper leaves are linear-lanceolate and nearly entire. The bright sulphur-yellow flowers, nearly 1 inch long, are borne in diffuse panicles.

For previous introduction see 86328.

## 99433. LAVANDULA ABBOTANOIDES Lam. Menthaeae.

A perennial herb about 2 feet high, native to the Canary Islands. It has green bipinnate leaves and a branched spike of bluish flowers.

For previous introduction see 81173.

## 99434. MAGYDARIS TOMENTOSA (Desf.) Koch. Apiaceae.

A perennial herb with pinnatisect hairy leaves and small white flowers in many-flowered umbels. Native to Sicily.

## 99435 to 99441. MELALEUCA spp. Myrtaceae.

## 99435. MELALEUCA CUTICULARIS Labill.

A tall shrub or small tree with twisted branches and bark in paperlike layers. The thick flat linear oblong leaves are one half inch long, and the small flowers are grouped in a scaly head. Native to Australia.

For previous introduction see 81175.

## 99436. MELALEUCA DIOSMAEFOLIA Andrews.

A tall rigid shrub, native to Western Australia. The spreading ovate-lanceolate leaves are less than one half inch long, and the rather large yellow-green flowers are in dense cylindrical spikes below the ends of the branchlets.

## 99437. MELALEUCA LINARIFOLIA J. E. Smith.

A tall shrub or small tree, native to Australia. The rigid broadly linear leaves are 1 to 2 inches long, and the small white flowers are in pairs in spikes 1 to 2 inches long.

99438. MELALEUCA NESOPHILA F. Muell.  
Pink melaleuca.

A tall shrub or tree with thick spongy bark, native to Western Australia. The thick ovate to oblong leaves are 1 inch long and obscurely 1- to 3-nerved, and the pink or rose-colored flowers are in heads 1 to 2 inches in diameter.

## 99439. MELALEUCA PUBESCENS Schauer.

A tall shrub or small tree native to Australia, with small linear leaves one half inch long crowded on the pubescent branches and small white flowers borne in loose cylindrical spikes.

For previous introduction see 90716.

## 99440. MELALEUCA PULCHELLA R. Br.

A spreading shrub 2 to 3 feet high, native to Western Australia. The scattered oblong-ovate spreading or recurved leaves are less than one-fourth inch long, and the rather large purple flowers are solitary or in scattered clusters of 2 or 3 near the ends of the branches.

99441. MELALEUCA WILSONI F. Muell.  
Wilson melaleuca.

A tall shrub, native to Australia, with thick linear imbricated leaves one-fourth to one-half inch long and small red flowers scattered in loose spikes.

## 99380 to 99466—Continued.

99442. *MYOPORUM CRYSTALLINUM* Kunze. Myoporaceae.

An evergreen shrub, native to Australia, with leathery green leaves, pellucid-punctate beneath. Closely related to *M. obscura*.

99443. *NOLTEA AFRICANA* (L.) Reichenb. Rhamnaceae.

An upright evergreen shrub 10 to 12 feet high, native to southern Africa. The oblong-lanceolate serrate leaves, 1 to 2 inches long, are pale green beneath, and the small white flowers are in terminal clusters. The whole plant is said to be saponaceous, and the macerated foliage is used by the natives in washing.

99444. *NOTELAEA EXCELSA* Webb. and Berth. Oleaceae.

An evergreen shrub up to 15 feet high, native to the Canary Islands. The small white flowers in axillary racemes, appear in May and are followed by globular fruits.

99445. *OLEA CHRYSOPHYLLA* Lam. Oleaceae.

A small evergreen tree, closely related to the cultivated olive. Its chief ornamental value lies in the golden color of the under surfaces of the leaves. Native to eastern Africa.

For previous introduction see 81185.

99446. *OLEA VERRUCOSA* (Roem. and Schult.) Link. Oleaceae.

A tree, native to southern Africa, with linear leaves 3 inches long, covered with small yellow scales beneath. The axillary panicles, 2 inches long, of small flowers are followed by dark globose scarcely fleshy fruits one-fourth inch in diameter.

99447. *OLEARIA ARGOPHYLLA* (Labill.) F. Muell. Asteraceae.

A tree 20 to 25 feet high, emitting a strong musky odor. The alternate, ovate to lanceolate, entire or denticulate leaves, 3 to 5 inches long, are reticulate above and clothed with silvery-silky hairs beneath. The small blue-white, asterlike flower heads are in large terminal corymbs. It is native to Australia.

For previous introduction see 86265.

99448. *PANDOREA RICASOLIANA* (Tanf.) Baill. Bigoniaceae. Ricasol pandorea.

An evergreen climbing shrub with pinnate leaves of 7 to 11 ovate-serrate leaflets 1 inch long, dark green above, pale beneath, and loose terminal panicles of large campanulate flowers 2 inches long, light pink striped with red. Native to southern Africa.

For previous introduction see 98092.

99449. *PHOENIX CANARIENSIS* Chabaud. Phoenicaceae. Canary date palm.

A palm, native to the Canary Islands, closely resembling the common date palm (*Phoenix dactylifera*), but more slender and graceful in all its parts, and the leaves are more numerous.

Variety *macrocarpa*; a form with large fruits.

For previous introduction see 93324.

99450 to 99454. *PITTIOSPORUM* spp. Pittosporaceae.

99450. *PITTIOSPORUM COLENSOI* Hook. f.

A tree, up to 50 feet high, native to New Zealand, with lanceolate to obovate leathery leaves 2 to 4 inches long. The solitary axillary dark-purple flowers, one-half inch long, are followed by thick woody globose capsules.

99451. *PITTIOSPORUM HETEROPHYLLUM* Franch. Rock pittosporum.

A spreading shrub, 3 to 6 feet high, native to Szechwan and Yunnan, China, where it grows

## 99380 to 99466—Continued.

on cliffs and in rocky places in the arid valleys. The ovate leaves are medium sized, and the light-yellow flowers are borne near the tips of the new branchlets.

99452. *PITTIOSPORUM PROCERUM* Hort.

A name for which a place of publication and a description have not been found.

99453. *PITTIOSPORUM UNULATUM* Vent. Orange pittosporum.

An Australian evergreen shrub or tree up to 40 feet high, often used as a hedge. The lanceolate leaves, 3 to 6 inches long, are undulate on the margin, and the white flowers, whose fragrance resembles that of orange blossoms, are in terminal clusters.

For previous introduction see 76042.

99454. *PITTIOSPORUM VIRIDIFLORUM* Sims. Cape pittosporum.

An erect shrub up to 25 feet high, native to southern Africa. It resembles the well known *P. tobira*, differing in having smaller green-yellow flowers in dense compound clusters.

99455. *PLEIOPHYLLUM SOLANDRI* (Benth.) Engl. Anacardiaceae.

A tree up to 60 feet high and often 3 feet in diameter, native to Queensland, Australia. The pinnate compound leaves are made up of 7 to 9 obovate leaflets 2 to 3 inches long, and the small inconspicuous flowers, in axillary racemes, are followed by broadly top-shaped purple drupes 1 to 2 inches across.

99456. *PODACHAENIUM EMINENS* (Lag.) Schultz Bip. Asteraceae.

A tall slightly branched shrub 9 to 15 feet high, native to Mexico and Guatemala. The broadly ovate 5- to 7-lobed leaves are roughened above and gray tomentose beneath, and the daisylike white flowers, 1 inch across, are in flat-topped clusters of about 20 or more.

99457. *PODANTHUS MITQUI* Lindl. Asteraceae.

An evergreen shrub 3 feet high, with yellow flowers appearing in autumn. Native to Chile.

99458. *PYCNOSTACHYS URTICIFOLIA* Hook. Menthaceae.

A much-branched herbaceous perennial 5 to 7 feet high, native to tropical and southern Africa. The densely pubescent ovate leaves, 3 to 4 inches long, are deeply cut into rounded lobes, and the small bright-blue flowers are in dense spikes 2 to 3 inches long.

99459. *RHODOSPHAERA RHODANTHEMA* (F. Muell.) Engler. Anacardiaceae.

An evergreen tree up to 70 feet high, native to Australia and closely resembling sumach. The pinnately compound leaves are made up of 7 to 9 lustrous dark-green ovate leaflets 2 to 3 inches long and the small crimson or pink flowers, borne in axillary and terminal panicles, are followed by globular red-brown fruits one-half inch in diameter.

99460. *SALVIA GARDNERIANA* Hort. Menthaceae. Sage.

A name for which a place of publication and a description have not been found.

99461. *SOLLYA HETEROPHYLLA* Lindl. Pittosporaceae. Australian bluebell-creeper.

An evergreen climbing shrub 2 to 6 feet high, native to Australia. The leaves, 1 to 2 inches long, vary from lanceolate to ovate, and the bright-blue flowers, one half inch long, are borne in 8- to 12-flowered cymes.

99462. *SOPHORA DAVIDI* (Franch.) Komarow. Fabaceae.

A spiny shrub up to 6 feet high, with slender spreading pubescent branchlets, native to central

99380 to 99466—Continued.

and western China. The pinnately compound leaves, 1 to 2 inches long, have 11 to 15 small elliptic leaflets, and the violet to white pea-shaped flowers, one half inch long, are in racemes of 6 to 12 on short terminal branchlets.

99463. *SUTHERLANDIA FRUTESCENS* (L.) R. Br. Fabaceae.

A leguminous shrub about 3 feet high, with finely pinnate leaves and showy scarlet flowers produced in short axillary racemes. Native to the Mediterranean countries.

For previous introduction see 91239.

99464. *TEMPLETONIA RETUSA* (Vent.) R. Br. Fabaceae. **Melbourne coralbeach.**

A tall shrub with angular sulcate glaucous branchlets, native to Australia. The simple leathery broadly ovate leaves are 1 inch long, and the axillary red or white flowers, 1 inch long, are solitary or in clusters of 2 or 3.

99465. *TRISTANIA LAURINA* (J. E. Smith) R. Br. Myrtaceae.

A tall evergreen tree with glaucous or silky pubescent branchlets, native to Australia. The lanceolate or obovate leaves are 2 to 4 inches long, and the small yellow flowers are in short axillary cymes.

For previous introduction see 76948.

99466. *WASHINGTONIA FILAMENTOSA* (Wendl.) Kuntze. Phoenicaceae. **California Washington palm.**

Variety *microperma*; a form with small fruits.

99467 to 99489.

From Australia. Seeds presented by R. Crowe, director, Department of Agriculture, Melbourne, Victoria. Received June 3, 1932.

A collection of seeds introduced for the use of Department forage-crop specialists.

99467. *DACTYLIS GLOMERATA* L. Poaceae. **Orchard grass.**

Victorian seed.

99468 to 99472. *LOLIUM LOLIACEUM* (Bory and Chaub.) Hand.-Mazz. (*L. subulatum* Vis.). Poaceae. **Wimmera ryegrass.**

An annual bunch grass with much-branched slender prostrate or ascending stems 2 to 8 inches long. Native to dry sandy places along the coast of southeastern Europe.

For previous introduction see 88519.

99468. An early variety (mixed sample).

99469. A late variety (mixed sample).

99470. A midseason variety (mixed sample).

99471. *Rutherglen New Strain*.

99472. Commercial seed.

99473 to 99489. *TRIFOLIUM* spp. Fabaceae.

99473 and 99474. *TRIFOLIUM REPENS* L. **White clover.**

99473. *Goulburn Valley Wild white.*

99474. Victorian seed; a mixed sample.

99475 to 99489. *TRIFOLIUM SUBTERRANEUM* L. **Subterranean clover.**

An Australian clover which appears to have value as a forage crop in the southern United States.

For previous introduction see 93258.

99467 to 99489—Continued.

99475. *Bacchus Marsh.*

99482. *Myall.*

99483. *Nangeela.*

99476. *Daliak.*

99484. *Springhurst.*

99477. *Dwalganup.*

99485. *Tallarook.*

99478. *Goroke.*

99486. *Wangaratta.*

99479. *Hill's small strain.*

99487. (*Wangaratta Selin*) "*Nerang*."

99480. *Kybybolite.*

99488. *Wenigup.*

99481. *Macarthur.*

99489. *White seeded.*

99490 to 99499. *PHASEOLUS LUNATUS* L. Fabaceae. **Lima bean.**

From Puerto Rico. Seeds presented by T. B. McClelland, director, Agricultural Experiment Station, Mayaguez. Received June 1, 1932.

A collection of lima beans introduced for comparison with the types now grown on the Pacific coast.

99490 to 99493. Collected by the agricultural agent at Vega Baja, Puerto Rico.

99490. A small red bean slightly mottled with brown.

99491. A mixed sample of brown beans.

99492. A medium-sized red bean mottled with brown.

99493. A small dark tan bean slightly mottled with brown.

99494 to 99499. Collected by the agricultural agent at Villalba, Puerto Rico.

99494. A medium-sized white bean raised in Puerto Rico from imported seed.

Nos. 99495 to 99499 are native beans.

99495. A white bean slightly larger than a navy bean.

99496. *Blancas de Tocan*; a white bean the size and shape of the navy bean.

99497. *Veladas*; a gray bean mottled with red.

99498. *Colorados*; a red bean faintly mottled with brown.

99499. *Rechecas*; a small round red bean with white hilum.

99500 to 99575.

From the West Indies, British Guiana, and Surinam. Plants collected by David Fairchild and P. H. Dorsett, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

99500. *ADIANTUM TENEBRUM FARLEYENSE* Bonap. **Barbados maidenhair.**

No. 2867. From the Botanic Garden, Trinidad, February 16, 1932. A fern with black-stemmed fronds up to 2 feet high; native to the West Indies. The closely overlapping pinnae bear light-green wedge-shaped leaflets with the outer margin deeply cut into 10 to 15 narrow lobes.

99501. *ADIANTUM TRAPEZIFORME* L. **Polypodiacae. Diamond maidenhair.**

No. 2672. A tropical American fern with bipinnate leaves 18 inches or more long. The trapezoidal leaflets, 1 to 2 inches long, are lobed and have numerous spore cases.

99502. *ALLOPLECTUS CRISTATUS* (L.) Mart. **Gesneriaceae.**

## 99500 to 99575—Continued.

No. 3752. From the island of Martinique, March 10, 1932.

For introduction of seeds and description see 99023.

99503. *ALPINIA EXALTATA* (L. f.) Roem. and Schult. Zinziberaceae.

No. 3665. *Massala* or *masura*. Purchased in the market at Paramaribo, Surinam, March 2, 1932. The purple-brown fruits of this plant are used to flavor curry sauce and to give it its yellow color. The flavor is superior to that of turmeric.

For previous introduction see 97924.

99504. *AMHERSTIA NOBILIS* Wall. Caesalpiniaceae.

No. 2870. From the Trinidad Botanic Garden, February 16, 1932. This is considered by many to be the most beautiful of all flowering trees and one of the most difficult to propagate. The tree is native to the Malay Peninsula and was named for Lady Amherst. It requires a high moist temperature and rich loam soil.

99505 to 99510. *ANANAS SATIVUS* Schult. f. Bromeliaceae.

99506. No. 3755. *Black Antigua*. From the St. Lucia Experiment Garden, March 8, 1932. A very sweet, tender-fleshed variety, excellent for home use but not for shipping.

99508. No. 3756. *Sugarloaf*. From the St. Lucia Experiment Garden, March 8, 1932. A good-shaped, desirable form of excellent quality.

99507. No. 3840. *Tortola*. From the Tortola Experiment Station, March 19, 1932. This pineapple of the Red Spanish type was selected as the most vigorous on the island. The fruit is about 8 inches long by 4 or 5 inches wide and is comparable to the Red Spanish in flavor.

99508. No. 3680. From Surinam, April 4, 1932. Collected in dense undergrowth near the Kadjoe Rapids. A wild pineapple introduced for breeding purposes.

99509. No. 3673. From the experiment garden at Paramaribo, Surinam, March 2, 1932.

99510. [Received without notes.]

99511 to 99513. *ANTHURIUM* spp. Araceae.

99511. *ANTHURIUM GRANDIFOLIUM* Kunth.

No. 3786. From Basse Terre, Guadeloupe, French West Indies, March 13, 1932. A very handsome enormous-leaved aroid growing as an epiphyte on the trunks of trees at the edge of the rain forest. A stemless plant with long-stemmed, elongate-cordate, acute, leathery, shining-green leaves over 2 feet long, including the petiole. The brown-green tipped spadix is nearly a foot long. Native to Venezuela.

99512. *ANTHURIUM SELLOUM* C. Koch.

No. 2751. From St. Eustatius, Netherland West Indies, January 21, 1932. A magnificent dull-green-leaved species found in forest undergrowth at 1,700 feet altitude. Its enormous leaves make it an exceptional ornamental. It is short-stemmed with somewhat leathery oblong-cordate leaves, stems 1 to 2 feet long, and leaf blades up to 3 feet long. The spadix is about a foot long, and the pale-green linear-lanceolate spathe is about 5 inches long. Native to the West Indies.

99513. *ANTHURIUM* sp.

No. 3883. From the Grenada Botanic Garden, February 9, 1932. An aroid with large leaves.

## 99500 to 99575—Continued.

99514. *ARALIA* sp. Araliaceae.

No. 3730. From the Jardin d'Essais, Tivoli, Martinique, March 10, 1932. A very handsome plant with dark-green glossy orbicular leaves 6 inches long by 4 inches wide which are not variegated and have coarsely serrated margins.

99515. *ARENCA ENGLERI* Beccari. Phoenicaceae. Palm.

A cluster palm with no trunk, which suckers from the ground and forms clumps 10 feet across. The pinnae are 16 inches long, over 1 inch wide, and fishtail shaped. The red fruits are less than 1 inch in diameter.

For previous introduction see 97740.

99516 to 99518. *ARTOCARPUS COMMUNIS* Forst. Moraceae. Breadfruit.

99516. No. 2576. From Nassau, New Providence Island, January 9, 1932. A seedless grapefruit from the garden of Mrs. Edward George.

99517. No. 2820. From Grenada, Windward Islands.

99518. No. 3760. From Grande Terre, Guadeloupe, March 11, 1932.

99519. *ARTOCARPUS* sp. Moraceae.

No. 3865. From the experiment station at Harrigan, Tortola, British Virgin Islands, March 19, 1932. A tree with beautiful broad dark-green leaves and light-pink seedless fruits from 1 to 2 inches long and 1 inch in diameter.

99520. *BACTRIS PAVONIANA* Mart. Phoenicaceae. Palm.

No. 2048. From Blubber Valley, Antigua, Leeward Islands, January 26, 1932. A beautiful palm, 50 feet tall, with feathery leaves, more striking than those of the Royal palm. The trunks of old trees are smooth, but those of young trees are covered with bands of black spines which later fall off. The leaves are also armed with black spines. The fruit is as large as a walnut. This is apparently an almost extinct species; Blubber Valley is the only place where it is found.

For previous introduction see 97280.

99521. *BAUHINIA MEGALANDRA* Griseb. Caesalpiniaceae.

No. 3884. From the Botanic Garden, Port-of-Spain, Trinidad, February 15, 1932. A tree, native to the West Indies, with deeply obovate leaves 5 inches long and small white flowers, either solitary or in racemose clusters, at the tips of the branchlets.

99522. *BEGONIA* sp. Begoniaceae.

No. 3890. From Haiti, March 27, 1932. A pretty dwarf species found on the perpendicular walls of the citadel at 3,000 feet altitude. The rosettes of round leaves were pressed against the lichen-covered walls and made a very attractive show.

99523. *BEGONIA* sp. Begoniaceae.

From Dominica, Leeward Islands.

99524. *BENTINCKIA NICOBARICA* (Kurz) Beccari. Phoenicaceae. Palm.

No. 2842. From Port-of-Spain, Trinidad, February 15, 1932. A handsome feather palm, forming a single tall stem 70 feet high and 9 inches in diameter at the base. When young it reminds one of a *Acutia*, but it is a far statelier palm when full grown.

For previous introduction see 97281.

99525 to 99527. *BOUGAINVILLEA* spp. Nyctaginaceae.

## 99500 to 99575—Continued.

99525. *BOUGAINVILLEA SPECTABILIS* Willd.  
Great bougainvillea.

No. 2989. Mrs. Butt. From the Dominican Botanic Garden, January 29, 1932. One of the best seedlings grown in Dominica. The flowers are a delicate shade of brick red.

99526. *BOUGAINVILLEA* sp.

No. 2864. March 23, 1932. A new orange sport, presented by R. O. Williams, director, Trinidad Botanic Garden.

99527. *BOUGAINVILLEA* sp.

March 23, 1932. A pink bougainvillea presented by R. O. Williams, director, Trinidad Botanic Garden.

99528 and 99529. *CACTUS INTORTUS* Mill. Cactaceae.

The *turkscap*, or *turkshead*, is one of the very showy and interesting forms of cactus which bears on top of its ovoid, ribbed basal portion a densely woolly head which grows 12 or more inches high and is covered with brown bristles. This head reminds one of a Turkish fez, although it is not red. The fruits are deep pink, the size of one's little finger tip, and are borne on the top of the head.

For previous introduction see 97564.

99528. No. 3789. From Saba, Netherland West Indies, March 15, 1932.

99529. No. 3846. From Anguilla, Leeward Islands, March 16, 1932.

99530. *CACTUS MELOCACTUS* L. Cactaceae.  
Common turkscap.

A globular cactus, up to 15 inches in diameter, native to the West Indies. There are 10 to 20 ribs with clusters of radical spines, and the small red flowers and fruits are borne on a prolongation of the axis which is covered with small tubercles embedded in wool.

99531. *CALATHEA* sp. Marantaceae.

No. 2882. From the Aripo Savanna, Trinidad, February 14, 1932. An attractive vigorous-looking species with attractive foliage, the under side of which looks like changeable silk.

99532 and 99533. *CARLUDOVICA SCANDENS* Cowell. Cyclanthaceae.

A liana with palmlike leaves, related to the panama-hat palm, which attaches itself to precipitous cliffs and tall trees by means of aerial roots. Its large dark-green leaves resemble strikingly the first leaves of many palms, being parallel veined and only once divided.

99532. No. 2643. From Mount Misery, St. Kitts, Leeward Islands, January 24, 1932, at 1,700 feet altitude.

99533. No. 2776. From Roseau Valley, Dominica, Leeward Islands, January 30, 1932.

99534. *CARYOPHYLLUS MALACCENSIS* (L.) Stokes (*Eugenia malaccensis* L.). Myrtaceae. *Ohia*.

No. 2890. *Malac* or *Pomerac*. Plants and seeds from the market at Port-of-Spain, Trinidad, February 17, 1932. A tree with handsome large glossy leaves and large masses of flowers 1 inch or more across, filled with hundreds of beautiful deep rose-pink or crimson stamens. The crimson pear-shaped fruits, of characteristic flavor, are much esteemed here for preserves.

For previous introduction see 89027.

99535. *PITYROGRAMMA CALOMELANOS* (L.) Link (*Gymnogramma calomelanos* Kaulf.). Polypodiaceae. *Silver fern*.

No. 2866. From the Botanic Garden, Trinidad, February 16, 1932. A black-stalked fern with

## 99500 to 99575—Continued.

leaves 1 to 3 feet long, native to the West Indies and Brazil. The ultimate leaflets are lanceolate, with a large lobelike auricle at the base, and the under side of the leaf is covered with a fine white powder.

99536. *CISSUS SICYOIDES* L. Vitaceae.

No. 3847. From Saba, Netherland West Indies, March 16, 1932. A quite glabrous form with dull-green fleshy foliage and cymes of reddish flowers, found near the beach where the spray could reach it.

99537. *CLUSIA ROSEA* Jacq. Clusiaceae.

No. 2892. From Trinidad.

For previous introduction and description see 98826.

99538. *CLUSIA* sp. Clusiaceae.

No. 3729. From Martinique, March 10, 1932. *Mountain mangrove* or *parrot apple*. A tree with large handsome dull-green leaves and large rather showy white flowers. The fruits remind one of a garcinia, a distant relative. Like the strangler fig tree, the clusias become epiphytic and strangle their hosts.

99539. *COCCOLOBA LATIFOLIA* Lam. Polygonaceae.

No. 3669. From Paramaribo, Surinam, March 3, 1932. A tree with dark-green leaves from 1 to 2 feet in diameter, found on poor lands of the coastal plain of Surinam. While not a striking tree in some respects, the large size of the leaves makes it attractive for dooryard and park purposes.

99540. *COCCOLOBA GRANDIFOLIA* Jacq. Polygonaceae.

No. 2656. From Antigua, Leeward Islands. A giant-leaved species which, when grown in the shade, has leaves 3 feet in diameter. It is a rare species related to the seagrape.

99541. *COCCOTERINAX BARBADENSIS* (Lodd.) Baccari. Phoenicaceae. *Palm*.

No. 3740. From Guadeloupe, French West Indies. A tall slender fan palm with the aspect of the *Silver* palm, but much larger. The clusters of greenish fruits which later become black are not particularly attractive. The palm seems adapted to a strongly calcareous soil.

For previous introduction see 98501.

Nos. 99542 to 99552 were presented by M. Desiré Kervegant, in charge of the Jardin d'Essais, Fort de France, Martinique, French West Indies, March 10, 1932.

99542 to 99544. *XANTHOSOMA* spp. Araceae.

99542. *XANTHOSOMA* sp.

No. 3738. Variety *Nouvelle Caladonie*; recently brought to the island from the colony of New Caledonia in the Pacific. Petiole glaucous at first; margins of petioles and wings are pink.

99543. *XANTHOSOMA* sp.

Variety *Pierre*; one of the principal foods of the island. The petiole is pinkish maroon except near the top.

99544. *XANTHOSOMA* sp.

No. 3741. The leaf blade of this *yautia* stands horizontal with apex and basal lobes turned up. The petiole is green, with a narrow or wide pinkish line on margin of sinus wing, sometimes with small pinkish blotches on upper part of wing and often with long whitish streaks on the wings.

99545 and 99546. *COLOCASIA ESCULENTA* (L.) Schott. Araceae. *Dasheen*.

## 99500 to 99575—Continued.

99545. No. 3742. *Soupe*. The petiole of the leaf is moderately shaded with maroon, and there is a maroon petiolar spot on the blade.

99546. No. 3744. *Blanc*; a white variety which is one of the finest in cultivation at Tivoli, where the collection of economic plants is grown. There is a dull maroon petiolar spot on the leaf blade, and this color extends along the basal veins and the suture. The petiole is slightly shaded with maroon.

99547 to 99550. *XANTHOSOMA* spp. Araceae.

99547. *XANTHOSOMA* sp.

No. 3745. *Cama*. The petiole is green, often with irregular purple-maroon streaks or blotches on sinus wings and with a maroon line on the margin of each wing.

99548. *XANTHOSOMA* sp.

No. 3747. *Bouton*. Petioles glaucous maroon on lower half.

99549. *XANTHOSOMA BRASILIENSE* (Desf.) Engler.

No. 3748. *Calabou*. The leaves of this plant when properly cooked make one of the most delicately flavored green vegetables known; they are somewhat acid in the raw state.

99550. *XANTHOSOMA* sp.

No. 3749. *Chou Dauc*. The basal lobes of the leaf blade are pointed, and the basal veins are naked at the base. The petiole is green with a glaucous bloom, and there is a pinkish line on the sinus wing.

99551. *COLOCASIA ESCULENTA* (L.) Schott. Araceae. Dasheen.

No. 3750. *Baton nois*. A variety with a dark-maroon leaf petiole, which is lighter near the top, and a green blade, slightly mottled with light green.

99552. *XANTHOSOMA* sp. Araceae.

No. 3751. *Boucard blanc*. A variety with the basal lobes of the leaf blades rounded and the petioles green, with a pinkish line on the margin of the recurved sinus wings.

99553. *COLOCASIA* sp. Araceae.

No. 3784. *Madere Blanche*. From Pointe-à-Pitre, Guadeloupe, French West Indies, purchased in the market, March 12, 1932. A variety with both leaf blades and petiole plain green.

99554. *DIEFFENBACHIA* sp. Araceae.

No. 3785. *Madere Noir*. Purchased in the market at Pointe-à-Pitre, Guadeloupe, March 12, 1932.

99555. *COLOCASIA ESCULENTA* (L.) Schott. Araceae. Dasheen.

The leaf blade of this variety has a maroon petiole spot, and the petiole is plain green.

99556. *CORYPHA UTAN* Lam. Phoenicaceae. Palm.

No. 2883. From the Botanic Garden, Dominica, Leeward Islands, January 29, 1932. A palm with fan-shaped leaves with spiny petioles and an erect paniculate spadix. Native to the East Indies.

99557. *CROTON ELUTERIA* (L.) Swartz. Euphorbiaceae.

No. 3372. From Cat Island, Bahamas, January 5, 1932. A wild tree from which the natives collect the bark and sell it for medicinal purposes.

For previous introduction see 69065.

## 99500 to 99575—Continued.

99558. *CYDISTA* sp. Bignoniaceae.

No. 2817. From the Grenada Botanic Garden, February 10, 1932. A vine with beautiful deep-pink flowers which grows to the top of large forest trees.

99559. *CYNOMETRA TRINITENSIS* Oliver. Caesalpiniaceae.

No. 2869. Presented by R. O. Williams, of the Botanic Garden, Trinidad, February 16, 1932. A large native leguminous tree with leathery leaflets 4 inches long by over 1 inch wide, in pairs. The young pendent growths are pure white and give the tree a most striking appearance. The small white flowers, produced abundantly, make this an ornamental dooryard tree.

99560. *CYRTOSTACHYS RENDA* Blume. Phoenicaceae. Palm.

No. 2843. From Port-of-Spain, Trinidad, February 15, 1932.

For previous introduction and description see 98551.

99561 and 99562. *DIOSCOREA* spp. Dioscoreaceae. From Martinique, March 10, 1932.

99561. *DIOSCOREA ALATA* L. Winged yam.

No. 3757. *Caplaou*; a yam characterized by its large size and flat wedge shape. It ripens its tubers during the winter months, but is not prized so highly as the *Portugaise*.

99562. *DIOSCOREA ROTUNDATA* Poir. White Guinea yam.

No. 3759. *Portugaise*; a white-fleshed yam, usually of good size and excellent quality; the lower part of the vine is glaucous and vigorous vines usually grow thorns. This is the most highly prized of the yams of Martinique, and was probably introduced into the island from Portugal in the sixteenth century.

99563. *DIOSPYROS* sp. Diospyraceae. Persimmon.

No. 2968. From the Botanic Garden, Georgetown, British Guiana, February 25, 1932. Seeds of a dense-growing evergreen tree 25 to 30 feet high, with glossy-green leaves 6 inches long by 2 inches wide. The small fruits have an unpleasant odor.

99564. *DIOSCOREA* sp. Dioscoreaceae. Yam.

No. 3753. *San Martin*; from Martinique, March 10, 1932. A large white-fleshed yam with a long neck; the quality is rather poor, but, because it ripens its tubers in the winter, it is much grown on the island.

99565. *EUGENIA* sp. Myrtaceae.

No. 2691. *Guava berry tree*; from the Dominica Botanic Garden, January 29, 1932. An erect-growing tree with smooth bark and glossy, fine-leaved foliage. The black berries are used in making liqueurs. It is native to the Virgin Islands.

99566 to 99568. *EUTERPE* spp. Phoenicaceae. Palm.

99566 and 99567. *EUTERPE OLERACEA* Mart.

*Manac* or *Manaque*. For previous introduction and description see 98493.

99566. No. 2883. From the Avena Forest Reserve, Trinidad, February 16, 1932.

99567. No. 3371. From the island of St. Kitts, January 24, 1923, at 700 feet altitude on Mount Misery, in what remains of the original wild forest of the island.



## 99560 to 99575—Continued.

99568. *EUTERPE* sp.

No. 2711. From St. Lucia, Windward Islands. A slender undergrowth palm, 30 to 40 feet tall and 3 inches in diameter. The pinnae are long and delicate, and the rachis and petiole are dark reddish green. The inflorescence varies from nearly white to cerise; the fruit is shining black.

For previous introduction see 97285.

Nos. 99569 and 99570 were collected on Carriacou, Grenadine Islands, in March 1932.

99569. *FICUS BENJAMINA COMOSA* (Roxb.) Kurz. Fig. Moraceae.

No. 2874. A strikingly handsome form with brilliant lemon-yellow fruits one half inch in diameter, many of which contain no seeds.

99570. *FICUS* sp.

No. 2794. A medium-sized tree found on a hillside exposed to the trade winds which sweep over the island. The light-green leathery leaves, 4 to 6 inches long, have prominent midribs. The branches are covered with very decorative small figs. Each fig has red-brown patterns of spots and areoles about each spot, giving it a most charming appearance.

For previous introduction see 97845.

99571. *GARCINIA* sp. Clusiaceae.

No. 3766. From the Jardin d'Essais, Fort de France, Martinique, March 9, 1932. Seeds of a species native to Cochinchina which was considered to be the true mangosteen by the authorities in the Jardin d'Essais where the tree has fruited. The very large leaves are leathery and the white flowers contain numerous stamens. The fruits, judging from shells found under the tree, are about the size of a mangosteen but thick walled and pyriform in shape, and are said to be yellow when ripe and very sour.

99572 and 99573. *GIGANTOCHLOA* spp. Poaceae. Bamboo.

From Paramaribo Botanic Garden, Surinam, March 4, 1932. Two of the most valuable bamboo species of the Orient, which were introduced into Surinam over 20 years ago and are now over 60 feet high.

99572. *GIGANTOCHLOA ASPERA* Hort.

No. 3679. A clump bamboo.

For previous introduction see 71258.

99573. *GIGANTOCHLOA VERTICILLATA* (Willd.) Munro.

No. 3678. *Tali* bamboo of Java. A bamboo with culms over 4 inches in diameter, which is largely grown for its useful timber.

For previous introduction see 79568.

99574. *GYNERIUM SACGITTATUM* (Aubl.) Beauv. Poaceae. Uva grass.

No. 3672. *Pampas* grass; from the Botanic Garden, Paramaribo, Surinam, March 4, 1932. A stout reed, often 30 feet tall, native to the West Indies and southward to Paraguay. The lanceolate leaves are 6 feet long and are sharply serrulate on the margin. The inflorescence forms a plummy panicle 3 to 5 feet long, with the main axis erect and the branches drooping. Introduced for comparison with forms already in Florida.

99575. *HELICONIA* sp. Musaceae.

No. 3902. From Tobago Island, February 2, 1932. Seeds of a plant with striking scarlet bracts as large as one's hand which are edged with gold make this one of the showiest flowers of the rain forest.

## 99576 to 99650.

From the West Indies, British Guiana, and Surinam. Plants and seeds collected by David Fairchild and P. H. Dorset, agricultural explorers, Bureau of Plant Industry, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

99576. *HIBISCUS* sp. Malvaceae.

No. 2693. From the Dominican Botanic Garden, January 29, 1932. Plants of an attractive yellow hybrid with coral-pink center, produced by Dr. Harland of Trinidad.

99577. *HIBISCUS* sp. Malvaceae.

No. 2893. Plants presented by Dr. S. C. Harland, of the Cotton Research Station, St. Augustine, Trinidad, February 17, 1932. The wine-red foliage and calyxes of this plant remind one somewhat of *H. sabbariya*, but the form of the leaves and floral parts are entirely distinct.

99578. *HYMENOCALLIS ARENICOLA* A. R. Northr. Amaryllidaceae.

No. 3894. From Conception Island, Bahamas, January 5, 1932. Plants of a West Indian spider-lily with erect spreading, fleshy dark-green lance-oblong leaves over a foot long and white flowers with a filiform tube about 2 inches long, in sessile umbels of 7 to 13 flowers. Native to the Bahamas.

99579. *INGA* sp. Mimosaceae.

No. 3760. Plants.

99580 to 99582. *IXORA* spp. Rubiaceae.99580. *IXORA LUTEA* Hutchinson.

No. 2668. Plants collected in the Botanic Garden, Dominica, January 28, 1932. A glabrous shrub with sessile or subsessile leaves, oblong with rounded or cordate base and sometimes an acuminate tip. It differs from *I. coccinea* by having a laxer inflorescence and pale-yellow flowers with larger ovate-rhomboid corolla lobes.

For the introduction of seeds see 97770.

99581. *IXORA* sp.

No. 2881. Plant presented by Mrs. Nora C. Fitt, of Port-of-Spain, Trinidad, February 15, 1932. A very attractive light-pink hybrid.

99582. *IXORA* sp.

No. 3869. Plants collected at the Tortola Experiment Station, March 19, 1932. An attractive form with salmon-colored flowers, otherwise with characters of *I. coccinea*.

99583. *JACARANDA CAERULEA* (L.) Griseb. Bignoniaceae.

No. 2561. From Nassau, New Providence Island. Plants of a tree native to the West Indies, with bipinnate leaves made up of 2 to 8 branches, each bearing 8 to 16 pairs of obliquely oblong leaflets 1 inch long. The glabrous blue-flowers, 1 to 2 inches long, are borne in lax panicles.

For the introduction of seeds see 96509.

99584. *LECYTHIS ZABUCAJO* Aubl. Lecythidaceae. Sapucaya nut.

No. 2889. Plant presented by R. O. Williams, of the Botanic Garden, Trinidad, February 17, 1932. The sapucaya nut is native to the Amazon Valley and adjacent regions, and many people consider it even better flavored than the Brazil nut. The somewhat triangular nuts, over 2 inches long and about an inch wide, are borne in large woody urn-shaped capsules about 10 inches in diameter with close-fitting lids at the top. The tree is a slow grower and requires a long time to reach the bearing stage.

For previous introduction see 98047.

## 99576 to 99650—Continued.

99585. *LODOICEA SONNERATI* (Giseke) Baill. (*L. sechellarum* Labill.). Phoenicaceae.  
Double coconut.

Seeds from the Georgetown Botanic Garden, British Guiana, February, 1932. A lotty palm, frequently 100 feet in height, with palmate leaves the blades of which are 6 feet across. The fruits are probably the largest known, the individual nuts sometimes weighing 50 pounds; from the time of flowering to the full maturity of the seeds is said to cover a period of 10 years, and the palm itself does not attain full growth until after a hundred years. It is native to the Seychelles.

For previous introduction see 65048.

99586. *PHRYGANOCYDIA CORYMBOSA* (Vent.) Bur. (*Macfadyna corymbosa* Vent.). Bignoniaceae.

No. 2888. Plants presented by R. O. Williams, of the Botanic Garden, Trinidad, February 16, 1932. A rampant climber which covers the trees with a mass of dark-green foliage and several times a year with masses of large funnel-shaped flowers 3 inches in diameter and 3 inches long, mauve in color with a white throat and hooded yellow-green calyx.

99587 to 99593. *MANGIFERA INDICA* L. Anacardiaceae.  
Mango.

Nos. 99587 to 99592 were plants presented by M. Desiré Kervégant, Jardin d'Essais, Fort-de-France, Martinique, March 10, 1932. The West Indian varieties of mango appear to be, all of them, more or less stringy and of small size, but they have the reputation of being regular bearers in the drier parts of the various islands and to flower and fruit even where the ground never really dries out.

99587. No. 3732. *Amelle*, a variety which turns red if exposed to the bright sunlight.

99588. No. 3731. *Divine*, an oblong mango without a prominent heel. A rather early yellow fruit with a red blush when ripened in sunlight; not fiberless nor one of the best but prolific.

99589. No. 3735. *Julie*, considered probably the best shipping mango of the West Indies and commonly propagated by inarching. It is a squarish wedge-shaped variety that in the sunlight colors up with a red blush with an aromatic flavor.

99590. No. 3736. *Martii*, a selected seedling from the Tivoli garden.

99591. No. 3733. *Precinette*.

99592. No. 3734. *Sans Pareil*, a selected seedling grown in the Tivoli garden.

99593. No. 3821. *T'in*. Fruit purchased in the market at Basse Terre, Gaudeloupe, March 12, 1932. A very good yellow mango of medium size and thick round form with flesh much darker than the rind and of excellent quality. Fibers are short and not objectionable, seed small and rather thin leaving a large amount of flesh.

99594. *MARTINEZIA CORALLINA* Mart. Phoenicaceae.  
Palm.

No. 2888. *Gri Gri* or *fishtail* palm, a plant from the Avena Forest Reserve, Trinidad, February 16, 1932. A spiny palm with pinnate leaves about 9 feet long and clusters, 2 to 3 feet long, of small white flowers, followed by bright-red fruits nearly 1 inch in diameter. The pale-brown seeds are used for necklaces by the natives of Martinique where this palm is native.

For previous introduction see 81929.

99595. *MONODORA TENUIFOLIA* Benth. Annonaceae.

No. 2871. A plant presented by R. O. Williams, Botanic Garden, Trinidad, February 16, 1932,

## 99576 to 99650—Continued.

A tropical African tree or large shrub which flowers when the leaves have fallen and bears masses of flowers as showy as orchids, with white petals shading to yellow at the base and with crimson markings.

For previous introduction see 72437.

99596. *MONSTERA* sp. Araceae.

No. 2753. Plants from the Dominican Botanic Garden, January 29, 1932. An ornamental vine, native to Dominica, with deep glossy green leaves with few holes. The leaves are smaller and narrower than those of *M. deliciosa*.

99597. *MONSTERA* sp. Araceae.

No. 2754. Plants from the St. Vincent Botanic Garden, February 4, 1932, and called by T. Jackson, the curator of the garden, the "native species." It differs from *M. deliciosa* in having smaller, narrower leaves with few holes. It appears to be distinct also from no. 2753 [99596].

99598 and 99599. *MONTRICHARDIA ARBORESCENS* (L.) Schott. Araceae.

A tall-growing aroid forming dense thickets on low land near the sea and sometimes rising 10 feet with its treelike woody stems.

99598. No. 2948. Plants from Tobago, Windward Islands, February 20, 1932.

99599. No. 2997. *Mokka Mokka*. Seeds from the Sophia Sugar Station, British Guiana, February 25, 1932.

99600. *MORA EXCELSA* Benth. Caesalpiniaceae.

No. 2916. Plants from the mora forest of eastern Trinidad, February 18, 1932. A large forest tree, native to Guiana. The abruptly pinnate leaves are made up of 3 to 4 pairs of blunt leaflets 5 to 8 inches long, and the small flowers, borne in cylindrical spikes 6 to 10 inches long, are followed by oblong woody pods 3 to 6 inches long, each containing one seed.

For previous introduction see 99000.

99601. *MORAEA* sp. Iridaceae.

No. 2557. Plants presented by D. Lawrence, Nassau, New Providence Island, January 2, 1932. A plant with large coarse leaves over 3 feet tall, with single delicate blue and white and yellow-tinted fragrant sessile flowers about 3 inches in diameter arising singly from the leaves.

99602 and 99603. *MUSSAENDA* spp. Rubiaceae.

Plants presented by R. O. Williams, of the Botanic Garden, Trinidad, February 17, 1932.

99602. *MUSSAENDA ERYTHROPHYLLA* Schum. and Thonn.

No. 2875. A shade-loving scandent shrub when in flower its brilliant scarlet bracts make it a remarkable sight. These bracts are enlarged sepals; one sepal in each flower cluster enlarges until it is 3 inches long and the size of an ordinary leaf and turns deep scarlet.

For previous introduction see 76700.

99603. *MUSSAENDA LUTEOLA* Delle.

No. 2909. A dwarf species of Rubiaceae, with small yellow flowers and large white bractlike sepals which are very showy. It reminds one somewhat of our northern dogwood.

For previous introduction see 66228.

99604. *NANNORRHOPS RITCHIEANA* (Griffith) Wendl. Phoenicaceae.  
Mazri palm.

No. 2804. Plants collected in the Botanic Garden, Grenada, February 10, 1932. A very rare cluster palm, native to Afghanistan and western India, which appears to be as hardy as the true date palm or more so. The leaves are very glau-

## 99576 to 99650—Continued.

ous, both above and below, and the back of the midrib peels off into a curious pubescent string. The terminal bud diverges into two branches.

For previous introduction see 44773.

## 99605. NEOMAMMILLARIA sp. Cactaceae. Cactus.

Plants from Guantanamo Bay, Cuba, March 26, 1932.

## 99606 and 99607. NORANTEA GUIANENSIS Aubl. Marcapaviaceae.

A magnificent climber covering high forest trees. Its spikelike racemes, 3 feet long, are composed of rather inconspicuous flowers, but the fleshy nectar-bearing bracts, 1 inch long, which hang from the horizontally placed spikes are scarlet. In the Tropics it blooms in February and March.

99606. No. 2884. Collected in the Aripo Savanna, Trinidad, March 22, 1932.

99607. No. 3671. From the Agricultural Experiment Station, Paramaribo, Surinam, March 3, 1932.

## 99608. ORBIGNYA SPECIOSA (Mart.) Barb.-Rodr. Phoeniceaceae.

No. 3667. Plants presented by Dr. G. Stahel, of the Botanic Garden, Paramaribo, Surinam. The *Uavassu* palm of Brazil and the Guianas is much like the *Cohune* palm, but its fruits, 3 to 4 inches long, are much larger. An edible oil is extracted from the seeds and is now being exported to the United States.

For previous introduction see 50595.

## 99609. PACHIRA AQUATICA Aubl. Bombacaceae. Guiana-chestnut.

No. 3000. Seeds from the Botanic Garden at Georgetown, British Guiana, February 26, 1932. A small tree, native to tropical America, with palmately compound leaves made up of 5 to 9 obovate leaflets 8 to 12 inches long. The large mallowlike pink to purple flowers are up to 14 inches long and have bright red stamens as long as the petals, and the brown capsules are 15 inches long by 3 to 5 inches in diameter.

## 99610 to 99612. PANDANUS spp. Pandanaceae.

## 99610 and 99611. PANDANUS PACIFICUS Veitch. Pacific screwpine.

Plants of a shrub or small tree with glossy dark-green leaves which make it a most desirable ornamental or hedge plant.

99610. No. 2685. From the Dominican Botanic Garden, March 23, 1932.

99611. No. 2687. From the Trinidad Botanic Garden, February 16, 1932.

## 99612. PANDANUS sp. Screwpine.

No. 2686. Plants presented by F. G. Harcourt from the collection in the Dominican Botanic Garden, January 29, 1932.

## 99613. (Undetermined.)

No. 3827. Plants collected near the Kabel station, Surinam, March 3, 1932. A vine with large yellow flowers growing over tall forest trees at the edge of the Surinam River.

For previous introduction see 99009.

## 99614. PASSIFLORA MALIFORMIS L. Passifloraceae.

No. 3769. Plant presented by M. Corbin, Jardin d'Essais, Grande Terre, Guadeloupe, March 11, 1932. The *Pomme Calabas* of Guadeloupe is characterized by having two large yellow-green bracts that hang down and cover the perfectly round fruit. This fruit is said to be intensely sour even when ripe.

## 99576 to 99650—Continued.

99615. PENTAS LANCEOLATA (Forsk.) Schum. (*P. carnea* Benth.). Rubiaceae.

No. 2873. Plant presented by R. O. Williams, director of the Trinidad Botanic Garden, February 16, 1932. A soft-wooded shrub 2 feet high, native to tropical Africa. The ovate-lanceolate leaves are 3 to 6 inches long, and the brilliant carmine flowers are in terminal heads. The plant does not thrive in the full sunlight.

## 99616. PEPEROMIA sp. Piperaceae.

No. 3820. Plants from the Matuba region of Grande Terre, Guadeloupe, March 13, 1932. A delicate creeping light-green form which roots at the nodes and stands shade well. It forms a mat of light green and would be very useful for the shady side of gardens in the subtropics.

## 99617. PEPEROMIA sp. Piperaceae.

No. 3902. Plants collected along the trail to the citadel, Haiti, March 27, 1932. A delicate small-leaved species with characters that may attract attention to it for hanging baskets and for rock gardens in the South.

## 99618. PETREA VOLUBILIS L. Verbenaceae.

No. 3370. From Antigua, January 26, 1932. *Alba*; a white variety which is not so attractive as the blue-flowered variety and its flowers drop earlier.

## 99619. PHILODENDRON TRIPARTITUM (Jacq.) Schott. Araceae.

No. 3901. Plants collected on the trail to the citadel, between 1,000 and 1,500 feet altitude, Haiti, March 27, 1932. A handsome aroid with rather thin deep-green trilobed membranous leaves, found climbing over rocks and tree trunks along the trail.

## 99620. PIPER BETLE L. Piperaceae.

No. 3767. Plants collected in the Javanese kampong, Cramerweg, Surinam, March 4, 1932. An ornamental vine, historically interesting, as the leaves of this vine are chewed by the Singhalese people.

## 99621. PLEOMELE FRAGRANS (L.) Salisb. Liliaceae.

No. 3793. Plants from Basse Terre, Guadeloupe, March 13, 1932. A foliage plant, native to tropical Africa, with a stem up to 20 feet high. The lanceolate leaves, 2 to 3 feet long, are spreading or recurved, and the heads of small yellow flowers are followed by orange-red berries. In Guadeloupe it is used as a hedge or windbreak. The canes, about 5 feet long, are planted closely together like piling and, taking root, make a remarkably dense living hedge; when in flower these hedges are said to fill the air with their fragrance.

## 99622. PLUMBAGO ROSEA L. Plumbaginaceae. Rose plumbago.

No. 3674. Plants from the Georgetown Botanic Garden, British Guiana, February 27, 1932. A zigzag half-climbing glabrous shrub 3 to 6 feet high, native to southern Asia. The clasping leaves are ovate to elliptic, and the red or scarlet salverform flowers, about 1 inch long, are borne in terminal spikes.

## 99623 to 99625. PLUMERIA spp. Apocynaceae. Frangipani.

## 99623. PLUMERIA ACUTIFOLIA Poir. Mexican frangipani.

No. 3900. From Haiti. Plant presented by C. F. Wood, American vice consul, March 26, 1932. A stiff erect small tree about 25 feet high, with naked branches except for clusters of leaves at the summit of each where also appear in early spring clusters of single white star-shaped flowers of delicious fragrance. The flowers are used in the manufacture of the perfume frangipani.

For previous introduction see 50663.

## 99576 to 99650—Continued.

99624. *PLUMERIA OBTUSA* L.

No. 2570. Plants from Rum Key (black lands), Bahama Islands, January 6, 1932. A tree, native to the West Indies, up to 20 feet high, but often flowering when only 6 feet high. The oblong to obovate leaves are 4 to 8 inches long, and the salverform flowers, 2 inches across, borne in terminal cymes, are white with a yellow eye.

99625. *PLUMERIA ALBA* L.

No. 2766. Plants from the island of Mayero, Grenadines. A tree up to 30 feet high, native to the West Indies. The linear-lanceolate subcoriaceous leaves, 10 inches long, are glabrous above and densely white tomentose beneath. The salver-shaped flowers, 2 inches across, are white with a yellow eye and are borne in compact clusters.

99626. *POTHOS* sp. Araceae.

No. 2885. Plants from the Aripo Savanna, Trinidad, February 14, 1932. An ornamental vine of great beauty with glossy dark-green entire leaves without variegation.

99627. *PSEUDOPHOENIX SAONAE* O. F. Cook. Phoenicaceae. Palm.

No. 2620. Plants from Saona Island, off the southeast coast of the Dominican Republic, January 20, 1932. A tall palm over 25 feet high, with gray-green leaves and great bunches of brilliant scarlet fruits. It suggests in habit a small Royal palm.

For previous introduction see 96437.

99628 and 99629. *PTYCHORAPHIS AUGUSTA* (Kurz) Beccari. Phoenicaceae. Palm.

A very tall feather palm from 80 to 100 feet high and 1 foot in diameter at the base. The crown of leaves, 8 to 12 feet long, with leaflets 2 to 3 feet long, makes a most graceful object in a landscape. Native to the Nicobar Islands, India.

## 99628. No. 2681. Plants presented by F. G. Harcourt, director, Dominican Botanic Garden, January 29, 1932.

## 99629. No. 2877. Plants presented by R. O. Williams, of the Botanic Garden, Trinidad, February 16, 1932.

99630. *RAVENIA SPECTABILIS* (Lindl.) Engler. Rutaceae.

No. 2872. Plant presented by R. O. Williams, of the Botanic Garden, Trinidad, February 16, 1932. A glabrous shrub, native to Cuba, with opposite trifoliate leaves and deep-pink to purple-red tubular flowers 1 inch across, borne singly or in few-flowered clusters.

99631. *RHYTIDOCOS AMARA* (Jaq.) Beccari (*Cocos amara* Jacq.). Phoenicaceae. Palm.

No. 2702. Plants from Dominica, Leeward Islands.

For previous introduction of seeds and description see 96490.

99632. *SAGUERUS PINNATUS* Wurm. (*Arenga saccharifera* Labill.). Phoenicaceae. Sugar palm.

No. 3666. *Gomuti* or *sugar* palm of the East Indies. Plants from Paramaribo, Surinam, March 3, 1932. A handsome palm 30 to 40 feet high, with immense leaves and enormous bunches of fruit. A rich-flavored palm sugar is made from the sap which flows from the bruised fruitstalk. It also furnishes a valuable black fibrous substance, ejoo fiber, superior in quality, cheapness, and durability to that obtained from the husk of the coconut and renowned for its power to resist moisture. It is used by the natives of the

## 99576 to 99650—Continued.

Indian Islands for every purpose of cordage. Underneath this material is found a substance of soft gossamerlike texture which is exported to China, where it is applied as oakum in calking the seams of ships and more generally as tinder for kindling fire.

For previous introduction see 75246.

99633. *ELSOTA DIVERSIFOLIA* (L.) Blake (*Securidaca diversifolia* (L.) Blake). Polygalaceae.

No. 3670. Plants presented by Dr. G. Stahel, Paramaribo, Surinam, March 3, 1932. A trailing or climbing shrub with thick shining oblong to ovate leaves 2 to 6 inches long and racemes of rose-colored flowers. It is native to Central America and the West Indies.

For previous introductions see 88133.

99634. *ELSOTA VIRGATA* (Swartz) Kuntze. (*Securidaca virgata* Swartz). Polygalaceae.

No. 3891. Plants collected on a hillside on the route up to the citadel back of Cape Haitien, Haiti, March 27, 1932. A vinelike shrub with slender wandlike branches 20 feet long, native to the West Indies. The scattered oval leaves are less than 1 inch long, and the numerous small pink and yellow to orange flowers are borne in long slender racemes.

99635. *SMILAX* sp. Smilacaceae.

No. 2687. Plant from the Dominican Botanic Garden, January 29, 1932. A rank-growing variegated ornamental bushy shrub.

99636. *SOCRATEA EXORRHIZA* (Mart.) Wendl. Phoenicaceae. Palm.

No. 3668. Plant presented by Dr. G. Stahel, of the experiment station, Paramaribo, Surinam, March 3, 1932. A tall handsome spineless palm, native to tropical South America, bearing small yellow flowers and olive-green fruits. It has a swollen cylindrical trunk elevated on a pyramid of exposed roots, giving it a remarkable appearance. The trunk, 35 feet or more high, bears at its summit a crown of large irregularly pinnate leaves.

For previous introduction see 80773.

99637. *TRADESCANTIA* sp. Commelinaceae. Spiderwort.

No. 3881. Plants from the Paramaribo Experiment Station, Surinam, March 5, 1932. A very attractive purple form that was growing wild at the experiment station.

99638. *TRIMEZA MARTINICENSIS* (Jacq.) Herb. (*Cipura martinicensis* H.B.K.). Iridaceae.

No. 2655. Plant from Antigua, Leeward Islands.

For previous introduction and description see 98885.

99639. *IXORA FRAGRANS* (Hook. and Arn.) A. Gray. Rubiaceae.

No. 2692. Plants presented by F. G. Harcourt, curator, Dominican Botanic Garden, January 29, 1932. A good-sized tree that bears masses of delicately perfumed white flowers.

99640. *COLOCASIA ANTIQUORUM* Schott. Araceae.

No. 3737. Plants presented by M. Desiré Kervegaat, of the Jardin d'Essais, Martinique, March 10, 1932. *Malanga Blanc*: a white-fleshed variety considered the best-flavored sort grown in the volcanic soil of Martinique.

99641. *ALOCASIA* sp. Araceae.

No. 3743. Plants presented by M. Desiré Kervegaat, of the Jardin d'Essais, Martinique, March 10, 1932. A very large-leaved form which is beautifully variegated with great irregular patches of almost white tissue on the dark-green leaves.

## 99576 to 99650—Continued.

99642. ZEPHYRANTHES CARDINALIS C. H. Wright (*Atamosco cardinalis* Britton). Amaryllidaceae. Zephyrily.

No. 2583. Plants from Nassau, New Providence Island, January 12, 1932. A low herbaceous perennial from a truncated bulb with shining green strap-shaped leaves 6 inches long. The cardinal-red, funnel-shaped flowers, 2 to 3 inches long, are borne on cylindrical scapes which are red at the base and green above.

99643. (Undetermined.)

No. 2555a. Plants from Nassau, New Providence Island, January 1, 1932. A dwarf palm with a curious bottle-shaped trunk and large heavy pinnate leaves, said to have been introduced from India.

99644. (Undetermined.)

No. 2700. Seedling of an undetermined wild palm, native to St. Kitts Island; presented by R. E. Kelsick, superintendent, Agricultural Experiment Station, Basseterre, January 23, 1932.

99645. (Undetermined.)

No. 2947. Plant collected on Tobago Island, February 20, 1932. A large and very vigorous vine with coriaceous heart-shaped leaves on long petioles and a habit which suggests its value as a porch or pergola vine.

99646. (Undetermined.)

No. 3778. Plants collected at the Union Experiment Station, St. Lucia, Windward Islands, March 8, 1932. A vigorous vine with many aerial roots, growing over a mango tree.

99647. (Undetermined.)

No. 2695. From Dominica, January 29, 1932. Plant presented by F. G. Harcourt, who collected it in Trinidad.

99648. (Undetermined.)

99649. (Undetermined.)

99650. (Undetermined.)

## 99651 to 99670.

From India. Seeds presented by G. Ghose & Co., Town-end, Darjeeling. Received May 6, 1932.

99651. ACONITUM PALMATUM Don. Ranunculaceae. Monkshood.

A leafy-stemmed perennial, 2 to 3 feet high, native to the temperate slopes of the Himalayas in India. The deeply five-lobed reniform leaves are 4 to 6 inches across, and the rather large green-blue flowers, on long pedicels, are borne in a sparse panicle.

99652. ANEMONE RIVULARIS Buch.-Ham.

A silky pubescent ornamental from 1 to 3 feet high, with three-parted basal leaves up to 6 inches in diameter and white or bluish flowers, over an inch long, in compound cymes. It is found in the Himalayan region at 5,000 feet altitude.

For previous introduction see 93183.

99653. ASTER TRICEPHALUS C. B. Clarke. Asteraceae.

A small vigorous subtropical herbaceous perennial with reddish flower heads. Native to Sikkim, India.

For previous introduction see 73146.

99654. BETULA UTILIS D. Don. Betulaceae. Birch.

A tree 40 to 60 feet high with red-brown trunk and branches and bark which peels off in papery flakes. It is native to the subtropical regions of the Himalayas. The oval, coarsely toothed,

## 99651 to 99670—Continued.

sharp-pointed leaves, 3 inches long, are dark green above and paler beneath. In winter the orange-chocolate color of the twigs is very striking.

For previous introduction see 73149.

99655. CATHARTIA VILLOSA Hook. f. Papavera-ceae.

A hardy annual or biennial found in the Sikkim Himalayas. The abundance of long shaggy fulvous hairs and the bright-yellow glabrous flowers give it a handsome appearance. The cordate radical leaves are long-petioled and palmately five-lobed; the stem leaves are sessile and the uppermost pinnatifid. The large nodding flowers have golden anthers and a green fleshy stigma.

For previous introduction see 49624.

99656. CHRYSANTHEMUM ATKINSONI C. B. Clarke Asteraceae.

A tuberous-rooted herbaceous perennial with woolly stems 6 to 12 inches high, native to the Sikkim Himalayas in India. The oblong leaves, 4 to 6 inches long, are deeply pinnately divided into linear segments, and the purple flower heads, 1 to 2 inches across, are usually solitary at the thickened top of the stem.

99657. CIRSIUM INVOLUCRATUM DC. Asteraceae. Thistle.

A stout herb, 2 to 6 feet high, native to India. The deeply pinnatifid leaves, 6 to 12 inches long, are white tomentose beneath, and the yellow-white to purple flower heads are 2 to 3 inches across.

99658. CLINTONIA ALPINA (Royle) Kunth. Con-vallariaceae.

A low perennial native to the temperate slopes of the Himalayas in India. The lanceolate sub-radical leaves are 4 to 9 inches long, and the small white funnel-shaped flowers are borne in a loose raceme on a scape 1 to 2 feet high.

99659. CORTIA HOOKERI C. B. Clarke. Apiaceae.

A stemless herbaceous perennial with a rosette of 3- to 4-times pinnate leaves, the ultimate segments being linear and about one fourth inch long. The white or purplish flowers are borne in sessile umbels which are up to 8 inches long and form a dense mass over the crown of the plant. It is native to the Sikkim region in India.

For previous introduction see 93189.

99660. CREMANTHIDIUM OBLONGATUM C. B. Clarke. Asteraceae.

A perennial herb, 4 to 8 inches high, native to the Himalayas on the border between India and Tibet. The coriaceous pinnately nerved radical leaves are reniform and 2 to 3 inches broad, the leaves on the scape are reduced to oblong bracts, and the yellow flower heads are 1 to 2 inches across. Received as *C. elongatum*, which appears to be an error for *C. oblongatum*, with which the seeds agree.

99661. CYANANTHUS LOBATUS Wall. Campanu-laceae.

A perennial herb with more or less prostrate shoots up to 2 feet high, with ovate-oblong lobed leaves an inch long and single blue flowers, somewhat like a periwinkle, sometimes an inch across, appearing in late summer. Native to the Himalayas.

For previous introduction see 78880.

99662. GAULTHERIA PYROLOIDES Hook. f. and Thoms. Ericaceae.

A low evergreen shrub less than a foot high, with narrow-elliptic leaves 1 to 2 inches long and large blue-black berries. Native to the Himalayas.

For previous introduction see 78354.

## 99651 to 99670—Continued.

99663. *GENTIANA STYLOPHORA* C. B. Clarke. Gentianaceae. **Gentian.**

A stout herbaceous perennial, native to the slopes of the Himalayas between 11,000 and 14,000 feet altitude in Sikkim, India. The simple stems are 3 to 6 feet high, the lower leaves are elliptic and 12 inches long, and the upper leaves are sessile, about 5 inches long. The widely funnel-shaped solitary flowers are borne on axillary peduncles up to 8 inches long.

For previous introduction see 93897.

99664. *HERACLEUM WALLICHII* DC. Apiaceae.

A coarse herb, native to northern India, with stems 3 to 4 feet high, white-hirsute beneath the nodes. The lower leaves are serrate, the upper three-parted, and the small flowers, in compound umbels, are followed by flat brown thin-winged fruits one quarter inch long.

99665. *IRIS CLARKEI* Baker. Iridaceae. **Clarke iris.**

A curiously local Himalayan iris, native to a circumscribed area in the Sikkim and Bhutan regions at altitudes between 6,000 and 11,000 feet, in ground that is swampy half the year and frozen hard under snow during most of the remaining months. The narrow leaves, 2 feet long, droop at the tips, the upper surface is polished and shiny, and the under side is glaucouscent. The solid stem is 2 feet long and bears 1 or 2 lateral heads. The falls are blue-purple blotched with white and are reflexed laterally. The upper part of the haft is marked with yellow, and the red-purple lanceolate standards are poised horizontally. The styles form the highest point of the flower; they are keeled, very convex, and 1 to 2 inches long.

For previous introduction see 92316.

99666. *JUNIPERUS RECURVA* Buch.-Ham. Pinaceae. **Himalayan juniper.**

A prostrate or erect shrub, or sometimes an erect tree up to 30 feet high, native to the temperate and alpine slopes of the Himalayas in India. The fastigate branches are decurved and then ascending with pendulous branchlets.

99667. *LACTUCA DUBYAEA* C. B. Clarke. Cichoriaceae.

A low herbaceous perennial, 6 to 18 inches high, native to the slopes of the central Himalayas in northern India. The ovate-hastate hispid leaves, 3 to 6 inches long, vary from simple to pinnatifid, and the nodding yellow flower heads, 1 inch across, are clothed with black glandular hairs.

99668. *LYCHNIS NIGRESCENS* Edgew. Silenaceae. **Campion.**

A low herb less than a foot high, native to the alpine slopes of the Sikkim Himalayas in northern India. The simple glandular-pubescent stems are one-flowered, the leaves are lanceolate to spatulate, and the nodding purple flowers have the calyx inflated to nearly 1 inch in diameter and lined with broad purple-brown nerves.

99669. *MECONOPSIS NAPAULENSIS* DC. Papaveraceae.

A stout perennial herb, 3 to 5 feet high, with the young parts clothed in softly villous golden hairs, native to the temperate slopes of the Sikkim Himalayas in India. The sinuate-lobed or pinnatifid leaves are 10 to 18 inches long, and the golden yellow flowers, 2 to 4 inches across, are in elongated racemes.

99670. *MYRIACTIS NEPALENSIS* Less. Asteraceae.

An erect annual, 2 to 3 feet high, native to temperate slopes of the Himalayas in northern India. The lanceolate to ovate leaves, 1 to 1 inches long, are coarsely serrate, and the small daisylike white flower heads are in panicles.

## 99671 and 99672.

From India. Seeds presented by R. N. Parker, forest botanist, Forest Research Institute, New Forest, Dehra Dun. Received May 31, 1932.

99671. *EVODIA MELIAEFOLIA* (Hance) Benth. Rutaceae.

A small much-branched tree, native to India. The pinnately compound leaves are made up of 3 to 5 pairs of obliquely lanceolate leaflets 3 to 4 inches long, and the small white flowers are in cymes 8 inches across.

99672. *MUNDULEA SUBEROSA* (Roxb.) Benth. Fabaceae.

A stout erect shrub with thick corky bark, native to India and Ceylon. The coriaceous leaves are made up of 6 to 10 pairs of oblong-lanceolate leaflets 1 to 2 inches long, and the red pea-shaped thinly silvery flowers, 1 inch long, are in dense terminal racemes.

99673 to 99675. *CAPSIUM ANNUUM* L. Solanaceae. **Common redpepper.**

From Spain. Seeds presented by the Granja Escuela de Capataces Agrícolas y Estaciones Especiales de Valencia, through Señor Miguel de Echegaray, agricultural attaché, Spanish Embassy, Washington, D.C. Received May 31, 1932.

A collection of the best commercial varieties of mild-flavored sweet redpeppers grown in Spain.

99673. *Dulce de Bola.*

99674. *Agridulce Temprano.*

99675. *Picante Leren.*

## 99676 to 99682.

From Likiang, China. Seeds presented by Dr. Joseph F. Rock. Received May 11, 1932.

Collected on the slopes of the Likiang Snow Range, Yunnan Province, in November and December 1931.

99676. *BERBERIS* sp. Berberidaceae. **Barberry.**

From Taitzutung at 8,000 feet altitude in a pine forest. An attractive shrub 1 to 2 feet high, with small leaves and globose pruinose fruits.

99677. *CRATAEGUS* sp. Malaceae. **Hawthorn.**

From the forests of Youngming at 10,000 feet altitude. A very handsome tree with brilliant red fruits.

99678. *EPHEDRALIKIANGENSIS* Florin. Gnetaceae. **Jointfir.**

A stout erect shrub, sometimes 4 feet high, with elongated rigid, thick green branches. The minute scalelike leaves are one fifth of an inch long. The fleshy ovoid fruit, nearly one half inch in diameter, is yellowish carmine. Native to Yunnan, China.

99679. *EUONYMUS* sp. Celastraceae.

From open forest on the eastern slopes of the mountains at 11,000 feet altitude. A tree 30 feet high with round spreading crown and very attractive pink fruits.

99680. *HEMEROCALLIS FORRESTII* Diels. Liliaceae. **Daylily.**

A very handsome plant about 2 feet high, with a thick rootstock, narrow lanceolate leaves, and golden-yellow flowers 2 to 3 inches long borne in many-flowered corymbs. Found in limestone meadows at 11,000 feet altitude.

For previous introduction see 58135.

99681. *INCARVILLEA GRANDIFLORA* Bur. and Franch. Bignoniaceae.

A very handsome bush, 2 to 3 feet high, found among limestone rocks between 10,000 and 11,000

## 99676 to 99682—Continued.

feet altitude. The large leaves are pinnatisect, and the large flowers are purplish red and produced in long terminal spikes.

For previous introduction see 59418.

99682. SYRINGA sp. Oleaceae. Lilac.

Trees from 15 to 20 feet high, with rich pink flowers, found in open forests at 11,000 feet altitude.

## 99683 to 99701.

From India. Seeds presented by R. N. Parker, forest botanist, Forest Research Institute, New Forest, Dehra Dun. Received May 3, 1932.

99683 to 99686. ACACIA spp. Mimosaceae.

99683. ACACIA sp.

99684. ACACIA GAGEANA Craib.

A Himalayan acacia with thorny branchlets and compound leaves about 6 inches long, composed of 8 to 11 pinnae and 30 to 40 papery, narrowly oblong, closely set pinnules about 1 inch long. The small flower heads, half an inch in diameter, are in large panicles.

99685. ACACIA MODESTA Wall.

A medium-sized tree with glabrous gray branches and dark-brown polished prickles, native to the foothills of the western and central Himalayas in India. The bipinnate leaves are made up of 4 to 6 pinnae, each bearing 6 to 8 obovate leathery leaflets about one-half inch long. The small green flowers, in spikes 2 to 3 inches long, are followed by straight strap-shaped glossy drab pods 2 to 3 inches long.

99686. ACACIA PENNATA (L.) Willd.

A climbing prickly shrub up to 20 feet high, with very narrow rigid leaflets and dense panicles of yellow flower heads. Native to the central and eastern Himalayas.

For previous introduction see 68326.

99687. ACACIA SUMA (Roxb.) Kurz. (*Mimosa suma* Roxb.). Mimosaceae.

A medium-sized tree with white bark, native to India. The bipinnate leaves have 20 to 40 pinnae each bearing 60 to 100 small pale-green rigid leaflets. The small nearly white flowers are in axillary spikes 3 to 4 inches long.

For previous introduction see 59652.

99688 to 99690. ALBIZZIA spp. Mimosaceae.

99688. ALBIZZIA CHINENSIS (Osbeck) Merr. (*A. stipulata* Boiv.).

A large rapidly growing tree, native to the subtropical regions of India. It is said to have been found very satisfactory in Assam as a shade for tea. The roots do not penetrate the soil deeply, and the foliage does not make a dense shade.

For previous introduction see 63955.

99689. ALBIZZIA LUCIDA (Roxb.) Benth.

A handsome spreading leguminous tree with attractive feathery leaves; native to the East Indies.

For previous introduction see 93176.

99690. ALBIZZIA PROCERA (Roxb.) Benth.

A tall handsome tropical tree often 60 to 80 feet high, with yellowish or green-white bark, large compound leaves, and terminal panicles of yellow-white flowers. In Burma, Bengal, and southern India where this tree is native the brown heartwood is used for making agricultural implements.

For previous introduction see 94179.

## 99683 to 99701—Continued.

99691. BAUHINIA VARIEGATA L. Caesalpinaceae.  
Buddhist bauhinia.

An Indian tree up to 20 feet high, with broadly ovate leaves, two-lobed at the top, and small clusters of large white flowers, beautifully variegated with red and yellow.

For previous introduction see 77156.

99692. BUTEA PELLITA Hook. f. Fabaceae.

An erect shrub 3 feet or less in height, with large trifoliate leaves and yellow flowers about one-half inch long in axillary racemes. The ovate-oblong woody coriaceous pod is about 3 inches in length. Native to the Himalayas.

99693. CAESALPINIA SAPPAN L. Caesalpinaceae.  
Sappan.

A shrubby leguminous tree, native to India and the Malay Archipelago, which bears showy yellow flowers. The wood yields a red dye, and the bark is used for tanning. It is said to be an excellent hedge plant and to endure rather poor dry soils.

For previous introduction see 94182.

99694. CAESALPINIA SEPIARIA Roxb. Caesalpinaceae.  
Mysore thorn.

For previous introduction and description see 99401.

99695. CASSIA DIDYMOBOTRYA Fres. Caesalpinaceae.

A shrub or small tree, 7 to 10 feet high, native to Africa. The finely divided leaves are about a foot long, and the numerous yellow flowers are in erect racemes up to a foot in length.

For previous introduction see 88109.

99696. CASSIA SUBATTENSIS Burm. f. (*C. glauca* Lam.). Caesalpinaceae.

A tropical leguminous shrub or small tree with pale-green compound leaves and clusters of pale-yellow flowers. It is native to the East Indies.

For previous introduction see 86694.

99697. ERYTHRINA STRICTA Roxb. Fabaceae.  
Coraltree.

A large tree with whitish prickles, native to India. The trifoliate leaves have ovate rhomboid leaflets 4 to 6 inches long, and the coral-red flowers, 1 to 2 inches long, are borne in dense racemes 6 inches long.

99698. MIMOSA SPEGAZZINII Pirotta. Mimosaceae.

A much-branched climbing shrub with recurved spines, sensitive bipinnate leaves 2 to 3 inches long, and globular heads, about 1 inch in diameter, of rose-purple flowers. It is native to Argentina.

For previous introduction see 94779.

99699. SOPHORA SECUNDIFLORA (Ort.) DC. Fabaceae.

A shrub or small tree, up to 35 feet high, native to Mexico. The evergreen pinnate leaves are made up of 7 to 11 elliptic to oblong leaflets 2 inches long, and the fragrant violet-blue flowers, 1 inch long, are in racemes.

99700. SOPHORA TOMENTOSA L. Fabaceae.

A small tree, native to India and Ceylon, with slender wandlike branches and pinnate leaves made up of 15 to 19 obovate leaflets, 1 to 2 inches long, densely gray downy beneath. The yellow pea-shaped flowers, nearly an inch long, are borne in racemes 6 inches long.

## 99683 to 99701—Continued.

99701. *WIGANDIA KUNTHII* Choisy. Hydrophyllaceae.

A shrub or tree up to 15 feet high, native to Mexico and Central America, the stems being hispid with stinging hairs. The coarsely crenate cordate leaves, 16 inches long, are tomentose beneath, and the small blue and white bell-shaped flowers are in 1-sided cymes.

99702. *ULMUS PUMILA* L. Ulmaceae.  
Chinese elm.

From Nanking, China. Seeds presented by the College of Agriculture and Forestry, University of Nanking. Received June 1, 1932.

A hardy rapid-growing Chinese elm which is cold- and drought-resistant and thrives in poor soil.

For previous introduction see 93750.

## 99703 to 99706.

From Cluj, Rumania. Seeds presented by Dr. Al. Borza, directeur du Jardin Botanique de l'Université de Cluj. Received May 31, 1932.

99703. *ELAEAGNUS MACROPHYLLA* Thunb. Elaeagnaceae. Broadleaf elaeagnus.

An evergreen shrub, up to 10 feet high, with silver-white branchlets, native to Japan. The broadly ovate leaves, 2 to 5 inches long, are densely silvery scaly beneath, and the small fragrant nodding flowers, in clusters of 4 to 6, are covered outside with silvery and brown scales. The red ellipsoidal fruits are about one-half inch long and covered with silvery scales.

99704 to 99706. *RUBUS* spp. Rosaceae.

99704. *RUBUS LACINIATUS* Willd. Cutleaf blackberry.

A blackberry, native to Europe, with angled arching stems armed with hooked prickles. The 3 to 5 pinnately lobed and incisely toothed leaflets are pubescent beneath, the light-pink flowers are in large prickly panicles, and the sweet black fruits are about one-half inch long.

99705. *RUBUS LASIOSTYLUS* Focke. Woolly raspberry.

A wild raspberry from western China, with blue-white bristly stems, small pinnate leaves, silvery beneath, magenta flowers, and rose-colored woolly fruits which are sweet but said to be of little use for eating.

For previous introduction see 66607.

99706. *RUBUS ROSAEFOLIUS* J. E. Smith. Roseleaf raspberry.

A raspberry, native to southeastern Asia and evergreen in the Tropics. The hairy stems are 3 to 6 feet high, the pinnately compound leaves are made up of 2 to 7 pairs of ovate sharply serrate leaflets, and the white flowers, 1 to 2 inches across, are in small clusters and are followed by erect bright-red, thimble-shaped fruits nearly 2 inches long, edible but insipid.

## 99707 to 99759.

From India. Seeds presented by the curator, Lloyd Botanic Garden, Darjeeling. Received May 6, 1932.

99707. *ABIES SPECTABILIS* Lambert. Pinaceae. Himalayan fir.

A tree sometimes 150 feet high, native to the Himalayas. The dark-green leaves are arranged in two opposite series, so as to leave a V-shaped opening along the top; the individual leaves are 1 to 2 inches long. The cones, about 5 inches long, are violet purple at first, becoming brown.

For previous introduction see 73140.

## 99707 to 99759—Continued.

99708 to 99712. *ACER* spp. Aceraceae. Maple.

99708. *ACER CAMPBELLII* Hook. f. and Thoms.

A tree up to 50 feet high, native to India. The bright-green 5- to 7-lobed leaves are 4 to 7 inches across and contrast sharply with the red petioles, 1 to 3 inches long. The small green and white flowers are borne in cymes 2 to 6 inches long.

For previous introduction see 68327.

99709. *ACER CAUDATUM* Wall.

A large tree with dark-gray bark and 5-lobed, red-stemmed leaves from 2 to 5 inches long. The shiny compact moderately hard wood is white with a faint pink tinge. The maple is found in the temperate Himalayas between 7,000 and 11,000 feet altitude.

For previous introduction see 65752.

99710. *ACER HOOKERI* Miquel.

A handsome tree 40 to 50 feet high, with deeply fissured brown bark, native to the Sikkim Himalayas at altitudes between 8,000 and 10,000 feet. The oval leaves, 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 68328.

99711. *ACER LAEVIGATUM* Wall.

A large tree, up to 40 feet high and 3 to 4 feet in diameter, native to the temperate slopes of the Himalayas in India. The oblong to entire leaves are 2 to 6 inches long, ovate, deeply reticulated, and the paniced cymes of small white flowers appear with the leaves.

For previous introduction see 53903.

99712. *ACER THOMSONI* Miquel.

A large handsome tree with thin gray bark and very large, shallow-lobed leaves up to 10 inches long. Native to Sikkim and Bhutan, India, at about 8,000 feet altitude.

For previous introduction see 62809.

99713. *ACONITUM LURIDUM* Hook. f. and Thoms. Ranunculaceae. Monkshood.

A perennial herb with simple erect stems 2 to 3 feet high, native to the alpine slopes of the Himalayas in India. The palmately five-lobed leaves, 2 to 3 inches across, have coarsely crenate margins, and the dull-red flowers, borne in a simple raceme, have a long straight beak and a broad domelike dorsal prominence.

99714. *ACONITUM* sp. Ranunculaceae. Monkshood.

Collected at 12,000 feet altitude.

99715. *ALLIUM WALLICHIANUM* Steud. Liliaceae. Onion.

A tall eastern onion, native to Asia, with narrow flat leaves about 3 feet long and purple flower heads.

For previous introduction see 97583.

99716. *ANAPHALIS ROYLEANA* DC. Asteraceae.

A perennial herb, 4 to 6 inches high, slightly woody at the base, native to the alpine slopes of the Himalayas up to 15,000 feet altitude. The sessile linear to oblong leaves are about 1 inch long and woolly beneath, and the small flower heads are densely white tomentose.

99717. *ANEMONE RIVULARIS* Buch.-Ham. Ranunculaceae.

For previous introduction and description see 99652.



## 99707 to 99759—Continued.

99718. *ARISAEMA SPECIOSUM* (Wall.) Mart. Araceae.

A perennial herb with an oblique creeping rootstock often 5 inches in diameter, native to the temperate slopes of the Himalayas up to 10,000 feet altitude. The single leaf has a stout green petiole marbled with brown or purple and three slightly cordate leaflets, 16 to 19 inches long, edged with red or purple. The tube of the spathe, 2 to 4 inches long, is striped with purple, and the limb, 2 to 6 inches long, is banded with white and purple. The pink spadix has a threadlike purple tip 12 to 18 inches long.

99719. *ASTER DIPLOSTEPHIODES* (DC.) Benth. Asteraceae.

A perennial herb 2 to 3 feet high, native to the alpine slopes of the Indian Himalayas up to 16,000 feet altitude. The entire lanceolate leaves are 2 to 3 inches long, and the blue to pale-purple flower heads are 1 to 3 inches across and are borne singly.

99720. *ASTER HIMALAICUS* C. B. Clarke. Asteraceae.

A low perennial herb, 12 to 18 inches high, native to the Indian Himalayas up to 15,000 feet altitude. The obovate-spatulate leaves are 1 to 2 inches long, and the lilac-blue flower heads, borne singly at the tips of the stems, are 1 to 2 inches across.

For previous introduction see 47642.

99721. *ASTILBE RIVULARIS* Buch.-Ham. Saxifragaceae.

A perennial herb with tawny hairy stems, 3 to 5 feet high, native to Nepal and western China. The biternate leaves have dentate ovate leaflets 1 to 3 inches long, and the creamy white flowers with pure-white stamens are borne in spikes gathered into large panicles at the top of the stems.

For previous introduction see 73147.

99722. *BUPLEURUM CANDOLLI* Wall. Apiaceae.

A perennial herb 1 to 3 feet high, native to the Himalayas up to 12,000 feet altitude. The linear to ovate leaves, 2 to 5 inches long, are entire, and the small yellow flowers are borne in compound umbels.

99723. *CALAMAGROSTIS EMOGENSIS* Griseb. Grass.

A perennial grass, 3 to 5 feet high, native to northern India up to 8,000 feet altitude. The pale glaucous-green leaves, 12 to 18 inches long, are somewhat leathery, and the soft silky pale-gray nodding panicles are 6 to 10 inches long.

99724. *CALLICARPA RUBELLA* Lindl. Verbenaceae.

A shrub or small tree up to 20 feet high, native to India and China. The ovate tomentose leaves are 5 inches long, and the small pink flowers in axillary cymes are followed by purple berries. Collected at 3,000 feet altitude.

99725. *CARYOTA URENS* L. Phoenicaceae.

Toddy palm.

A palm up to 80 feet high and 18 inches in diameter, with twice pinnately divided leaves 20 feet long by 12 feet wide. The segments are curved and drooping. It is native to the Malay Archipelago.

For previous introduction see 91777.

99726. *CINNAMOMUM IMPRESSINERVIUM* Meisn. Lauraceae.

An evergreen shrub or small tree with slender branches and silky branchlets, native to the Himalayas up to 8,000 feet altitude. The elliptic-lanceolate leaves, 3 to 5 inches long, have deeply impressed nerves, and the inconspicuous flowers are followed by dark-brown globular fruits less than one-half inch in diameter.

## 99707 to 99759—Continued.

99727. *CLEMATIS GREWIAEFLOREA* DC. Ranunculaceae.

A woody climbing vine with densely tomentose, simply pinnate leaves, native to India. The 3 to 5 broadly cordate leaflets have serrate margins, and the tubular-campanulate tawny yellow flowers are 1 to 2 inches long.

99728. *CLERODENDRUM COLÉBROOKIANUM* Walp. Verbenaceae.

A low shrub, 4 to 8 feet high, with rose-purple or white flowers about an inch long and small blue fruits less than an inch in diameter. It is native to Sikkim and Assam, India, at rather low altitudes and will therefore probably not endure much cold.

For previous introduction see 61600.

99729. *CORTIA HOOKERI* C. B. Clarke. Apiaceae.

For previous introduction and description see 99659.

99730. *CURCULIGO CAPITULATA* (Lour.) Kuntze (*C. recurvata* Ait.). Amaryllidaceae.

A stemless tuberous-rooted perennial, native to tropical Asia. The lanceolate plaited leaves, 1 to 3 feet long, are recurved, and the star-shaped drooping yellow flowers, about 1 inch across, are borne in dense heads on recurved stalks 3 inches long, covered with soft brown hairs.

99731. *HIROCHLOE FLEXUOSA* Hook. f. Poaceae.

Grass.

An erect very slender sweet-scented perennial grass, 2 to 3 feet high, native to the Himalayas in Sikkim, India. The leaves are narrowly linear and the lax panicles, 2 to 3 inches long and broad, are made up of much-compressed brown spikelets.

99732. *HYPERICUM OBLONGIFOLIUM* Choisy (*H. cernuum* Roxb.). Hypericaceae. St. Johnswort.

A shrub 3 to 6 feet high, native to the temperate slopes of the Himalayas in India. The sessile ovate-lanceolate leaves are 1 to 3 inches long, and the nodding flowers, 2 inches across, are white on opening, turning light yellow with age.

99733. *IMPATIENS URTICIFOLIA* Wall. Impatiensaceae.

A slender herb, 2 to 3 feet high, native to the temperate slopes of the Himalayas up to 12,000 feet altitude in Sikkim, India. The alternate membranous leaves, 4 to 6 inches long, are elliptic-ovate with a long point and have crenate margins. The flowers, nearly an inch in diameter, are yellow with white to purple streaks and are borne in small axillary clusters on slender pedicels.

99734. *INDIGOFERA DOSUA* Buch.-Ham. Fabaceae.

Indigo.

A low shrub with woody branches, covered with short gray or brownish pubescence. The leaves, 1 to 3 inches long, bear leaflets less than an inch long, which are dull green above and glaucous below. The racemes of bright-red flowers are 1 to 3 inches long with lanceolate-cuspidate silky bracts.

For previous introduction see 86679.

99735. *IRIS CLARKEI* Baker. Iridaceae.

Clarke iris.

For previous introduction and description see 99665.

99736. *JUNIPERUS RECURVA* Buch.-Ham. Pinaceae.

Himalayan juniper.

For previous introduction and description see 99666.

## 99707 to 99759—Continued.

99737. *LACTUCA LESSERTIANA* C. B. Clarke. Cichoriaceae.

A perennial herb, native to the temperate alpine slopes of the Himalayas up to 16,000 feet altitude in India. The stems, less than a foot high, are simple and slender or stout with many lateral branches. The membranous leaves, 1 to 8 inches long, vary from nearly entire to deeply pinnatifid, and the blue flower heads, nearly 1 inch long, are in 12- to 24-flowered panicles.

99738. *LOBELIA ROSEA* Wall. Campanulaceae.

A stout herb up to 12 feet high, with horizontal branches drooping at the tips, native to the subtropical slopes of the Himalayas in India. The narrowly lanceolate leaves, 6 inches long, are velvety above, and the rosy white flowers, nearly an inch long, are in crowded racemes.

99739. *LONICERA GLABRATA* Wall. Caprifoliaceae.  
Honeysuckle.

A shrubby climber, native to the temperate Himalayas up to 8,000 feet altitude. The cordate-oblong leathery leaves are 3 to 5 inches long, and the yellow flowers, an inch long, are tinged with purple outside and are followed by black fruits.

99740. *LONICERA TOMENTELLA* Hook. f. and Thoms. Caprifoliaceae.  
Honeysuckle.

A white-flowered honeysuckle, native to the interior valleys of the mountain region of north-eastern India, where it forms a shrub 10 to 12 feet high. The leaves are dark dull green, and the paired flowers hang from the axils of the leaves. The blue-black berries are about the size of peas.

For previous introduction see 47709.

99741 to 99743. *MEIBOMIA* spp. Fabaceae.

99741. *MEIBOMIA GYROIDES* (DC.) Kuntze (*Desmodium gyroides* DC.).

A shrubby leguminous plant 8 to 10 feet high, native to the warmer parts of the central and eastern Himalayas. It has pubescent leaves and terminal racemes of red-purple flowers.

For previous introduction see 77297.

99742. *MEIBOMIA HETEROCARPA* (L.) Kuntze (*Desmodium polycarpum* DC.).

An erect or suberect undershrub found throughout the Himalayas and Burma. All of the bushy species of this genus are said to contain good fibers, used in some cases for paper making.

For previous introduction see 94078.

99743. *MEIBOMIA TILIAEFOLIA* (D. Don.) Kuntze (*Desmodium tiliaefolium* Don.).

A hardy and more or less ornamental deciduous shrub with slender terete branches, thick green trifoliate leaves about 4 inches long, and red flowers in lax racemes often a foot long. The bark yields an excellent fiber which is used in rope making, the leaves are good fodder, and the roots are used medicinally as a tonic and diuretic. It is native to the Himalayas from 3,000 to 9,000 feet altitude.

For previous introduction see 93194.

99744. *OPHIPOGON INTERMEDIUS* D. Don. Liliaceae.

A hardy perennial, indigenous to Ceylon, with grasslike leaves and white flowers. It reaches a height of about 1 foot and is suited to moist shady places.

For previous introduction see 91823.

## 99707 to 99759—Continued.

99745. *OXYSPORA PANICULATA* (D. Don.) DC. Melastomaceae.

A large spreading Himalayan shrub with opposite ovate leaves 5 inches long and large loose panicles of rose-purple flowers.

For previous introduction see 76907.

99746. *PAEDERIA FOETIDA* L. Rubiaceae

A slender attractive-looking climbing vine with glabrous ovate or lanceolate leaves on long petioles. The small pink flowers are in branching cymes. Native to India and the Malay Archipelago. The leaves or any part of the plant when bruised emit a most offensive odor.

For previous introduction see 41876.

99747. *PAERNASSIA NUBICOLA* Wall. Saxifragaceae.

A perennial herb, 4 to 19 inches high, native to temperate and alpine slopes of the Himalayas up to 12,000 feet altitude. The 1 to 3 leaves are cordate-oblong, and the white flowers, an inch across, are borne singly.

99748. *PHOENIX RUPICOLA* T. Anders. Phoenicaceae.  
Cliff date palm.

A Himalayan palm with a solitary slender naked stem 15 to 20 feet high, bright-green leaves 10 feet long, and shining yellow oblong fruits.

For previous introduction see 76412.

99749. *PHYLLANTHUS EMBLICA* L. Euphorbiaceae.  
Nelli.

A small tree with slender branches bearing numerous linear 2-ranked leaves about one half inch long. The globose fruits are used as a purgative when raw or are cooked to make an acid sauce. Native to tropical Asia.

For previous introduction see 92925.

99750. *PHYLLANTHUS WIGHTIANUS* Muell. Arg. Euphorbiaceae.

A shrub with long spreading upcurved branches, native to India. The membranous oblique leaves are pale green above and glaucous beneath, and the solitary inconspicuous flowers are followed by small globular capsules covered with rusty bristles.

99751. *PRIMULA* sp. Primulaceae. Primrose.

Collected at 6,000 feet altitude.

99752. *SAXIFRAGA PURPURASCENS* Hook. f. and Thoms. Saxifragaceae. Saxifrage.

A beautiful herbaceous rock plant, native to the temperate regions of the Sikkim Himalayas between 10,000 and 14,000 feet altitude. The bright glossy green leaves are elegantly margined with red, and the scape and inflorescence are deep bright vinous red-purple.

For previous introduction see 63662.

99753. *SPIRAEA MICRANTHA* Hook. f. Rosaceae.

A very attractive shrub of rather lax habit found in the eastern temperate Himalayas between 6,000 and 10,000 feet altitude. The narrowly ovate, doubly toothed leaves are sometimes 7 inches long, and the small pale-pink flowers are borne in very long spreading panicles.

For previous introduction see 55705.

99754. *STRAX HOOKERI* C. B. Clarke. Styra-ceae. Snowbell.

A tree often 40 feet high, native to Sikkim and Bhutan, between 6,000 and 7,000 feet altitude. The white flowers, 1 inch long, are tomentose

## 99707 to 99759—Continued.

outside and the young branches are stellate-pubescent. The wood is white, close grained, and moderately hard.

For previous introduction see 86686.

99755. *SWERTIA CHIRAYITA* (Roxb.) Karst. (*S. chirata* Buch.-Ham.). Gentianaceae.

A tall herbaceous plant, native to India, with stems 2 to 5 feet high and subsessile leaves 2 to 4 inches long. The lurid green-yellow flowers, in large panicles, are tubular, with purple-veined lobes one-fourth inch long; they have two glandular depressions at the base of each lobe, with a fringe of long white or pink hairs at the summit.

99756. *SYMPLOCOS SUMUNTIA* Buch.-Ham. Sympllocaceae. Sweetleaf.

A small evergreen tree, native to the lower slopes of the Himalayas up to 7,000 feet altitude. The leathery oblong-lanceolate leaves, with crenate margins, are 3 to 5 inches long, and the small white flowers, borne in racemes 1 to 2 inches long, are followed by ovoid-cylindrical fruits less than one-half inch long.

99757. *THUNBERGIA LUTEA* T. Anders. Acanthaceae.

A slender perennial vine, native to the lower Himalayas up to 7,000 feet altitude. The ovate to lanceolate leaves are 6 inches long with toothed margins, and the funnel-shaped yellow flowers, 1 to 2 inches across, are in small axillary clusters.

99758. *TRACHYCARPUS MARTIANUS* (Wall.) Wendl. Phoenicaceae. Martius palm.

A slender-trunked fan-leaved palm from the temperate regions of the Himalayas where it grows to a height of 20 to 50 feet. The unarmed trunk bears at its summit a crown of rigid leathery roundish leaves 4 to 5 feet in diameter which are cut about halfway down into narrow two-lobed segments. The yellow flowers followed by blue fruits are borne on a nodding spadix about a foot in length.

For previous introduction see 55706.

99759. *XOLISMA OVALIFOLIA* (Wall.) Rehder. Ericaceae.

A shrub or small tree with ovate or somewhat oblong leathery leaves 3 to 6 inches long and racemes of white or bluish or sometimes flesh-colored flowers. Because of a poisonous principle, the young leaves and buds are useful as an insecticide.

For previous introduction see 68341.

99760 to 99771. *MANGIFERA INDICA* L. Anacardiaceae. Mango.

From Puerto Rico. Bud sticks presented by Edmund H. Twilight, specialist in fruits, Insular Experiment Station, Rio Piedras. Received June 7, 1932.

A collection of mangoes introduced for the use of Department specialists working with fruit breeding.

99760. *Barsha*. No. 407.

99761. *Bombay Yellow*. No. 402.

99762. *Climoise*. No. 3320.

99763. *Divine*. No. 1822.

99764. *Emiria*. No. 205.

99765. *Kachmahua*. No. 3317.

99766. *Kitapal*. No. 101.

99767. *Martinique*. No. 1511.

99768. *Muller*. No. 2412.

99769. *Nucka*. No. 3418.

99770. *Singapur*. No. 1215.

99771. *Surka*. No. 3117.

## 99772 to 99789.

From Peru, South America. Seeds collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received May 19, 1932.

99772. *ASCLEPIAS CURASSAVICA* L. Asclepiadaceae. Bloodflower.

No. 216. From Rio Colorado, near Merced, April 28, 1932. An ornamental herb 3 feet high with red and yellow flowers, found on a wooded river bank at 2,800 feet altitude.

For previous introduction see 50673.

99773. *CANNA* sp. Cannaceae.

No. 203. From Rio Colorado, near Merced, April 16, 1932, at 2,800 feet altitude. A rare ornamental herb, 3 feet high, with red flowers. Found in black loam.

99774. *CAPSIUM ANNUM* L. Solanaceae. Common redpepper.

No. 208. *Aj.* From Rio Colorado, near Merced, April 16, 1932. A locally grown redpepper found in open black soil at 2,800 feet altitude. The almost round purple fruits, over an inch in diameter, are used by the Chunchu Indians.

99775. *CAPSIUM ANNUM* L. Solanaceae. Common redpepper.

No. 232. *Aj.* From the market at Tarma, April 23, 1932. A mixed sample of cultivated redpeppers grown at 10,000 feet altitude. The sample varied both as to color and shape.

99776. *CHAMAEDOREA* sp. Phoenicaceae. Palm.

No. 200. *Shia-Shia*. From Rio Colorado, near Merced, in the shade of the forest at 2,800 feet altitude, April 16, 1932. A liane with yellow flowers which are followed by dark-blue berries. The male flowers are very fragrant and are used as a perfume for clothing in the same manner as lavender is used.

99777. *CROTALARIA* sp. Fabaceae.

No. 215. From a wooded slope at 2,800 feet altitude in Rio Colorado, near Merced. An ornamental shrub 3 feet high.

99778. *CYPHOANDRA BETACEA* (Cav.) Sendt. Solanaceae. Tree-tomato.

No. 263. *Tomate*. Purchased in the market at Huancayo, April 24, 1932, but grown at 10,000 feet altitude. An ellipsoid, pointed, thick-skinned, maroon-colored fruit.

99779. *ERYTHROXYLON COCA* Lam. Erythroxylaceae. Cocaine-tree.

No. 197. *Coca*. From Rio Colorado, near Merced, at 2,800 feet altitude, April 16, 1932. A tropical shrub, native to Peru, 5 to 6 feet high, with rusty brown slender branches bearing clusters of obovate leaves at their tips. The yellowish flowers are borne in clusters of 3 to 5 in the axils of small scales which line the branchlets. It is grown commercially on a large scale throughout the warmer parts of South America, also in Java and Ceylon, for the sake of cocaine, which is extracted from the dried leaves.

For previous introduction see 78509.

99780. *INDIGOFERA SUFFRUTICOSA* Mill. Fabaceae. Indigo.

No. 199. *Añil*. From Rio Colorado, near Merced, April 16, 1932, at 2,800 feet altitude. A shrub 10 feet high growing in black loam and said to have escaped from cultivation.

For previous introduction see 98996.

99781. *LYCOPERSICON ESCULENTUM* Mill. Solanaceae. Tomato.

No. 209. *Tomate*. From Rio Colorado, near Merced, April 16, 1932. A small red round tomato about an inch in diameter, cultivated by the Chunchu Indians at 2,800 feet altitude.

## 99772 to 99789—Continued.

99782. *LYCOPERSICON ESCULENTUM* Mill. Solanaceae. Tomato.

No. 233. *Tomaté*. Purchased in the market at Tarma, April 23, 1932. A small round red local variety, cultivated by the Indians at 10,000 feet altitude.

99783. *PASSIFLOEA MOLLISSIMA* (H. B. K.) Bailey. Passifloraceae. Softleaf passionflower.

No. 264. *Tumbo*. Purchased in the market at Huancayo, Peru, April 24, 1932, but said to have been grown at 10,800 feet altitude. An edible variety with yellow elliptical pointed fruits.

99784. *ROLLINIA* sp. Annonaceae.

No. 206. From Rio Colorado, near Merced, in a tropical rain forest at 2,800 feet altitude, April 16, 1932. A native tree 40 to 50 feet high, with fruits 6 inches in diameter.

99785. *SOLANUM* sp. Solanaceae.

No. 196. Between Lima and Oroya, at 7,800 feet altitude, April 12, 1932. An herb 3 feet high, growing in open sandy soil. The lavender flowers are followed by berries on reflected peduncles.

99786. *COSMOS SULPHEREUS* Cav. Asteraceae. Yellow cosmos.

No. 207. From Rio Colorado, near Merced, in a tropical rain forest, at 2,800 feet altitude, April 16, 1932. An herb 3 feet high with showy yellow flowers.

For previous introduction see 51925.

99787. *ALONSOA ACUTIFOLIA* Ruiz and Pav. Scrophulariaceae.

No. 217. *Shohompay*. From the Hacienda Makko, near Tarma, at 11,500 feet altitude, in open alpine meadow, April 20, 1932. An ornamental herb, 2 feet high, with orange flowers; common at this altitude.

99788. (Undetermined.)

No. 214. From the Hacienda Makko, near Tarma, at 12,000 feet altitude, in alpine meadow, April 19, 1932. An herb 3 feet high, covered with bristles, which irritate the skin, as does the nettle. The drooping yellow flowers are very ornamental.

99789. (Undetermined.)

No. 220. From Rio Colorado, near Merced, on a wooded shady slope at 2,800 feet altitude, April 19, 1932. An ornamental herb with ultramarine blue berries.

99790 to 99792. *PHASEOLUS LUNATUS* L. Fabaceae. Lima bean.

From Cuba. Seeds presented by Mrs. F. S. Earle, Herradura. Received April 19, 1932.

Introduced for comparison with the varieties now being grown on the Pacific coast.

99790. A perennial bean with small white seeds.

99791. The commercial bean of this region.

99792. A locally grown speckled perennial lima bean.

99793 to 99801. *MANGIFERA INDICA* L. Anacardiaceae. Mango.

From Puerto Rico. Bud sticks presented by Edmund H. Twig, specialist in fruits, Insular Experiment Station, Rio Piedras. Received June 8, 1932.

A collection of mangoes introduced for the use of Department specialists working with fruit breeding. Except *Colombo Kidney*, all of the following are local selections. Most of them came from the island of Vieques and were probably originally from Martinique.

## 99793 to 99801—Continued.

99793. *Bayamon*.

99798. *Playa Grande*.

99794. *Colombo Kidney*.

99799. *Reine Amelie*.

99795. *Del Valle*.

99800. *Sorce*, No. 2.

99796. *Julie*.

99801. *Teté Nene*.

99797. *Leguillo*.

## 99802 to 99805.

From the Society Islands. Plants presented by Harrison W. Smith, Papeari, Tahiti. Received June 9, 1932.

99802 to 99804. *MANGIFERA INDICA* L. Anacardiaceae. Mango.

99802. *Brander* mango. A dwarf fruit with very small seed. This variety was previously called the *Rougier* mango.

99803. *Mission* mango. A beautiful, very sweet fruit. Its name is due to the fact that one of the Brothers at the mission has chiefly propagated it, and perhaps the original tree is in the mission grounds.

99804. *Tuehau* mango. This is considered, by some, the best and richest flavored mango of the islands, and it is said to come true from seed.

99805. *PERSEA AMERICANA* Mill. Lauraceae. *Arue* avocado. Avocado.

99806. *PHASEOLUS LUNATUS* L. Fabaceae. Lima bean.

From Cuba. Seeds presented by Mrs. F. S. Earle, Herradura. Received June 6, 1932.

A white lima bean, grown in Cuba for export. Introduced for comparison with the varieties now being grown on the Pacific coast.

## 99807 and 99808.

From British Guiana. Seeds presented by Mr. Martyn, botanist, Georgetown Botanic Garden, through David Fairchild, agricultural explorer, Bureau of Plant Industry. Received June 6, 1932.

99807. *BRADBURYA PLUMIERI* (Turp.) Kuntze (*Centrosema plumieri* Turp.). Fabaceae.

A tropical ornamental vine, native to Brazil, with white and red flowers. It is of value as green manure.

For previous introduction see 91467.

99808. *NAUCLEA ESCULENTA* (Afzel.) Merr. (*Sarcocephalus esculentus* Afzel.). Rubiaceae.

A scandent shrub or a tree up to 25 feet high, native to tropical Africa. The sharp-pointed elliptical leaves are 2 to 3 inches long, and the white, yellowish, or pale-pink fragrant flowers are in dense heads. The fruiting head, 2 to 4 inches in diameter, is deep red with a brown granulated surface and a solid edible core which occupies about a quarter of the diameter.

99809. *MEIBOMIA* sp. Fabaceae.

From the Seychelles Islands. Seeds presented by P. R. Dupont, director, Department of Agriculture. Received June 6, 1932.

Introduced for the use of Department forage-crop specialists.

99810 to 99818. *PHASEOLUS LUNATUS* L. Fabaceae. Lima bean.

From the Canal Zone. Seeds presented by J. E. Higgins, director, Canal Zone Experiment Gardens, Summit. Received June 6, 1932.

A collection of lima-bean types grown in Panama, introduced for comparison with the types now being grown on the Pacific coast.

## 99810 to 99818—Continued.

99810. A small red bean blotched with light gray.  
 99811. A gray bean three-fourths inch long, heavily blotched with black around the edge.  
 99812. A small bean mottled tan gray and black.  
 99813. A medium-sized gray and light-brown bean, slightly mottled with black.  
 99814. A small light-gray bean with a black line around the hilum.  
 99815. A red bean blotched with light gray, very similar to 99810, but smaller.  
 99816. A medium-sized gray and tan bean slightly mottled with black.  
 99817. A medium-sized gray and black bean slightly mottled with brown.  
 99818. A gray bean, three-fourths inch long, with a black blotch around the hilum and marked with black and brown around the edge.

## 99819 to 99822.

From Africa. Seeds presented by D. C. Edwards, Scott Agricultural Laboratories, Department of Agriculture, Nairobi, Kenya. Received June 6, 1932.

Introduced for the use of Department forage-crop specialists.

99819. *CROTALARIA AGATIFLORA* Schweinf. f. Fabaceae.

For previous introduction see 66039.

99820. *CROTALARIA DILLONIANA* Baker. Fabaceae.

For previous introduction see 64535.

99821. *LUPINUS MUTABILIS* Sweet. Fabaceae. South American lupine.

For previous introduction see 88274.

99822. *LUPINUS LUTEUS* L. Fabaceae. European yellow lupine.

For previous introduction see 88271.

## 99823 to 100103.

From China. Seeds collected by the sixth Forrest expedition, 1930-32, to southwestern China and presented by Maj. Lionel de Rothschild, London, England. Received June 9, 1932.

99823. *ABIES GEORGI* Hort. Pinaceae. Fir.

A name for which a place of publication and a description have not been found.

- 99824 to 99827. *ACER* spp. Aceraceae. Maple.

99824. *ACER FRANCHETI* Pax.

F. 30491. A small tree about 15 feet high, native to central China. The light-green leaves, 3 to 4 inches long, have three broadly ovate remotely toothed lobes, and the small flowers, in short pubescent racemes appearing with the leaves, are followed by winged fruits, spreading at nearly right angles and having hairy nutlets.

99825. *ACER LAXIFLORUM* Pax.

F. 30462. Received as *A. forrestii*, which is now considered the same as *A. laxiflorum*.

99826. *ACER LAXIFLORUM* Pax.

F. 30631. A tree up to 50 feet high, with cordate-oblong leaves 4 inches long, having 2 to 4 short lobes near the base and serrate margins. The yellowish flowers are borne in slender pendulous racemes and are followed by fruits spreading at right angles. It is native to western China.

For previous introduction see 93873.

## 99823 to 100103—Continued.

99827. *ACER* sp.

F. 30462.

99828. *ALLIUM* sp. Liliaceae. Onion.

F. 30944. Related to *A. prattii*.

- 99829 to 99834. *ANDROSACE* spp. Primulaceae. Rock jasmine.

99829. *ANDROSACE DELAVAYI* Franch.

G. F. 55. A caespitose perennial native to Yunnan, where it grows at an altitude of 13,000 feet near the zone of perpetual snow. The leaves are broadly cuneate-obovate, about one eighth of an inch long, and the white or rosy flowers are one third of an inch across.

- 99830 to 99833. *ANDROSACE SPINULIFERA* (Franch.) Kunth.

A low, densely hairy perennial herb with primroselike flowers, native to China. The linear-obovate leaves, 3 inches long, are in rosettes, and the numerous purple flowers are in dense clusters on scapes 10 inches high.

99830. G. F. 40.

99832. G. F. 30323.

99831. G. F. 385.

99833. G. F. 30329.

99834. *ANDROSACE* sp.

G. F. 44. Related to *A. chamaejasme*.

- 99835 to 99840. *ASTER* spp. Asteraceae.

99835. *ASTER STANCEPOLIUS* Franch.

F. 30625. An aster from high altitudes in southwestern China. The stems, about a foot long, are often decumbent, and the oblong-spatulate leaves are more or less basal. The flower heads have yellow disk flowers and violet-blue rays.

99836. *ASTER* sp.

F. 30627.

99837. *ASTER* sp.

F. 30636.

99838. *ASTER* sp.

F. 30637.

99839. *ASTER* sp.

F. 30644.

99840. *ASTER* sp.

F. 30659.

99841. *ASTILBE RUBRA* Hook. f. and Thoms. Saxifragaceae.

F. 30438. A perennial herb 4 to 6 feet high, native to India, with stems and leaves covered with long fulvous hairs. The biternate leaves have obliquely cordate-ovate leaflets 1 to 3 inches long, and the small rose-red flowers are borne in robust panicles.

99842. *CANNA INDICA* L. Cannaceae.

F. 30949.

99843. *CASSIOPE FASTIGIATA* (Wall.) D. Don. Ericaceae.

F. 30488. A beautiful free-flowering alpine shrub about 9 inches high, found in shady situations in moist, peaty, well-drained soil between 11,000 and 13,000 feet altitude. The tiny leaves are imbricated in four rows, giving the stem a four-sided appearance, and have white membranous ciliated margins. The solitary, white, bell-shaped flowers have the corolla segments recurved, showing the pink center and curious awned stamens like those of the arbutus.

For previous introduction see 49623.

## 99823 to 100103—Continued.

99844. *CASSIOPE SELAGINOIDES* Hook. f. and Thoms. Ericaceae.

F. 30651. A species which closely resembles *C. fastigiata*, but is readily distinguished by the much more slender stems and the longer pedicels. It is native to the alpine slopes of the Himalayas in Sikkim, India, between 10,000 and 13,000 feet altitude.

99845. *CLETHRA DELAVAYI* Franch. Clethraceae.

F. 30518. A Chinese shrub or small tree up to 50 feet high with red branchlets and oblanceolate leaves which are pubescent beneath. The fragrant white flowers differ from those of the American summersweet (*Clethra alnifolia*) in having red calyxes and in being in solitary axillary racemes, while the summersweet has the racemes grouped together to form a panicle.

For previous introduction see 78372.

99846. *CODONOPSIS MACROCALYX* Diels. Campanulaceae.

F. 30943. A twining shrub, 1 to 2 feet high, with membranous, ovate, irregularly crenate leaves 1 to 2 inches long. The green flowers, tinged with maroon at the base, are less than an inch long. Native to the high mountains of southwestern China.

99847. *CODONOPSIS TUBULOSA* Kom. Campanulaceae.

F. 30505. A twining perennial, native to grassy meadows in the mountains of Yunnan at 7,000 feet altitude. The nearly sessile leaves are ovate-lanceolate, and the small tubular white flowers are solitary on very short peduncles.

99848. *COLUBIA ELEGANS* Cardot. Rosaceae.

F. 30654. An alpine perennial, with a basal rosette of finely cut pinnate leaves 3 to 4 inches long and yellow flowers, nearly an inch across, on stems up to 8 inches high. Native to alpine meadows in Yunnan.

99849. *CORNUS CONTROVERSA* Hemsl. Cornaceae.  
Giant dogwood.

F. 30457. This Chinese dogwood is one of the most striking of the genus; in its native home it sometimes becomes a tree 60 feet in height with a trunk 7 feet in girth. The numerous long branches extend at right angles to the trunk, with the lowest sometimes touching the ground. The white or slightly yellow flowers are in flat clusters 6 or 7 inches in diameter, appearing from late May to early June. As fast as they ripen, the black shining fruits which follow are eaten by birds.

For previous introduction see 90789.

99850. *COTONEASTER* sp. Malaceae.

F. 30634. Closely related to *C. acuminata*.

99851 to 99855. *CREMANTHODIUM* spp. Asteraceae.

99851. *CREMANTHODIUM CAMPANULATUM* (Franch.) Diels.

F. 30450. A low hairy perennial alpine with thick long-stemmed reniform basal leaves somewhat 7- to 10-lobed and small linear stem leaves. The tubular yellow flowers are in nodding heads. Native to Yunnan.

99852 to 99854. *CREMANTHODIUM RHODOCEPHALUM* Diels.

An alpine composite, 3 to 9 inches tall, with long-stemmed, rounded-reniform leaves, purple beneath, and gray-pink ray florets. Native to limestone cliffs in Yunnan.

99852. F. 30448.

99854. F. 30523.

99853. F. 30511.

99855. *CREMANTHODIUM* sp.

F. 30507.

## 99823 to 100103—Continued.

99856. *CYANANTHUS LONGIFLORUS* Franch. Campanulaceae.

F. 30947. A many-stemmed perennial form about 3 inches high, having lanceolate entire leaves with revolute margins, and sky-blue tubular flowers nearly 2 inches long. Native to Yunnan.

99857. *DIAPENSIA PURPUREA* Diels. Diapensiaceae.

F. 30497. A low caespitose bushy evergreen shrub with small leathery glabrous oblong-spatulate leaves less than an inch long and small rose-purple flowers. Native to western China.

Forma *albida*; a white-flowered form.

99858 to 99860. *DIDISSANDRA* spp. Gesneriaceae.

99858. *DIDISSANDRA GRANDIS* Craib.

F. 30311. A perennial herb about 10 inches high, with a rhizome half an inch thick. The flat leathery lanceolate leaves 2 to 4 inches long are in a rosette. The purple-blue and white flowers, less than an inch long, are in small clusters on stalks 6 inches high. Native to rocky places on the Chungtien Plateau, southwestern China.

For previous introduction see 93888.

99859 and 99860. *DIDISSANDRA SERICEA* Craib.

A rock plant with blue flowers and leaves forming rosettes.

For previous introduction see 83982.

99859. F. 30609.

99860. F. 30615.

99861. *DIPLARCHE MULTIFLORA* Hook. f. and Thoms. Ericaceae.

F. 30453. A low alpine shrub native to the Sikkim Himalayas in India, at an altitude of 11,000 feet. The crowded leathery linear-oblong leaves are less than one fourth of an inch long, and the small tubular rosy flowers are borne in dense clusters of 8 to 20 at the ends of the branches.

99862 and 99863. *ENKLIANTHUS DEFLEXUS* (Griffith) C. Schneid. Ericaceae.

The whorled branches of this Himalayan shrub are characteristic of the entire genus and give the plant a peculiar appearance. The branchlets are red, and the margins and petioles of the obovate leaves, 1 to 3 inches long, are red when the leaves are young. The flowers, produced in dense drooping racemes, have yellow corollas, striped dark red with darker lobes.

For previous introduction see 93207.

99862. F. 30464.

99863. F. 30465.

99864. *EUPTELEA PLEIOSPERMA* Hook. f. and Thoms. Trochodendraceae.

F. 30481. A tree 30 to 40 feet high, native to Tibet, with ovate-crenate leaves which are glaucous beneath and have very long acuminate tips. The slender-stalked, red flowers, in axillary fascicles, appear before the leaves.

For previous introduction see 94002.

99865 to 99875. *GENTIANA* spp. Gentianaceae.

99865. *GENTIANA DETONSA* Rottb. Gentian.

G. F. 65. A biennial gentian, with a very short stem and oblong leaves arranged more or less in a basal rosette. The flowers, borne singly, are deep blue with the corolla lobes waxy at the tips. It is native to the cold regions of northwestern China and is related to *G. crinita*.

For previous introduction see 79237.

## 99823 to 100103—Continued.

99866 and 99867. *GENTIANA PHYLLOCALYX* C. B. Clarke.

A low alpine herb, 1 to 5 inches high, native to the slopes of the Himalayas in Sikkim, India, between 13,000 and 15,000 feet altitude. The obovate leaves are less than an inch long, and the tubular blue flowers, 1 to 2 inches long, are inflated in the middle and contracted at the mouth.

99866. G. F. 58. 99867. G. F. 59.

99868 and 99869. *GENTIANA STYLOPHORA* C. B. Clarke.

For previous introduction and description see 99663.

99868. G. F. 61. 99869. F. 30766.

99870. *GENTIANA* sp.

G. F. 62.

99871. *GENTIANA* sp.

G. F. 63. Related to *G. phyllocalyx*.

99872. *GENTIANA* sp.

G. F. 64 (Chungtien).

99873. *GENTIANA* sp.

F. 30596. An annual.

99874. *GENTIANA* sp.

F. 30601. An annual.

99875. *GENTIANA* sp.

F. 31008. Closely related to *G. microdonta*.

99876. *ILEX VENULOSA* Hook. f. Aquifoliaceae. Holly.

F. 30479. A handsome tree native to the Khasia Hills in India. The elliptic-oblong glabrous leaves, 5 to 8 inches long, are abruptly contracted at the tip into a taillike appendage nearly 2 inches long. The crowded green-white flowers are followed by small red fruits.

99877. *INCARVILLEA GRANDIFLORA BREVIPES* Sprague. Bignoniaceae.

F. 30655. A low perennial herb native to Yunnan, China. The pinnately divided leaves, 1 foot long, are made up of ovate, nearly entire segments, and the brilliant crimson, trumpet-shaped flowers, 2 to 3 inches long, are borne in clusters of 8 to 12 on scapes a foot high.

99878. *INCARVILLEA LUTEA* Bur. and Franch. Bignoniaceae.

F. 30642. A perennial herb native to southwestern China at altitudes between 10,000 and 12,000 feet. The long-petioled radical leaves, 8 to 15 inches long, are pinnately divided into broad-lanceolate crenate segments, and the pendulous yellow flowers, 2 inches across, are borne in clusters of 6 to 20 on scapes 2 to 4 feet high.

For previous introduction see 69418.

99879. *INULA HOOKERI* C. B. Clarke. Asteraceae.

F. 30439. A simple or branched perennial herb native to the Sikkim Himalayas in India between 7,000 and 10,000 feet altitude. The shaggy stem is 1 to 2 feet high, with elliptic-lanceolate membranous leaves 3 to 5 inches long and terminal clusters of 1 to 3 sunflowerlike heads 1 to 2 inches across.

99880 to 99882. Iris spp. Iridaceae.

99880. *IRIS CHRYSOGAPHES* Dykes. Goldvein iris.

F. 30516. One of the handsomest of the beardless irises; the velvety dark-purple flowers are

## 99823 to 100103—Continued.

brightened by golden reticulations at the throat, running into a signal patch in the blade.

For previous introduction see 93902.

99881. *IRIS FORRESTII* Dykes. Yunnan iris.

F. 30626. An iris native to the Likiang Mountains, in Yunnan, between 12,000 and 13,000 feet altitude. The stem, 12 to 18 inches high, bears a single head of two flowers, although a lateral flowered branch sometimes develops. The short haft bears two central lines and broken lateral veins of brown-purple on a clear yellow ground. The oblong, ovate blade of the falls is often very long and drooping, of a clear lemon-yellow which becomes deeper around the end of the style branches, and is there marked with brown-purple veins. The oblanceolate yellow blade of the standards narrows to a deeply channeled yellow haft, shorter than the falls and slightly divergent. The broad, short-keeled deep-yellow styles, often discolored with purple, curve down onto the falls.

For previous introduction see 66577.

99882. *IRIS DELAVAYI* Michell. Delavay iris.

F. 30662. An iris 2 to 4 feet high, with violet and white flowers. Native to southwestern China.

For previous introduction see 91431.

99883. *ISOPYRUM GRANDIFLORUM* Fisch. Ranunculaceae.

F. 30629. A low alpine perennial herb native to the western Himalayas in India at altitudes between 13,000 and 17,000 feet. The densely tufted radical leaves, 3 to 4 inches long, are finely ternately divided into cuneate-obovate lobes, and the solitary white flowers, an inch across, are borne on scapes 3 to 4 inches high.

99884 to 99903. *LILIUM* spp. Liliaceae. Lily.

99884 to 99888. *LILIUM BAKERIANUM DELAVAYI* (Franch.) Wilson.

A bell-shaped lily native to alpine meadows between 8,500 and 11,500 feet altitude in Yunnan. The stems are 2 to 3 feet high, the sessile leaves, 2 to 3 inches long, are linear to lanceolate, and the fragrant nodding cream-white flowers, 2 to 4 inches long, are heavily spotted and splashed with reddish purple on the inside.

99884. F. 30167.

99888. F. 30181.

99885. F. 30172.

99887 and 99888. *LILIUM BROWNII COLCHESTERI* Wilson.

A trumpet-flowered lily, native throughout China from sea level to an altitude of 5,000 feet, often cultivated for the bulbs, which are considered a table delicacy. The stems are 3 to 4 feet high, and the fragrant flowers, 4 to 6 inches long, are rose purple outside and creamy white inside, with the reflexed ends of the segments pure white.

99887. F. 29898.

99888. F. 30144.

99889 to 99891. *LILIUM DUCHARTREI* Franch.

A lily of the section Martagon, native to alpine and subalpine regions of western China. The stems are 2 to 5 feet high, the scattered lanceolate leaves are 2 to 4 inches long, and the fragrant nodding marble-white flowers, spotted and lined with vinous purple, are borne in umbels of 1 to 12.

99889. F. 30138.

99891. F. 30162.

99890. F. 30140.

99892 and 99893. *LILIUM GIGANTEUM* Wall. Giant lily.

For previous introduction and description see 98740.

99892. F. 30151.

99893. F. 30168.

## 99823 to 100103—Continued.

99894. *LILIUM GIGANTEUM YUNNANENSE* Leichtlin.

F. 30143. A variety characterized by the dark stem, the horizontally spread leaves often tinged and blotched with brown purple, and the horizontally disposed flowers which are pure white outside. It is native to shady ravines and moist woods on the mountains of Hupeh and Yunnan.

99895 and 99896. *LILIUM HYACINTHINUM* Wilson.

An alpine lily, native to western China at altitudes between 10,000 and 12,000 feet. The stout erect shining-green stems are 3 to 4 feet tall, the scattered oblong-lanceolate leaves are 6 to 8 inches long, and the slightly fragrant, rose-lilac, funnel-shaped flowers, 1 to 2 inches long, are borne in racemes of 12 to 24.

99895. F. 29923. 99896. F. 30157.

99897 and 99898. *LILIUM NEPALENSE BURMANICUM* W. W. Smith.

A tall lily, 5 to 8 feet high, having a perianth intermediate between the Martagon and Eulirion sections and heavily blotched inside with purple.

For previous introduction see 95621.

99897. F. 29943. 99898. F. 29944.

99899. *LILIUM OCHRACEUM* Franch.

F. 30145. A rare and beautiful lily from Burma, not hardy in England except in the most favorable districts; it is an admirable cool greenhouse plant. This is a very variable species, producing flowers which range in color from deep golden yellow to pale yellow stained in varying degrees with deep wine purple.

For previous introduction see 95622.

99900 to 99902. *LILIUM TALIENSE* Franch.

A Martagon lily native to subalpine meadows in western China between 9,000 and 11,000 feet altitude. The stout gray-green stems, 3 to 5 feet high, are clothed with dense white scabrid pubescence, and the linear to lanceolate leaves are 2 to 4 inches long. The fragrant nodding purple-spotted white flowers, 2 inches long, are in subverticillate clusters of 2 to 12.

99900. F. 30156. 99902. F. 30176.

99901. F. 30161.

99903. *LILIUM* sp.

G. F. 68.

99904. *LONICERA HENYI* Hemsl. Caprifoliaceae. *Henry hameysackii*.

F. 30477. A vine, native to western China, with long dark-green leaves and axillary clusters of odorless flowers which are rose colored when they first open, but soon change to orange-red.

For previous introduction see 93909.

99905. *MAGNOLIA INSIGNIS* Wall. Magnoliaceae.

F. 30568. A large tree, native to India, with lanceolate coriaceous leaves 8 inches long and fragrant pink flowers followed by bright-purple fruits 3 to 4 inches long.

For previous introduction see 95624.

99906. *MALUS YUNNANENSIS* (Franch.) C. Schneid. Malaceae. *Apple*.

F. 30476. A tree up to 30 feet high, native to western China. The slightly cordate-ovate leaves, 3 to 6 inches long, are sharply doubly serrate, sometimes with 3 to 5 pairs of short lobes, and are tomentose beneath. The small white flowers are in dense clusters 2 inches across and are followed by subglobose red fruits one-half inch in diameter. The leaves turn orange and scarlet in the autumn.

## 99823 to 100103—Continued.

99907. *MALUS* sp. Malaceae. *Apple*.  
F. 30485 (near *M. theifera*).

99908 to 99943. *MECONOPSIS* spp. Papaveraceae.

99908 to 99910. *MECONOPSIS CONCINNA* Prain.

An attractive little alpine biennial with a rosette of small narrow deep-green leaves and deep purple-blue flowers nearly an inch across on numerous slender scapes 3 to 6 inches high. Native to southwestern China at high altitudes.

99908. F. 30088. 99910. F. 30113.

99909. F. 30106.

99911. *MECONOPSIS DELAVAYI* Franch.

F. 30080. A poppylike annual 6 to 10 inches high, with large drooping indigo-blue flowers; found in moist meadows on gravelly slopes between 11,000 and 12,500 feet altitude, usually in small groups or clumps.

For previous introduction see 58425.

99912 and 99913. *MECONOPSIS EXIMIA* Prain.

A very handsome poppylike biennial with nodding deep-blue-purple flowers with anthers of grayish yellow. It is found in open stony pastures in southwestern China at altitudes between 12,000 and 14,000 feet.

99912. F. 30084. 99913. F. 30085.

99914. *MECONOPSIS FORRESTII* Prain.

F. 30107. An alpine herb from southwestern China, covered throughout with yellow bristles. The small pale-green leaves are all basal, and the pale-blue flowers are in racemose cymes.

99915 to 99923. *MECONOPSIS HORRIDULA* Hook. f. and Thoms.

A low alpine perennial herb, native to the Sikkim Himalayas in India at altitudes between 14,000 and 17,000 feet. The lanceolate, nearly entire, petioled leaves are 3 to 5 inches long, and the blue-purple poppylike flowers, 1 to 2 inches across, are borne singly on scapes 4 to 8 inches high.

99915. F. 29934.

99916. F. 30089.

99917. F. 30092.

99918. F. 30093.

99919. F. 30099.

99920. F. 30100. A form with primrose flowers.

99921. F. 30104.

99922. F. 30105.

99923. F. 30112.

99924 to 99927. *MECONOPSIS IMPEDITA* Prain.

An alpine biennial, native to Yunnan, with ovate-lanceolate pinnately lobed deep-green basal leaves about 2 inches across and deep-blue flowers near and high across on numerous scapes 6 to 15 inches high.

99924. F. 30093.

99926. F. 30101.

99925. F. 30097.

99927. F. 30111.

99928 to 99935. *MECONOPSIS INTEGRIFOLIA* (Maxim.) Franch. *Yellow Chinese-poppy*.

A fine alpine plant over 2 feet high, found rather commonly at altitudes of 14,000 to 14,500 feet among limestone boulders. 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 95446.

99928. F. 30076.

99932. F. 30102. A large form.

99929. F. 30083.

99933. F. 30115.

99930. F. 30091.

99934. F. 30087.

99931. F. 30094. A form with long styles.

99935. F. 30108. A magnificent form.



## 99823 to 100103—Continued.

99936. *MECONOPSIS RUDIS* Prain.

F. 30079. An annual alpine plant 2 to 3 feet high, native to southwestern China at altitudes between 13,000 and 15,000 feet. The stems and leaves are covered with straw-colored spreading spines, the nearly entire leaves are oblong-lanceolate, and the bright-blue flowers, in racemes 2 to 3 inches across, have numerous stamens with blue filaments and yellow anthers.

99937. *MECONOPSIS SPECIOSA* Prain.

F. 30103. An alpine perennial up to 3 feet high, with spiny oblong-lanceolate leaves and light-blue flowers 2 inches across in racemose 10- to 15-flowered cymes. Native to Yunnan.

99938 and 99939. *MECONOPSIS VENUSTA* Prain.

A charming alpine biennial with deep-purple to wine-colored flowers with orange anthers and roundish petals an inch long. The numerous scapes are 6 to 8 inches high, and the oblong-ovate leaves are in a basal rosette. Native to Yunnan.

99938. F. 30078.

99939. F. 30114.

99940. *MECONOPSIS* sp.F. 30086 (near *M. lepida*).99941. *MECONOPSIS* sp.F. 30110 (near *M. lancifolia*).99942. *MECONOPSIS* sp.F. 30117 (near *M. lancifolia*).99943. *MECONOPSIS* sp.

G. F. 144.

99944. *NEILLIA SINENSIS* Oliver. Rosaceae.  
Tube neillia.

F. 30475. A shrub 4 to 6 feet high, native to central China. The ovate leaves, 2 to 3 inches long, are incised-serrate and usually lobed, and the tubular pink flowers, less than an inch long, are in terminal racemes 2 to 3 inches long.

99945 to 99962. *NOMOCHARIS* spp. Liliaceae.99945. *NOMOCHARIS APERTA* (Franch.) Smith and Evans.

F. 30148. An erect alpine plant about a foot high, with a slender rhizome and small lanceolate leaves, often ternate at the upper end of the stem. The pink flowers, purplish punctate within, are at first nodding, then erect. Native to high altitudes near Tali, Yunnan.

99946. *NOMOCHARIS EUXANTHA* Smith and Evans.

F. 30155. A bulbous alpine plant 6 to 15 inches high, with linear-lanceolate leaves over an inch long and solitary nodding fragrant golden-yellow flowers spotted with purple. Native to western China.

99947. *NOMOCHARIS HENRICI* (Franch.) Wilson.

F. 30158. A lilylike plant with a slender stem 3 feet or more high with scattered linear-lanceolate, long-pointed leaves and axillary flowers 2 inches long, with a white or pinkish bell-shaped perianth, dusky red at the base. Native to Yunnan.

99948 to 99953. *NOMOCHARIS LOPEOPHORA* (Bur. and Franch.) Balf. f.

A bulbous plant with ovate to lanceolate leaves about 3 inches long and yellow somewhat lilylike flowers, often red punctate, borne singly on a scape 6 to 12 inches high.

For previous introduction see 93384.

99948. F. 30139.

99951. F. 30165.

99949. F. 30163,  
speckled.

99952. F. 30182.

99950. F. 30164.

99953. F. 30170.

## 99823 to 100103—Continued.

99954 to 99957. *NOMOCHARIS MAIREI* Levilée.

A white-flowered, lilylike plant scarcely 2 feet high, with ovate verticillate leaves. Native to southwestern China.

99954. F. 30142.

99956. F. 30149.

99955. F. 30171.

99957. F. 30169.

99958. *NOMOCHARIS MELEAGRINA* Franch.

F. 30154. A large bulbous lilylike plant several feet high, native to the mountains of Szechwan. The linear-lanceolate leaves are long stemmed, and the rosy, brown-spotted flowers, 3 inches across, are on peduncles 6 inches long.

99959. *NOMOCHARIS NANA* (Klotzsch) Wilson.

F. 30152. A Himalayan lily about 6 inches high, with grasslike leaves 3 inches long and a small white nodding flower over an inch across.

99960 and 99961. *NOMOCHARIS PARDANTHINA* FARRERI W. E. Evans.

A plant about 2 feet high, with whorls of dark-green lanceolate leaves and from 1 to 10 rose-pink to white flowers of variable shade, color, and spotting. Native to alpine slopes among dwarf bamboos in Upper Burma. It differs from the type in having fimbriate inner perianth segments.

99960. F. 29815.

99961. F. 29942.

99962. *NOMOCHARIS* sp.F. 384. Closely related to *N. saluenense*.99963. *OSBECKIA CAPITATA* Benth. Melastomaceae.

F. 30952. A perennial herb 1 to 2 feet high, native to India. The cordate to ovate leaves, 1 inch long, are hairy on both sides, and the mauve flowers, 1 inch across, are in heads.

99964. *PERANTHA* sp. Gesneriaceae.

F. 30612. The peranthas are perennial herbs with the leaves all in a basal rosette and yellow flowers on a pilose peduncle. Three species are known from Yunnan—*P. minor*, *P. Forrestii*, and *P. cordatula*.

99965. *PHILADELPHUS DELAVAYI* L. Henry.  
Hydrangeaceae. Mockorange.

F. 30619. A shrub 15 to 20 feet high, native to Yunnan. The remotely serrate ovate leaves, 2 to 4 inches long, are dark green above and gray tomentose beneath. The very fragrant flowers, nearly 2 inches across, have a violet-purple calyx and white petals slightly tinged with purple on the outside, and are borne in racemes.

99966. *PHOTINIA PRIONOPHYLLA* (Franch.) C. K. Schneid. Malaceae.

F. 30474. A shrub 3 to 4 feet high, with the habit of *Photinia arbutifolia*. The branches are white tomentose, the ovate leathery shining green leaves are about 3 inches long, and the small flowers are in corymbose cymes. Native to southwestern China.

99967. *POLYGONUM CALOSTACHYUM* Diels. Polygonaceae.

F. 30451. An alpine plant 1 to 2 feet high, with elliptic papery long-petioled basal leaves 2 to 3 inches long, shorter-petioled stem leaves, and deep crimson flowers. Native to moist mountain meadows at 10,000 feet altitude in southwestern China.

99968 to 99974. *POTENTILLA* spp. Rosaceae.99968. *POTENTILLA FRUTICOSA* L.

Shrubby cinquefoil.

F. 30442. A pale form.

## 99823 to 100103—Continued.

99966 and 99970. *POTENTILLA FRUTICOSA*  
VEITCHII (Wils.) Bean. Veitch cinquefoil.

A very fine form from Hupeh, with silky hairy gray-green leaves and white flowers.

99969. F. 30621. 99970. F. 30623.

99971 to 99973. *POTENTILLA FRUTICOSA* L.  
Shrubby cinquefoil.

99971. F. 30622. A form with yellow flowers.

99972. F. 30624. A form with orange-yellow flowers.

99973. F. 30649. A dwarf variety.

99974. *POTENTILLA SAUNDERSIANA* Royle.  
Cinquefoil.

F. 30607. A dwarf alpine perennial herb native to Tibet. The palmately 3- to 5-foliolate leaves have deeply incised leaflets less than an inch long, white tomentose beneath. The yellow flowers, in corymbs, are about one half inch across.

99975. *POPULUS* sp. Salicaceae. Poplar.

F. 30646.

99976 to 100086. *PRIMULA* spp. Primulaceae.  
Primrose.

99976. *PRIMULA AEMULA* Balf. and Forr.

F. 30211. A stout alpine primula 2 feet or more in height, of the section Maximowiczii. The narrow oblong-obovate, somewhat fleshy leaves are up to a foot long, and the bright-yellow flowers are on a stout scape over 2 feet high. Native to Yunnan, at an altitude of about 11,000 feet.

99977 and 99978. *PRIMULA AMETHYSTINA*  
Franch.

An alpine primula from southwestern China with papery, ovate-oblong leaves an inch long, and amethyst-colored flowers, half an inch across, in small umbels, on scapes 2 to 4 inches high.

99977. F. 30186. 99978. F. 30198.

99979 and 99980. *PRIMULA ANISODORA* Balf. and Forr.

A primrose about a foot and a half high, native to Yunnan, with broadly oval membranous leaves up to 8 inches long and whorls of aromatic flowers which are rich maroon crimson with a bright-yellow zone. This primrose belongs to the section Candelabra.

99979. F. 30217. 99980. F. 30272.

99981. *PRIMULA AURANTIACA* W. W. Smith.

F. 30293. A Chinese primrose of the section Candelabra, with a rosette of large serrate leaves 6 to 9 inches long and whorls of orange-yellow flowers on a spike nearly a foot high. Native to marshy places in southwestern China.

99982. *PRIMULA BATHANGENSIS* Petitm.

A Chinese primrose with heart-shaped, intensely green leaves and numerous clusters of yellow flowers borne on weak scapes.

99983. *PRIMULA BEESIANA* Forrest.

F. 30304. A remarkable free-flowering and hardy primrose found growing close to the snow line in the mountainous parts of Yunnan. Under favorable circumstances the scape rises to a height of over 3 feet, and produces, in the early summer, its whorls of showy glowing velvety purple flowers with conspicuous yellow eyes.

For previous introduction see 93925.

99984. *PRIMULA BEESIANA* × *BULLEYANA*.

A natural hybrid.

## 99823 to 100103—Continued.

99985 and 99986. *PRIMULA BREVIFOLIA* Forrest.

A Chinese primrose with a rosette of bright-green oblong leaves from which rises a purplish scape that ends in a cluster of half a dozen or more drooping flowers; each has a dark-purple calyx and a blue-purple corolla.

99985. F. 30235. 99986. F. 30263.

99987. *PRIMULA BRYOPHILA* Balf. and Forr.

F. 29925. A Burmese primula with somewhat strap-shaped leaves up to 6 inches long, with the lower surfaces densely yellow farinose. The purplish flowers are on a slender scape about 3 inches high. It belongs to the section Nivalis.

99988. *PRIMULA BULLEYANA* Forrest.

F. 30307. A beautiful primrose from Yunnan, where it grows between 9,000 and 11,000 feet altitude, almost up to the snow line. It is a stout plant and in the early summer is covered with splendid orange-scarlet flowers; the stems of these flowers are sometimes 20 inches long. The plant prefers a semi-shaded damp situation.

99989. *PRIMULA BURMANICA* Balf. and Ward.

A stout moisture-loving Candelabra primrose from western China with oblanceolate leaves up to a foot long and red-purple flowers borne on a scape 2 feet high.

For previous introduction see 95385.

99990 to 99994. *PRIMULA CALLIANTHA* Franch.

A primrose 4 to 9 inches high, found in most open situations in western China from 12,000 to 14,000 feet altitude. The linear-lanceolate leaves are glabrous, thin, and green, and the fragrant flowers vary in color from rose lavender to rich purple.

99990. F. 30194. 99993. F. 30227. A fine form.

99991. F. 30201. 99994. F. 30244.

99992. F. 30215.

99995. *PRIMULA CERNUA* Franch.

F. 30666. Closely allied to *P. pinnatifida*, from which it differs in having broadly ovate leaves with scarcely crenulate margins and blue flowers. It is native to Yunnan.

99996. *PRIMULA CHIONANTHA* Balf. and Forr.

F. 30199. A stout herbaceous plant 1 to 2 feet high, with blunt narrowly oval leaves, sulphur farinose beneath, and clusters of white flowers borne in a many-flowered umbel at the apex of a stout scape. It does best in rich moist soil.

99997. *PRIMULA CHLORODRYAS* W. W. Smith.

F. 30232. A dwarf alpine primula of the *Dryadifolia* series, from Yunnan, with a dense rosette of ovate leaves less than an inch long which have yellow farinose lower surfaces and pale-yellow flowers on slender scapes 2 inches high. It is closely related to *P. dryadifolia* Franch.

99998 to 100000. *PRIMULA CHUNGENSIS* Balf. and Ward.

A primrose from Yunnan, with oval-oblong hairy leaves about 2 inches long and fragrant yellow flowers on a stout scape 18 inches high. It belongs to the section Candelabra.

99998. F. 30203. 100000. F. 30288.

99999. F. 30245.

100001. *PRIMULA CONICA* Balf. and Forr.

F. 30212. A hairy primula with oblong or oblanceolate leaves about 6 inches long and blue-purple flowers less than an inch long on a scape a foot high. Native to open pastures in Yunnan and a typical member of the section Muscarioides.

## 99823 to 100103—Continued.

100003 to 100004. *PRIMULA DRYADIFOLIA* Franch.

A rather uncommon primrose which forms cushions in moist rocky places on the eastern slopes of the Likiang Snow Range, Yunnan, at 15,000 feet altitude. The somewhat shrubby plant is only 4 or 5 inches high, with small spatulate leaves, golden below, and long scapes bearing clusters of 3 to 15 nearly sessile flowers varying in color from violet to dark purple and from rose to rich crimson.

100003. [No data.] 100004. F. 30298.

100003. F. 30230.

100005. *PRIMULA DUBERNARDIANA* Forrest.

F. 30269. A handsome primula from southwestern Tibet where it forms dense cushions, 1 to 2 feet in diameter, in dry situations on the ledges and in the clefts of mountain cliffs at altitudes between 8,000 and 9,000 feet. The flowers are a beautiful shade of pale rose with a bright yellow eye.

100006. *PRIMULA ELEGANS* Duby.

F. 30344. A primula from the mountains of Kashmir, with oblanceolate glabrous crenate leaves and large lilac flowers in clusters of 3 to 8 on a slender scape.

100007. *PRIMULA EUOSMA* Craib.

F. 29662. A dwarf primula with a rather dense rosette of elliptic or obovate rounded leaves an inch or more long and fragrant flowers of a soft purple-rose color with a green-yellow eye on a scape 2 to 4 inches high. Native to Yunnan.

100008. *PRIMULA FABRERIANA* Balf. f.

F. 29646. A stout alpine perennial, farinose throughout, with long-stemmed spatulate leaves up to 9 inches long and small dark-purple fragrant flowers on a stout scape about 10 inches high. It is native to dark cold gullies in Kansu, and belongs to the section Nivalis.

100009 to 100012. *PRIMULA FLORIDA* Balf. and Forr.

A perennial herb, native to Yunnan, with ovate leaves, farinose beneath, which are spread flat on the ground. The scape bears an umbel of short-stalked purple-blue flowers with farinose chalice.

100009. F. 30216. 100011. F. 30275.

100010. F. 30242. 100012. F. 30312.

100013. *PRIMULA FORRESTII* Balf. f.

A handsome perennial primula from the mountains of northwestern Yunnan between 9,000 and 11,000 feet altitude, in dry sunny situations. The woody rootstock is said to live over 50 years, the large basal leaves are covered with glandular hairs and have the odor of apples, and the rich orange-yellow flowers are in large umbels.

100014. *PRIMULA FRANCHETH* Pax.

A plant found in moist rocky situations on mountain meadows between 10,000 and 12,000 feet altitude in southeastern Tibet.

100015. *PRIMULA GLACIALIS* Franch.

F. 30204. An attractive Chinese primula with a thick elongated rhizome, oblong-lanceolate obtuse leaves an inch long with white farinose undersurfaces, and violet flowers half an inch long on short peduncles 1 or 2 inches high. Native to Yunnan.

100016. *PRIMULA GRACILENTA* Dunn.

F. 30268. A perennial herb native to Yunnan. The petioled oblong leaves with irregularly wavy dentate margins are in a rosette from which arise the slender scapes 6 to 18 inches

## 99823 to 100103—Continued.

high. The deflexed lilac flowers, borne in a head, have a cylindrical corolla tube with oblong lobes each terminated by a short tail, giving a fringed effect.

100017. *PRIMULA HELODOXA* Balf.

A large Chinese primrose of the section Candellabra, with flower stalks like those of *P. japonica*, about 3 feet high, which have 7 or 8 tiers of soft-yellow flowers resembling in color and size those of *Jasminum primulinum*. It requires a moist but well-drained site.

For previous introduction see 92500.

100018. *PRIMULA LEPTA* Balf. and Forr.

F. 30273. A small delicate primula of the section Muscarioides, with a rosette of papers oblanceolate or oblong leaves about 2 inches long and deep-purple flowers less than an inch across on a fragile scape about 3 inches high. Native to Yunnan.

100019 and 100020. *PRIMULA LEUCOCHNOA* Hand.-Mazz.

An alpine primula of the section Nivalis, from southwestern China, with small linear-lanceolate somewhat fleshy leaves 5 to 8 inches long and purple flowers half an inch long on scapes about a foot high.

100019. F. 30286. 100020. F. 30290.

100021 to 100024. *PRIMULA LICHANGENSIS* Forrest.

A handsome primrose of the section Cortusoides, from southwestern China, where it reaches a height of 6 to 14 inches, growing on ledges and boulders in dry shady places. The foliage is very variable, and the fragrant flowers vary from rose to almost crimson with green-yellow eyes.

100021. F. 30209. 100023. F. 30253.

100022. F. 30250. 100024. F. 30300.

100025 and 100026. *PRIMULA LITTONIANA* Forrest.

A handsome plant of the section Muscarioides, 2 to 3 feet tall, growing in swampy meadows in southwestern China between 10,000 and 11,000 feet altitude. The gray-green hairy leaves form a rosette from which arise the scapes bearing pendent deep indigo-blue flowers in densely packed spikes sometimes 5 inches long. The blood-red bracts and calyxes of the flowers form a wonderful contrast to the blue flowers.

100025. F. 30249. 100026. F. 30299.

100027. *PRIMULA MALVACEA* Franch.

F. 30255. A primrose from the mountains of Yunnan, densely covered with short hairs; the bright-green leaves are about 3 inches long, and the thick scapes bear 2 or 3 umbels of reddish flowers.

100028 and 100029. *PRIMULA MINOR* Balf. and Ward.

A semialpine primula of the section Pulchella, native to open mountain slopes in dry situations in southwestern China. The broadly oblong-spatulate leaves are only 2 inches long, and the small violet flowers are borne on a scape about 2 inches high.

100028. F. 30338. 100029. F. 30343.

100030. *PRIMULA MULIENSIS* Hand.-Mazz.

F. 30257. A glabrous alpine primula with narrowly obovate acute leaves about 10 inches long, light green and somewhat fleshy, and pale-violet flowers, very fragrant, on a stout scape nearly 2 feet high. Native to Szechwan.

## 99823 to 100103—Continued.

100081 to 100084. *PRIMULA MUSCARIOIDES* Hemsl.

A primrose with rather fleshy light-green leaves 4 to 5 inches long. The scapes, twice as long as the leaves, bear heads of deep purple-blue or almost violet flowers. Native to moist open places on the edges of forests in Yunnan.

100081. F. 30234. 100083. F. 30274.

100082. F. 30266. 100084. F. 30291.

100085. *PRIMULA PINNATIFIDA* Franch.

F. 30318. A hardy alpine primula 3 to 10 inches high, native to Yunnan, where it is found in swampy alpine meadows between 12,000 and 15,000 feet altitude. The thin leaves are pinnatifid, and the spikes of beautiful bright-blue fragrant flowers are produced as soon as the snow disappears.

100086 to 100040. *PRIMULA POISSONI* Franch.

A glabrous primula with narrow-oblong, rather regularly serrate leaves and purplish flowers in whorls. Native to Yunnan.

100086. F. 30196.

100087. F. 30225.

100088. F. 30303.

100089. F. 30233. Variety *planiflora*.100040. F. 30265. Variety *planiflora*.100041 to 100043. *PRIMULA POLYNEURA* Franch.

A perennial primula with suborbicular, crenate-lobed leaves 1 to 3 inches long and scapes 4 to 16 inches tall, bearing umbels of purple flowers about half an inch across. It is native to central China.

For previous introduction see 93929.

100041. F. 30254. 100043. F. 30311.

100042. F. 30287.

100044 and 100045. *PRIMULA PULCHELLA* Franch.

A handsome primrose growing in limestone soil in rather moist meadows up to 11,000 feet altitude in Yunnan. The lanceolate leaves are yellowish beneath, and the large flowers are bluish purple.

100044. F. 30262. 100045. F. 30320.

100046. *PRIMULA PULCHELLOIDES* F. K. Ward.

F. 30310. A perennial herb native to Yunnan. The narrowly lanceolate leaves, 1 to 3 inches long, have revolute denticulate margins, and the stiff scapes, 6 to 9 inches high, bear umbels of light-violet flowers one half inch across.

100047. *PRIMULA RIGIDA* Balf. and Forr.

F. 30241. A purple-flowered primula with firm oblong-spatulate leaves 2 inches long, densely farinose beneath. The purple flowers, one half inch long, are on a stout rigid scape more than 2 inches high. A member of the section *Nivalis* and native to the Muili Mountains, Szechwan.

100048 and 100049. *PRIMULA ROCKII* W. W. Smith.

A small woody primula at 10,000 feet altitude in southwestern China. It is related to the section *Bullatae*, to which *P. forrestii* belongs, but very distinct from it. The leaves are smaller and darker green, and the large deep-orange flowers are single, on short peduncles, and droop.

For previous introduction see 95388.

100048. F. 30280. 100049. F. 30339.

## 99823 to 100103—Continued.

100050 to 100053. *PRIMULA SECUNDFLORA* Franch.

A very fine perennial primula found on alpine meadows up to 15,000 feet altitude, almost the snow line, in southwestern China. When young, the ovate-oblong finely serrulate papery leaves, 2 to 4 inches long, are golden farinose beneath, and the stout scape, 8 to 14 inches high, bears a one-sided, 6- to 10-flowered umbel of flowers nearly an inch across which vary in color from bright violet to rich reddish purple.

100050. F. 30219. 100052. F. 30315.

100051. F. 30283. 100053. [No data.]

100054 to 100056. *PRIMULA SERRATIFOLIA* Franch.

A very attractive primula, native to western China, where it grows along the banks of streams. The leaves are bright green, and the lovely yellow flowers are striped with orange.

100054. F. 30193.

100055. F. 30224. A very fine form.

100056. F. 29886.

100057 to 100061. *PRIMULA SIKKIMENSIS* Hook.

A primrose found in moist meadows and along streams in the Himalayas at 13,000 feet altitude. The lanceolate drooping leaves are dull green on both sides, and the large bell-shaped rich-yellow flowers, on stalks up to 2 feet high, appear in June. It has the habit of *P. secundiflora*, and should be treated as a short-lived perennial.

For previous introduction see 93930.

100057. F. 30222. 100060. F. 30289.

100058. F. 30277. 100061. F. 30292.

100059. F. 30278.

100062. *PRIMULA SINOLISTERI* Balf. f.

A Chinese primrose of the type of *P. obconica*, which promises to be of horticultural value, since it does not have the irritant hairs. The acutely lobed leaves form compact masses, and the many trusses of flowers vary from white to lilac in color.

100063 to 100065. *PRIMULA SINOPLANTAGINEA* Balf. f.

A Chinese primula of the section *Nivalis*, native to Yunnan. The acute lanceolate leaves are yellow-farinose beneath, and the deep-purple flowers are on a thick scape 5 inches high.

100063. F. 30206. 100065. F. 30220.

100064. F. 30213.

100066 to 100070. *PRIMULA SINOPURPUREA* Balf. f.

This, one of the most striking primroses of the section *Nivalis*, is a stout herbaceous plant from 4 inches to 3 feet high, growing in acid soil in boggy meadows up to 14,000 feet altitude in southwestern China. The thin papery narrow leaves are bright green above and golden yellow beneath, and the large dense umbels of rich-purple or violet flowers appear in April and May.

100066. F. 30200. 100069. F. 30243.

100067. F. 30205. 100070. F. 30316.

100068. F. 30223.

## 99823 to 100103—Continued.

100071 and 100072. *PRIMULA SONCHIFOLIA* Franch.

A primrose with obovate-oblong, doubly sinuate, papery leaves 6 to 8 inches long, native to southwestern China. The simple umbel of short-campanulate violet flowers is borne on a globose scape as long as the leaves.

For previous introduction see 93390.

100071. F. 30279. 100072. [No data.]

100073 and 100074. *PRIMULA SOULII* Franch.

A Chinese primula, native to Szechwan, with long-stemmed, ovate-obtuse, crenulate leaves about an inch long and purple-violet flowers less than an inch long, on a scape 3 to 5 inches high.

100073. F. 30341. 100074. F. 30342.

100075 to 100077. *PRIMULA SZECHUANICA* Pax.

A glabrous perennial herb, native to central China, with thin ovate-oblong slightly dentate leaves 2 to 3 inches long. The stout scape, 8 inches high, bears an umbel of 5 to 10 nodding yellow flowers about half an inch across with reflexed lobes.

100075. [No data.] 100077. F. 30285.

100076. F. 30287.

100078. *PRIMULA VINCIFLORA* Franch.

F. 30334. A perennial primrose, native to China, and found in moist shady meadows at 12,000 feet altitude. The thin papery oblong dull-green leaves, covered with reddish glands, are all erect, or nearly so, forming a narrow erect crown. The scapes, up to 15 inches high, bear solitary purple-violet, vinca-like flowers, 1 to 2 inches across.

For previous introduction see 93933.

100079. *PRIMULA VITTATA* Bur. and Franch.

F. 30240. A Chinese herbaceous perennial primrose with narrow leaves 6 inches long and purple flowers borne on a stout scape 8 inches high.

100080. *PRIMULA WILSONI* Dunn.

F. 30191. An aromatic perennial herb native to Yunnan. The bright-green lanceolate leaves, 6 to 8 inches long, are recurved, and the small rose flowers have short rounded crenulate lobes.

100081 to 100084. *PRIMULA YARGONGENSIS* Pettitt.

A primrose from eastern Tibet, with ovate-oblong obtuse leaves 1 to 2 inches long and 1 to 3 deep-lilac flowers on a thick scape 4 inches high.

For previous introduction see 93932.

100081. F. 30238. 100083. F. 30282.

100082. F. 30261. 100084. F. 30306.

100085. *PRIMULA YUNNANENSIS* Franch.

F. 30210. A dwarf alpine primrose native to Yunnan. The obovate leaves are less than one-half inch long, and the 1 or 2 purple flowers, an inch across, are borne on a scape only 2 or 3 inches high.

100086. *PRIMULA* sp.

F. 30665. A primrose near *P. malvacea*.

100087 to 100089. *RHODODENDRON* spp. Ericaceae.

100087. *RHODODENDRON CHRYSSEUM* Balf. and Ward.

F. 30642. A small shrub, 1 to 3 feet high, with densely scaly branchlets, native to Yunnan. The ovate-elliptic leaves, one-half inch long, are scaly on both sides and are aromatic. The

## 99823 to 100103—Continued.

bright-yellow openly campanulate flowers are one-half inch across and are borne in terminal clusters of 4 or 5.

100088. *RHODODENDRON* sp.

F. 30041. Series Lappouicum.

100089. *RHODODENDRON MOLLISSIMUM* Balf. and Smith.

F. 30940. A small shrub with softly pubescent branchlets, native to Yunnan. The narrowly lanceolate leaves, 1 to 2 inches long, are softly pubescent on both sides, and the narrowly tubular crimson flowers are in small axillary clusters near the ends of the branchlets.

100090. *ROETTLEA FORBESII* Diels. Gesneriaceae.

F. 30617. An alpine plant with a basal rosette of densely hairy narrow ovate leaves 3 to 5 inches long, and small canary-yellow flowers, one-third inch across, on scapes 3 to 9 inches high. Native to mossy boulders in very shady places in Yunnan.

100091 to 100093. *SORBUS* spp. Malaceae.

Mountain-ash.

100091. *SORBUS* sp.

F. 30492. A mountain-ash near *S. vestita*.

100092. *SORBUS* sp.

F. 30509.

100093. *SORBUS* sp.

F. 30635.

100094. *SPRAEA CANESCENS* GLAUCOPHYLLA Franch. Rosaceae.

F. 30620. A white-flowered shrub, native to Yunnan, with broadly obovate leaves and many-flowered corymbs.

100095. *SYMPLOCOS PANICULATA* Miquel. Symplocaceae.

F. 30458. A shrub or small tree up to 35 feet high, native to China and Japan. The obovate sharply serrulate leaves are 1 to 3 inches long, the fragrant white flowers are in panicles 2 to 4 inches in length, and the bright-blue ellipsoid fruits are nearly half an inch long.

For previous introduction see 93963.

100096. *SYRINGA YUNNANENSIS* Franch. Oleaceae. Yunnan lilac.

F. 30486. A handsome shrub of open spreading growth, related to *Syringa wilsonii*, but with pale-pink flowers in large panicles. The downy leaves have a distinct red midrib, the color being continued through the leafstalk. It is native to China.

For previous introduction see 91834.

100097. *TETRACENTRON SINENSE* Oliver. Magnoliaceae.

F. 30489. A tree up to 100 feet high, native to western and central China. The elliptic-ovate leaves, 3 to 5 inches long, are subcordate with closely serrulate margins, and the minute yellowish flowers are in racemes 4 to 8 inches long.

100098. *THERMOPSIS* sp. Fabaceae.

F. 30630. A form near *T. inflata*.

100099 to 100101. *TROLLIUS* spp. Ranunculaceae.

100099. *TROLLIUS PUMILUS* D. Don. Dwarf globeflower.

F. 30647. An alpine herbaceous perennial 1 foot high, native to the Himalayas in India. The thick orbicular leaves, 1 to 2 inches across, are five-parted into broadly three-lobed segments, and the solitary yellow flowers are 1 inch across.

## 99823 to 100103—Continued.

100100 and 100101. *TROLLIUS YUNNANENSIS* (Franch.) Ulbr. Yunnan globeflower.

A large stout perennial, native to Yunnan, about 2 feet high, with trilobate-reniform, long-stemmed basal leaves with blades 3 inches long and yellow flowers 1 to 2 inches across.

100100. F. 30506. 100101. F. 30643.

100102. *VIBURNUM FLAVESCENS* W. W. Smith. Caprifoliaceae.

F. 30678. A shrub 6 to 10 feet high, native in dry places in the mountains of Yunnan. The rhomboid-ovate leaves are 2 to 3 inches long, with serrate margins, and the fragrant deep cream-yellow flowers are in terminal corymbs about 2 inches across. It is closely allied to *Viburnum ovalifolium*.

100103. *XOLISMA OVALIFOLIA* (Wall.) Rehd. Ericaceae.

F. 30437.

For previous introduction and description see 99759.

100104 and 100105. *PHOENIX RECLINATA* Jacq. Phoenicaceae.

## Senegal date palm.

From Africa. Seeds presented through the Royal Botanic Gardens, Kew, England. Received June 14, 1932.

A tropical and South African date palm, 20 to 30 feet high, with green reclinate pinnate leaves 6 to 9 feet long with rigid leaflets and yellowish fruits half an inch long with a sweetish pulp.

For previous introduction see 82686.

100104. From Bathurst, Gambia, Africa.

100105. From Zomba, Nyasaland, Africa.

100106. *ANANAS SATIVUS* Schult. f. Bromeliaceae. Pineapple.

From the West Indies. Plants presented by G. W. Ford, Haytian Pineapple Co., Cape Haitien, Haiti. Received June 14, 1932.

*Smooth Cayenne.*

## 100107 to 100113.

From Australia. Seeds presented by the experiment farm at Bathurst, at the request of the Department of Agriculture, Sydney, New South Wales. Received June 10, 1932.

A collection of forage grasses introduced for the use of Department specialists.

100107 to 100109. *DACTYLIS GLOMERATA* L. Poaceae. Orchard grass.

100107. *Scandia cocksfoot*; originally from Sweden.

100108. No. 2; from Wales.

100109. Originally from Spain.

100110 to 100112. *LOLIUM PERENNE* L. Poaceae. Perennial ryegrass.

100110. Originally from Spain.

100111. An evergreen form; originally from Scotland.

100112. *Victoria* ryegrass; originally from Sweden.

100113. *PHALARIS TUBEROSA* L. (*P. stenophylla* Hort.). Poaceae. Grass.

For previous introduction see 99332.

100114 to 100118. *CINCHONA* spp. Rubiaceae.

From British India. Seeds purchased from the Government cinchona plantation, Munson, Kalimpong, Bengal. Received June 13, 1932.

Introduced for the use of Department specialists working with drug plants.

100114. *CINCHONA LEDGERIANA* Moens.

A tree, native to the Andes, yielding a bark remarkably rich in quinine which crystallizes readily as quinine sulphate. The percentage of the other alkaloids present is relatively small. The bark of this species matures in the fifth or sixth year and does not increase its quinine content after that.

For previous introduction see 78602.

100115. *CINCHONA LEDGERIANA* × *OFFICINALIS*.

100116. *CINCHONA LEDGERIANA* × *SUCCURUBRA*.

100117. *CINCHONA OFFICINALIS* L.

100118. *CINCHONA SUCCURUBRA* Pavon.

The bark of this tree contains a large quantity of alkaloids, of which a relatively large percentage is cinchonidine, which retards the separation of the quinine as sulphate. The bark of this species matures in the fourth or fifth year and does not increase in quinine content thereafter.

100119 to 100124. *HORDEUM VULGARE PALLIDUM* Seringe. Poaceae.

## Six-rowed barley.

From India. Seeds presented by F. J. F. Shaw, Imperial economic botanist, Imperial Institute of Agricultural Research, Pusa, Bihar. Received June 14, 1932.

Introduced for the use of Department specialists interested in cereal investigations.

100119. Type 7. 100122. Type 14.

100120. Type 12. 100123. Type 20.

100121. Type 13. 100124. Type 21.

100125 to 100130. *ORYZA SATIVA* L. Poaceae. Rice.

From Madagascar. Seeds presented by Maison Grobot & Simphal, Paris, France. Received June 16, 1932.

A collection of rice introduced for the use of Department specialists interested in cereal investigations.

Samples of Vary-Lava, the finest rice of Madagascar. This rice closely resembles the *Java Giant* rice.

100131 to 100140. *ACACIA* spp. Mimosaceae.

From Italy. Seeds presented by Dr. Mario Calvino, Stazione Experimentale di Floricoltura, San Remo. Received June 17, 1932.

100131. *ACACIA* sp. 100136. *ACACIA* sp.

*Bon accueil precoce.* *Joffre.*

100132. *ACACIA* sp. 100137. *ACACIA* sp.

*Bon accueil tardive.* *Mirabilia.*

100133. *ACACIA* sp. 100138. *ACACIA* sp.

*Bon accueil hybrida.* *Rustica.*

100134. *ACACIA* sp. 100139. *ACACIA* sp.

*Decurrens hybrida.* *Tournaire A.*

100135. *ACACIA* sp. 100140. *ACACIA* sp.

*Gaulois.* *Tournaire No. 1.*

## 100141 to 100226.

From China. Seeds collected by the sixth Forrest expedition, 1930-32, to southwestern China, and presented by Maj. Lionel de Rothschild, London, England. Received June 17, 1932.

100141 to 100144. *ACONITUM* spp. Ranunculaceae. Monkshood.

100141. *ACONITUM DIELSIANUM* Hort.

F. 30953. A name for which a place of publication and a description have not been found.

100142. *ACONITUM* sp.

F. 30776. Related to *A. Forrestii*.

100143. *ACONITUM* sp.

G. F. 34.

100144. *ACONITUM* sp.

G. F. 35. Related to *A. Forrestii*.

100145. *ALLIUM POLYASTRUM* Diels. Liliaceae. Onion.

F. 30587. A stout herbaceous plant up to 2 feet high, with broad-linear leaves and rosy flowers, 30 to 60 in a head. Native to southwestern China.

100146. *ALLIUM* sp. Liliaceae. Onion.

F. 30844.

100147 to 100153. *ANEMONE* spp. Ranunculaceae.

100147 to 100149. *ANEMONE DEMISSA* Hook. f. and Thoms.

A lovely alpine plant, common in limestone soil in mountain meadows at altitudes between 11,000 and 13,000 feet in Yunnan. The leaves form a basal rosette, and the large white flowers are in umbels.

For previous introduction see 93876.

100147. G. F. 392.

100148. F. 29665. Variety *villosa*.

100149. F. 29686. Near variety *villosa*.

100150. *ANEMONE GLAUCIFOLIA* Franch.

G. F. 45. A plant 1 to 2 feet high, native to the mountains of southwestern China. The leaves are deeply pinnatifid, up to 6 inches long, and the showy violet flowers are 1 to 2 inches across.

100151. *ANEMONE NARCISSIFOLIA* L.

F. 30830. A stout herbaceous perennial with petioled 3- to 5-parted, deeply cut basal leaves sessile involucreal leaves, and an umbel of several white flowers an inch across, with yellow anthers. It is native to Europe and Asia.

For previous introduction see 91387.

100152. *ANEMONE* sp.

F. 29776 and F. 29865. Near to *A. demissa*.

100153. *ANEMONE* sp.

G. F. 53. A variety with white flowers, near to *A. demissa*.

100154. *ASTER STATICEFOLIA* Franch. Asteraceae.

F. 30827.

For previous introduction and description see 99835.

100155. *ASTER* sp. Asteraceae.

F. 30814. Closely related to *A. Forrestii*.

100156. *ASTRAGALUS* sp. Fabaceae. Milkvetch.

F. 30819.

## 100141 to 100226—Continued.

100157. *BRIGGSIA MUSICOLA* (Diels) Craib. Gesneriaceae.

F. 30604. A stemless plant with hairy, oblong-lanceolate leaves 3 to 5 inches long and deep-orange flowers half an inch wide on scapes about 10 inches high. Native to southwestern China.

100158. *CASSIOPE FASTIGIATA* (Wall.) D. Don. Ericaceae.

F. 30874.

For previous introduction and description see 99843.

100159. *CASSIOPE SELAGINOIDES* Hook. f. and Thoms. Ericaceae.

F. 30791.

For previous introduction and description see 99844.

100160 to 100162. *CHIRITA* spp. Gesneriaceae.

100160. *CHIRITA* sp.

F. 29599.

100161. *CHIRITA* sp.

F. 29736. Related to *C. trailliana*.

100162. *CHIRITA* sp.

F. 29834. Related to *C. trailliana*.

100163 to 100165. *CODONOPSIS* spp. Campanulaceae.

100163. *CODONOPSIS BULLEYANA* Forrest.

G. F. 50. A malodorous perennial about a foot high, with an ascending stem, hairy heart-shaped leaves 4 to 6 inches long, and pale watery blue flowers nearly half an inch long. Native to southwestern China.

100164. *CODONOPSIS* sp.

F. 30823.

100165. *CODONOPSIS* sp.

G. F. 51.

100166. *CRAWFURDIA BULLEYANA* Forrest. Gentianaceae.

F. 30551. A climbing plant 10 to 20 feet high, with a 4-angled, often purplish stem and cordate or broadly ovate leaves about 3 inches long. The large blue-purple flowers are 2 inches long. Native to Upper Burma.

100167 to 100181. *CREMANTHODIUM* spp. Asteraceae.

100167. *CREMANTHODIUM NOBILE* (Franch.) Diels.

F. 30935. A very fragrant alpine plant, native to Yunnan, with thick broadly obovate leaves and yellow flowers in large nodding heads.

100168. *CREMANTHODIUM RHODOCEPHALUM* Diels.

F. 30757.

For previous introduction and description see 99854.

100169. *CREMANTHODIUM* sp.

F. 29868.

100170. *CREMANTHODIUM* sp.

F. 29875.

100171. *CREMANTHODIUM* sp.

F. 29885.

100172. *CREMANTHODIUM* sp.

F. 29889.

## 100141 to 100226—Continued.

100173. CREMANTHODIUM sp.  
F. 29926.
100174. CREMANTHODIUM sp.  
F. 30758.
100175. CREMANTHODIUM sp.  
F. 30770.
100176. CREMANTHODIUM sp.  
F. 30792.
100177. CREMANTHODIUM sp.  
F. 30825.
100178. CREMANTHODIUM sp.  
F. 30913.
100179. CREMANTHODIUM sp.  
F. 31011.
100180. CREMANTHODIUM sp.  
G. F. 41.
100181. CREMANTHODIUM sp.  
G. F. 43. Closely related to *C. nobile*.
- 100182 to 100184. DELPHINIUM spp. Ranunculaceae. Larkspur.
100182. DELPHINIUM sp.  
F. 30815. Closely related to *D. mosoyense*.
100183. DELPHINIUM sp.  
F. 30775. Closely related to *D. yunnanense*
100184. DELPHINIUM LIKIANGENSE Franch.  
G. F. 57. One of the finest larkspurs; the dark-green glossy leaves are in cushionlike rosettes, the large rich-blue flowers are an inch across, and there are several spikes of a plant at one time. Found in glacial gravel up to 13,000 feet altitude.
100185. DIDISSANDRA GRANDIS Craib. Gesneriaceae.  
F. 30745.  
For previous introduction and description see 99658.
100186. DICRANOSTIGMA sp. Papaveraceae.  
F. 30077.
- 100187 to 100189. DRACOCEPHALUM spp. Menthaeae. Dragonhead.
- 100187 and 100188. DRACOCEPHALUM BULLATUM Forrest.  
An alpine perennial 3 to 7 inches high, with rather stiff ovate-elliptic leaves, pale purple beneath, an inch or more in length, the lower one long-petioled, and bright-blue flowers in dense racemes. Native to southwestern China.  
100187. F. 30762. 100188. G. F. 430.
100189. DRACOCEPHALUM ISABELLAE Forrest.  
F. 30798. A mintlike perennial 12 to 18 inches high, native to China, with leaves 1 inch long, divided into 5 to 7 linear segments, and spikes, 5 to 6 inches long, made up of verticillate clusters of dragon-shaped, deep blue-purple flowers 1 to 2 inches long.  
For previous introduction see 97603.
100190. ERIGERON MULTIRADIATUS (Lindl.) C. B. Clarke. Asteraceae. Himalayan fleabane.  
F. 30846. A beautiful alpine composite native to wet grassy places the whole length of the Himalayan range from 7,000 to 12,000 feet altitude. It is a pubescent or hirsute herb up to 10 inches high,

## 100141 to 100226—Continued.

- with simple scapellike leafy stems and numerous radical leaves. The oblanceolate leaves, narrowed into a rather long petiole, are 4 to 8 inches long.
100191. HALENIA ELLIPTICA D. Don. Gentianaceae.  
G. F. 30. An alpine herbaceous perennial 1 to 2 feet high, native to the temperate slopes of the Himalayas in India. The elliptic leaves are 2 to 3 inches long, and the pale-blue flowers are in a lax terminal panicle. The bell-shaped corolla, 1 inch long, is lobed half-way to the base, and at the base of each lobe is a spur about one-third inch long with a recurved tip.
100192. HEDYSARUM sp. Fabaceae.  
F. 30747.
100193. IMPATIENS DELAVAYI Franch.  
G. F. 31. A glabrous annual with erect branched stems a foot high, broadly ovate or rounded crenate leaves 1 to 2 inches long, and large showy rose-lilac flowers over an inch long. Native to southwestern China.
- 100194 to 100196. INCARVILLEA spp. Bignoniaceae.
100194. INCARVILLEA LUTEA Bur. and Franch.  
G. F. 105.  
For previous introduction and description see 99678.
100196. INCARVILLEA sp.  
F. 30842. Closely related to *I. delavayi*.
100196. INCARVILLEA sp.  
G. F. 32.
100197. INULA HOOKERI C. B. Clarke. Asteraceae.  
F. 30550.  
For previous introduction and description see 99879.
- 100198 to 100203. IRIS spp. Iridaceae.
100198. IRIS COLLETTII Hook. f.  
F. 30545. A practically stemless iris, closely related to *I. nepalensis*, native to northeastern India and southwestern China. The leaves have two prominent veins on one side and three on the other, and the lilac flowers are 1 to 2 inches across and are borne on stems only 1 to 2 inches high.
100199. IRIS DELAVAYI Micheli. Delavay iris.  
G. F. 82.  
For previous introduction and description see 99882.
100200. IRIS FORRESTII Dykes. Yunnan iris.  
F. 30741.  
For previous introduction and description see 99881.
100201. IRIS sp.  
F. 30866. A plant with blue flowers.
100202. IRIS sp.  
F. 30867. A plant with blue flowers.
100203. IRIS sp.  
G. F. 47. A plant closely related to *I. chryso-graphes*.
- 100204 and 100205. MEGACARPAEA DELAVAYI Franch. Brassicaceae.  
An alpine perennial with a thick rhizome and an erect stem 1 to 2 feet high. The pinnatisect leaves are up to 6 inches long, and the small violet



## 100141 to 100226—Continued.

or purplish flowers are in dense corymbs. Native to southwestern China.

100204. F. 30843. 100205. F. 30877.

100206. PAEONIA sp. Ranunculaceae. Peony.

F. 30998. A plant closely related to *P. lutea*.

100207. PAEONIA sp. Ranunculaceae. Peony

G.F. 39. A plant closely related to *P. potaninii*

100208. PODOPHYLLUM sp. Berberidaceae.

Mayapple.

F. 30804. A plant closely related to *P. aurantiaca*.

100209 to 100212. POLYGONUM spp. Polygonaceae. Fleecyflower.

100209. POLYGONUM EMODI Meisn.

F. 31013. A trailing and creeping perennial herb native to the Himalayas at altitudes between 8,000 and 11,000 feet in India. The branches are 6 to 10 inches long, with rigid linear-lanceolate leaves 1 to 2 inches long and short ascending branches bearing racemes of small red flowers.

100210. POLYGONUM FORRESTII Diels.

F. 30860. A low herbaceous plant with a long creeping rootstock, found on hillsides in Yunnan. It is from 2 to 4 inches high, with white or cream-white flowers.

100211. POLYGONUM SPHAEROSTACHYUM Meisn.

F. 30795. A perennial herb 6 to 12 inches high, native to the Himalayas at an altitude of 15,000 feet in India and Tibet. The long-petioled radicle leaves are linear-lanceolate with crenulate margins, and small drooping crimson flowers are borne in solitary erect cylindrical or capitate spikes.

100212. POLYGONUM sp.

F. 30835.

100213. CONVULVULUS sp. Convolvulaceae.

F. 30547.

100214 to 100218. POTENTILLA spp. Rosaceae. Cinquefoil.

100214. POTENTILLA ARTICULATA Franch.

F. 30785. A low alpine perennial with a thick rhizome, digitately trifoliate hairy pale-green leaves only half an inch long, and light-yellow flowers half an inch across, on stems 2 to 3 inches high. Native to southwestern China.

100215. POTENTILLA CORIANDRIFOLIA D. Don.

F. 30782. Variety *dumosa*; a bushy variety of *P. coriandrifolia* which is a tufted herb 4 inches in diameter, found in rock crevices and open thin turf at Bhutan, India, at 13,000 feet altitude. The white flowers have dark-red centers.

100216. POTENTILLA ERIOCARPA Wall.

F. 30821. A perennial herb with a stout rootstock from which arise branches 4 to 10 inches long, densely clothed with imbricating woolly stipular sheaths. From the tips of these branches grow the slender suberect flowering stems bearing thin three-lobed and incised leaves about 1 inch long and solitary yellow flowers 1 to 2 inches across. It is native to northern India.

For previous introduction see 93924.

100217. POTENTILLA SAUNDERSIANA Royle.

F. 30773.

## 100141 to 100226—Continued.

For previous introduction and description see 99974.

100218. POTENTILLA STENOPHYLLA (Franch.) Diels.

F. 30836. A plant 3 to 4 inches high, with a thick rhizome, pinnate leaves 2 or 3 inches long, and orange-yellow flowers on scapes 4 inches high. Native to Yunnan.

100219 to 100222. SAXIFRAGA spp. Saxifragaceae. Saxifrage.

100219. SAXIFRAGA sp.

F. 30837.

100220. SAXIFRAGA sp.

F. 30839.

100221. SAXIFRAGA sp.

F. 30840. A form closely related to *S. montana*.

100222. SAXIFRAGA sp.

F. 30921.

100223. SOLMS-LAUBACHIA PULCHERRIMA Muschler. Brassicaceae.

G.F. 37. A dwarf alpine? [to 4 inches high, with ovate or ovate-lanceolate leaves an inch long, appressed to the stem, and bright turquoise-blue aromatic flowers 2 inches or more long on one-flowered scapes. Native to southwestern China.

100224. SOLMS-LAUBACHIA sp. Brassicaceae.

F. 30603.

100225. SPENCERIA RAMALANA Trimen. Rosaceae.

G.F. 49. A free-flowering and attractive herbaceous perennial about a foot high, with erect or ascending stems, covered with silvery hairs. The stem leaves are reduced to 1 or 2 pairs of narrowly oval leaflets, and the golden or red-yellow flowers are in stiff open racemes. Native to dry upland pastures of western Szechwan and Yunnan.

100226. TROLLIUS sp. Ranunculaceae.

Globeflower.

G.F. 70. A form closely related to *T. patulus*.

100227. BAMBUSA MULTIPLEX (Lour.) Rausch. Poaceae. Hedge bamboo.

From Florida. Plants presented by Harold Mowry, Agricultural Experiment Station, Gainesville. Received June 21, 1932.

Plants from a bamboo hedge at the Gainesville station, grown under the name *Arundinaria nitida*. The hedge is kept pruned to a height of about 4½ feet, but the culms probably would grow eventually to 15 feet or more if permitted. The new culms appear early in May.

100228 to 100230. CINCHONA spp. Rubiaceae.

From Jamaica, West Indies. Cuttings presented by Col. Victor E. Ruehl, Caldwell, N.J. Received June 18, 1932.

100228. CINCHONA sp.

No. 1. Ruehl.

100229. CINCHONA sp.

No. 2. Jamaica.

100230. CINCHONA sp.

No. 3. Jamaica.

## 100231 to 100251.

From New Zealand. Seeds presented by Bruce Levy, agrostologist, Plant Research Station, Palmerston North. Received June 13, 1932.

Introduced for the use of Department specialists interested in forage crops.

100231 and 100232. *AGROSTIS TENUIS* Sibth. Poaceae. Bentgrass.

100231. Brown top Bt 526 (ordinary New Zealand brown top).

100232. Brown top Bt 539 (New Zealand dryland type).

100233 to 100235. *DACTYLIS GLOMERATA* L. Poaceae. Orchard grass.

100233. Cocksfoot Bc 193. A native variety.

100234. Cocksfoot Bc 216. A native variety.

100235. Cocksfoot Bc 217. An imported variety.

100236 to 100241. *LOLIUM PERENNE* L. Poaceae. Perennial ryegrass.

100236. Ba 74. Bad false perennial.

100237. Ba 192. Average false perennial.

100238. Ba 1748. Good false perennial.

100239. Ba 1815. Italian ryegrass sold as perennial.

100240. Ba 2734. New Zealand certified.

100241. Ba 1871. New Zealand selection.

100242 and 100243. *TRIFOLIUM PRATENSE* L. Fabaceae. Red clover.

100242. Aa 172. New Zealand broad red clover.

100243. Aa 201. New Zealand broad red clover.

100244 to 100251. *TRIFOLIUM REPENS* L. Fabaceae. White clover.

100244. Ac 138. New Zealand white clover, type no. 2.

100245. Ac 617. New Zealand Dutch white clover.

100246. Ac 621. Average New Zealand commercial.

100247. Ac 654. Average New Zealand commercial.

100248. Ac 706. New Zealand Dutch white clover.

100249. Ac 827. New Zealand certified, type no. 1.

100250. Ac 910. New Zealand white clover, type no. 2.

100251. Ac 2008. New Zealand certified, type no. 1.

100252. *ANABASIS APHYLLA* L. Chenopodiaceae.

From the Union of Soviet Socialist Republics. Seeds presented by the Institute of Plant Industry, Leningrad, at the request of Dr. N. I. Vavilov. Received June 21, 1932.

An upright shrub 2 feet high with green branches, scalelike leaves, and inconspicuous flowers. It is native to the Mediterranean region and is used as a sand binder.

100253 to 100267. *IPOMOEA BATATAS* (L.) Poir. Convolvulaceae.

Sweetpotato.

From the Union of Soviet Socialist Republics. Tubers presented by the Sukhum subtropical branch of the All-Union Institute of Plant Indus-

## 100253 to 100267—Continued.

try, through V. P. Alekseev, chief of the Bureau of Introduction, Leningrad. Received June 21, 1932.

A collection of new varieties developed at the Sukhum station; introduced for the use of Department specialists interested in sweetpotatoes.

100253. No. 33. 100261. No. 95.

100254. No. 36. 100262. No. 108.

100255. No. 39. 100263. No. 162.

100256. No. 47. 100264. No. 168.

100257. No. 51. 100265. No. 184.

100258. No. 66. 100266. No. 191.

100259. No. 82. 100267. No. 196-A.

100260. No. 91.

## 100268 to 100278.

From the Union of Soviet Socialist Republics. Seeds presented by the Sukhum subtropical branch of the All-Union Institute of Plant Industry, Sukhum, Caucasus. Received June 21, 1932.

100268. *BUTIA CAPITATA* (Mart.) Becc. (*Coccothrinax capitata* Mart.). Phoenicaceae. Palm.

No. 135554. A large coconutlike palm, native to Argentina, with a spineless trunk, pinnate leaves, and large bunches of small edible fruits. It is said to be harder than any other species of *Butia*.

For previous introduction see 98391.

100269 to 100275. *BUTIA CAPITATA* × *ERIOSPATHA*. Phoenicaceae. Palm.

A natural hybrid combining characters of both parents. The fruit very closely resembles in flavor the best Japanese loquats. The tree will probably thrive wherever the Satsuma orange is a commercial crop.

For previous introduction see 98230.

100269. No. 135311. 100273. No. 135526.

100270. No. 135312. 100274. No. 135527.

100271. No. 135313. 100275. No. 135529.

100272. No. 135316.

100276. *JUGLANS REGIA* L. Juglandaceae. Persian walnut.

No. 135519. A variety native to the Caucasus region.

100277. *BUTIA CAPITATA ODORATA* (Barb.-Rodr.) Becc. Phoenicaceae. Palm.

No. 135553. A palm about 15 feet high, much like the date palm, bearing large bunches of edible fragrant fruits about an inch in diameter. It is native to Brazil.

100278. *VACCINIUM ARCTOSTAPHYLOS* L. Vacciniaceae. Caucasian whortleberry.

No. 135937. A deciduous shrub up to 10 feet high, native to the Caucasus region. The oblong-ovate finely toothed leaves are 2 to 4 inches long and turn purple red in the autumn. The small bell-shaped flowers are borne in racemes 2 inches long and are white with a purple tinge. The globose purple berries are nearly one-half inch in diameter.

100279 and 100280. *EPIDENDRUM BICORNUTUM* Hook. Orchidaceae. Orchid.

From the West Indies. Plants collected by David Fairchild and P. H. Dorsett, agricultural explorers, with the 1931-32 Allison V. Armour expedition. Received April 11, 1932.

## 100279 and 100280—Continued

*The virgin orchid*; from the rocks near the sea-coast at Man of War Bay, Tobago, Windward Islands. A tropical American epiphytic orchid with pseudobulbs 1 to 2 feet long and short leathery leaves. The fragrant white flowers, with small crimson spots on the three-lobed lip, are borne in slender racemes.

100279. No. 2943. February 21, 1932.

100280. No. 2930. February 19, 1932.

## 100281 to 100364.

From China. Seeds collected by the sixth Forrest expedition, 1930-32, to southwestern China and presented by Maj. Lionel de Rothschild, London, England. Received June 23, 1932.

100281. *CORYLOPSIS* sp. Hamamelidaceae.

F. 29915.

100282 to 100287. *PRIMULA* spp. Primulaceae.  
Primrose.

100282. *PRIMULA* sp.

F. 29916.

100283. *PRIMULA CHUNGENSIS* Balf. and Ward.

F. 29932.

For previous introduction and description see 99998-100000.

100284. *PRIMULA BRYOPHILA* Balf. and Farr.

F. 29925.

For previous introduction and description see 99987.

100285. *PRIMULA BURMANICA* Balf. and Ward.

F. 29919.

For previous introduction and description see 99989.

100286. *PRIMULA PLANIFLORA* Hort.

G. F. 457. A name for which a place of publication and a description have not been found.

100287. *PRIMULA SECLUSA* Balf. and Forr.

F. 29917. A large, rather coarse, hairy primula with rounded cordate membranous leaves up to 10 inches long and numerous bright-red flowers one-half inch long on a stout hairy scape a foot or more tall. Native to southwestern China.

100288 to 100362. *RHODODENDRON* spp. Ericaceae.

100288. *RHODODENDRON* sp.

G. F. 6.

100289. *RHODODENDRON* sp.

G. F. 8.

100290. *RHODODENDRON* sp.

G. F. 9.

100291. *RHODODENDRON* sp.

G. F. 11.

100292. *RHODODENDRON* sp.

G. F. 12.

100293. *RHODODENDRON* sp.

G. F. 13.

100294. *RHODODENDRON* sp.

G. F. 14.

100295. *RHODODENDRON* sp.

G. F. 15.

100296. *RHODODENDRON* sp.

G. F. 17.

## 100281 to 100364—Continued.

100287. *RHODODENDRON* sp.

G. F. 18.

100298. *RHODODENDRON* sp.

G. F. 19.

100299. *RHODODENDRON* sp.

G. F. 20.

100300. *RHODODENDRON* sp.

G. F. 22.

100301. *RHODODENDRON* sp.

G. F. 24.

100302. *RHODODENDRON* sp.

G. F. 25.

100303. *RHODODENDRON* sp.

G. F. 27.

100304. *RHODODENDRON* sp.

G. F. 28.

100305. *RHODODENDRON* sp.

G. F. 29.

100306. *RHODODENDRON* sp.

G. F. 100.

100307. *RHODODENDRON* sp.

G. F. 101.

100308. *RHODODENDRON* sp.

F. 29559.

100309. *RHODODENDRON* sp.

F. 29666.

100310. *RHODODENDRON* sp.

F. 29763.

100311. *RHODODENDRON* sp.

F. 29894.

100312. *RHODODENDRON* sp.

F. 29937.

100313. *RHODODENDRON* sp.

F. 30394.

100314. *RHODODENDRON* sp.

F. 30526.

100315. *RHODODENDRON* sp.

F. 30527.

100316. *RHODODENDRON* sp.

F. 30528.

100317. *RHODODENDRON* sp.

F. 30532.

100318. *RHODODENDRON* sp.

F. 30540.

100319. *RHODODENDRON* sp.

F. 30889.

100320. *RHODODENDRON* sp.

F. 30892.

100321. *RHODODENDRON* sp.

F. 30896.

100322. *RHODODENDRON* sp.

F. 30910.

100323. *RHODODENDRON* sp.

F. 30967.

## 100281 to 100364—Continued.

## 100324. RHODODENDRON sp.

F. 30877.

## 100325. RHODODENDRON sp.

F. 7.

## 100326. RHODODENDRON ADENOPHORUM Balf. and Smith.

F. 30888. A shrub up to 7 feet high, with thick lanceolate leaves 5 inches long and rose-colored flowers over an inch long in lax umbels. Native to Yunnan.

For previous introduction see 94101.

## 100327. RHODODENDRON APERANTUM Balf. and Ward.

F. 29938. A dwarf spreading shrub 6 to 20 inches high, native to northeastern Burma, at altitudes between 12,000 and 14,000 feet. The oval to oblanceolate leaves, 2 inches long, are almost sessile in whorls at the ends of the branchlets. The tubular-campanulate flowers, in various shades from white to rose, deep-rose, orange, and yellow, are about 2 inches long and are borne in 1- to 4-flowered lax umbels.

## 100328. RHODODENDRON ARIZELUM Balf. and Forr.

F. 29785. A shrub or small tree 10 to 20 feet high, native to Burma and Tibet. The branchlets are clothed in cinnamon or gray tomentum, and the oval to oblanceolate leaves, 6 inches long, are dark green and rugulose above and cinnamon or brown tomentose beneath. The obliquely campanulate flowers, 2 inches across, are white, creamy yellow, or yellow tinged with rose, with crimson blotches at the base, and are borne in racemose umbels of 15 to 25 flowers.

## 100329. RHODODENDRON BEESIANUM Diels.

F. 30894. A shrub 15 to 20 feet high, with leathery, purple-green narrowly oblanceolate leaves about 6 inches long and deep rich-rose flowers up to 2 inches across. Allied to *R. delavayi* and native to Yunnan.

For previous introduction see 94108.

## 100330 and 100331. RHODODENDRON GRIERSONIANUM Balf. and Forr.

A shrub 5 to 10 feet high, native to western Yunnan. The narrowly lanceolate leaves, 4 to 8 inches long, are green above and covered beneath with a loose whitish to buff woolly tomentum. The funnel-campanulate flowers, in clusters of 5 to 12, are 2 to 3 inches long and are bright geranium-scarlet, dappled inside with darker spots.

For previous introduction see 97665.

100330. F. 29762. 100331. F. 30392.

## 100332 and 100333. RHODODENDRON BULLATUM Franch.

A loosely branched shrub up to 8 feet high, native to Yunnan. The branchlets are densely and softly woolly, the elliptic-ovate leaves, 2 to 4 inches long, are puckered above and loosely woolly pubescent beneath, and the broadly tubular pink-tinged white flowers, 2 to 3 inches long, are borne in terminal clusters.

100332. F. 30393. 100333. G.F. 16.

## 100334. RHODODENDRON CALOXANTHUM Balf. and Farr.

F. 29647. A shrub 3 to 5 feet high, native to northeastern Burma between 11,000 and 12,000 feet altitude. The leathery broadly elliptic to orbicular leaves, 2 inches across, are dark green above and pale glaucous green beneath with scattered glandular hairs. The campanulate

## 100281 to 100364—Continued.

citron or sulphur-yellow flowers, over 1 inch long, are borne in 4- to 6-flowered umbels.

## 100335. RHODODENDRON CANTABILE Balf. f.

F. 30395.

For previous introduction and description see 98459.

## 100336. RHODODENDRON CHAETOMALLUM Balf. and Forr.

F. 30539. A shrub 4 to 5 feet high, with thin twiggy branches densely clothed with branched bristly hairs. The oblong-obovate leathery leaves are about 4 inches long, dark olive green above, and covered beneath with tawny wool. The deep-crimson tubular-campanulate flowers, 2 inches long, are borne in 4- to 6-flowered terminal umbels. It is native to Tibet and Yunnan between 11,000 and 13,000 feet altitude.

## 100337. RHODODENDRON DECORUM Franch.

F. 30887. A western Chinese evergreen shrub with glabrous leaves, glaucous beneath, and broadly bell-shaped white or pink flowers 2 inches across.

For previous introduction see 97661.

## 100338. RHODODENDRON EUCHAITES Balf. and Forr.

F. 29545. A shrub or small tree 15 to 20 feet high, closely related to *R. neriflorum*, native to northeastern Burma and adjacent Yunnan. The oblong to oval leaves, 2 to 4 inches long, are dark green and smooth above and white waxy beneath. The bright-crimson fleshy tubular-campanulate flowers are 1 to 2 inches long and are borne in umbels of 5 to 12.

## 100339 and 100340. RHODODENDRON FACETUM Balf. and Ward.

A tree 15 to 20 feet high, with the branchlets covered with fine white or tawny farinose pubescence, native to rain forests at 9,000 feet altitude in northeastern Burma and adjacent Yunnan. The oblong-elliptic to oblong-lanceolate leathery leaves are 5 to 8 inches long, and the fleshy tubular-campanulate flowers, 2 inches long, are scarlet with deeper spots.

100339. F. 29926. 100340. F. 30375.

## 100341. RHODODENDRON FICTOLACTEUM Balf. f.

F. 30893. A tree up to 45 feet high, with cinnamon-tomentose branchlets, native to Yunnan. The oblong-obovate to oblanceolate leaves are 6 to 12 inches long, dark green and rugulose above and clothed with buff to rusty brown tomentum beneath. The obliquely campanulate flowers, 2 inches long and twice as broad, vary from white to creamy white or rose tinted, with a deep-crimson basal blotch and radiating spots, and are borne in corymbs of 12 to 15 flowers each.

## 100342. RHODODENDRON GLISCHRUM Balf. and Smith.

G. F. 2. A tree up to 25 feet high, native to Yunnan and Burma. The oblanceolate leaves, 4 to 10 inches long, are bright green above and are densely hispid with long curved setae beneath. The campanulate flowers, 2 inches long, are deep rose with a crimson blotch at the base and are borne in a racemose umbel of about 10.

## 100343. RHODODENDRON HABROTRICHUM Balf. and Smith.

F. 29588. A shrub 4 to 10 feet high, with branchlets densely clothed with coarse glandular bristles. The elliptic-oblong leathery leaves, 4 to 7 inches long, are dark green above and pale green beneath, and the funnel-campanulate flowers, 2 inches long, are white or

## 100281 to 100364—Continued.

pale-rose and are borne in compact, many-flowered umbels. It is native to Yunnan.

**100344 and 100345. RHODODENDRON HIPPOPHAEOIDES** Balf. and Smith.

For previous introduction and description see 98465.

100344. G. F. 5. 100345. G. F. 21.

**100346. RHODODENDRON KYAWI** Lacs and Smith.

F. 29929. A shrub 15 to 20 feet high, native to northeastern Burma. The oblong to oblong-oval leaves, 6 to 12 inches long, are bright green above and pale green beneath, and the tubular-campanulate flowers, 2 to 3 inches long, are deep crimson and are borne in racemose corymbs of 12 to 16.

**100347. RHODODENDRON LEPTOTHRIUM** Balf. and Forr.

G. F. 23. A shrub 2 to 5 feet high, with leaves bright green on both sides and purple-red flowers; found at 10,500 feet altitude in Yunnan.

For previous introduction see 94042.

**100348. RHODODENDRON LITIENSE** Balf. and Forr.

G. F. 3. A shrub 4 to 9 feet high, with densely glandular branchlets, native to Yunnan. The thin, leathery, oblong to oblong-oval leaves, 2 to 3 inches long, are green above and glaucous beneath, and the widely campanulate clear-yellow flowers, 1 inch long, are borne in racemose umbels of 5 or 6.

**100349. RHODODENDRON MEGACALYX** Balf. and Ward.

F. 29809. A bushy tree 10 to 16 feet high, native to northeastern Burma between 7,000 and 9,000 feet altitude. The elliptic to obovate-elliptic leaves, 4 to 6 inches long, are glabrous above and glaucous with small scales beneath. The fragrant white flowers, in clusters of about five, have a bell-shaped calyx 1 inch long, and the broadly funnel-shaped corolla is more than 2 inches long.

**100350. RHODODENDRON PRONUM** Tagg. and Forr.

G. F. 26. A stunted prostrate shrub 3 to 10 feet high, native to Yunnan between 12,000 and 15,000 feet altitude. The oblong-elliptic to oblanceolate leaves, 1 to 3 inches long, are dull and slightly rugulose above and covered beneath with dull-gray to fawn loosely felted tomentum. The obliquely campanulate flowers, more than an inch long, are creamy yellow with copious deep-crimson markings and are borne in a racemose umbel of 8 to 12 flowers surrounded by the persistent bud scales and bracts.

**100351 and 100352. RHODODENDRON PROSTRATUM** W. W. Smith.

A prostrate shrub with bristly branchlets 4 inches high, native to Yunnan between 15,000 and 16,000 feet altitude. The broadly oblong-elliptic leaves, less than 1 inch long, are glossy and reticulate above and densely covered beneath with brown scales. The pink-violet, red-spotted flowers, less than 1 inch long, are widely funnel-shaped and are borne in small terminal clusters.

100351. F. 30543. 100352. F. 30891.

**100353. RHODODENDRON RACEMOSUM** Franch. Mayflower rhododendron.

G. F. 10.

For previous introduction and description see 98471.

25842-34-6

## 100281 to 100364—Continued.

**100354. RHODODENDRON SPERABLE** Balf. and Farr.

F. 30912. A shrub 3 to 6 feet high, native to northeastern Burma between 10,000 and 12,000 feet altitude. The lanceolate to elliptic leaves, 2 to 4 inches long, are dark green above and clothed beneath with pale-cinnamon to tawny thick woolly tomentum. The fleshy tubular-campanulate flowers, 1 to 2 inches long, are scarlet, marked at the base with dark spots, and are borne in 4- or 5-flowered terminal umbels.

**100355 to 100356. RHODODENDRON STEWARTIANUM** Diels.

A graceful shrub 3 to 7 feet high, native to the Burma-Yunnan border between 10,000 and 14,000 feet altitude. The leathery elliptic to obovate leaves, 2 to 5 inches long, are bright green above and covered beneath with a thin cream-yellow farinose indumentum. The tubular-campanulate flowers, 2 inches long, vary from pure white or soft yellow through white flushed rose to deep rose margined with deep crimson.

100355. G. F. 4. 100357. F. 29685.

100356. F. 29663. 100358. F. 30533.

**100359. RHODODENDRON SUB-EROSUM** Balf. and Forr.

F. 29687. A shrub 5 to 7 feet high, closely resembling *R. yunnanense*, native to Yunnan. The evergreen oblanceolate to obovate leaves, 2 to 3 inches long, are smooth above but bristly on the margin, with fleshy scales beneath. The slightly irregular flowers, about 1 inch long, are faintly flushed rose with deep-rose markings and are borne in terminal or lateral 3- to 5-flowered clusters.

**100360. RHODODENDRON TALIENSE** Franch.

G. F. 1. A loosely branched shrub 4 to 8 feet high, native to Yunnan. The broadly lanceolate to oblong-ovate leaves, 2 to 5 inches long, are dark green and rugulose above and covered beneath with a tawny feltlike tomentum. The funnel-campanulate flowers, 1 to 2 inches long, are clear cream yellow or flushed rose with deep-crimson markings and are borne in umbels of 10 to 15 flowers.

**100361. RHODODENDRON TEPHROPELUM** Balf. and Farr.

F. 29655. A low shrub 2 to 4 feet high, with stiff branches, native to the Burma-Tibet border at 14,000 feet altitude. The oblong-ovate leaves, 1 to 2 inches long, are slightly scaly above and densely scaly beneath with small black scales. The magenta-rose flowers, with crimson-purple tubes 1 inch long, are borne in terminal clusters of 3 or 4 flowers each.

**100362. RHODODENDRON TRAILLIANUM** Forr. and Smith.

F. 30531. A shrub or small tree, up to 30 feet high, native to Yunnan. The elliptic to broadly oblong-lanceolate leaves, 3 to 6 inches long, are glabrous above and clad beneath with a suedelike green-gray or dull tawny tomentum. The funnel-campanulate flowers, 1 to 2 inches long, are white or rose white with deep-crimson spots and are borne in racemose umbels of 10 to 15 flowers.

**100363. RUBUS LINEATUS** Reinw. Rosaceae.

F. 29971. A perennial herb with very few prickles, native to the Himalayas in India and Java. The palmately divided leaves have 3 to 5 coriaceous lanceolate leaflets, 5 inches long, silky silvery tomentum beneath, and the white flowers, 1 inch across, borne in elongated silvery panicles, are followed by edible pink to yellow fruits.

## 100281 to 100364—Continued.

100364. *STACHYURUS HIMALAICUS* Hook. f. and Thoms. Stachyuraceae.

F 29930. A small tree, native to the eastern temperate slopes of the Himalayas in India. The ovate membranous leaves, 6 inches long, have serrate margins, and the small flowers, in erect spikes 2 to 3 inches long, are followed by fleshy berries the size of a small pea.

## 100365 to 100368.

From Guatemala City, Guatemala. Cuttings presented by Col. Victor E. Ruehl, Caldwell, N.J. Received June 24, 1932.

100365 to 100367. *CINCHONA* spp. Rubiaceae.

100365. *CINCHONA* sp.

*Cautarea*; Quina blanca from Yutiopa.

100366. *CINCHONA* sp.

No. 5.

100367. *CINCHONA* sp.

No. 4.

100368. *EUPHORBIA LANCIFOLIA* Schlecht. Euphorbiaceae.

*Ibbit*. A fleshy plant with broadly lanceolate dark-green leaves about 3 inches long and inconspicuous small flowers in terminal and axillary cymes. Native to southern Mexico. Introduced for its medicinal properties.

100369. *SACCIOLEPIS CONTRACTA* (Wight and Arn.) Hitchc. Poaceae.  
Grass.

From Hawaii. Seeds presented by J. M. Westgate, director, through C. P. Wilsie, agronomist, Hawaii Agricultural Experiment Station, Honolulu. Received June 22, 1932.

*Glenwood* grass: an annual glabrous grass with erect stems up to 3 feet high and flat leaves 2 to 4 inches long. The spikeletlike panicle is about 2 inches long. Native to Hawaii.

100370 to 100376. *ORYZA SATIVA* L. Poaceae. Rice.

From Australia. Seeds presented by the Rice Research Station, Yanco, New South Wales. Received June 16, 1932.

Introduced for the use of Department specialists interested in cereal investigations.

100370. *Caloro*. Selection 21.

100371. *Caloro*. Selection 46.

100372. *Caloro*. Selection 316.

100373. *Cotusa*. Selection 180.

100374. *Cotusa*. Selection 188-1.

100375. Selection 2179-6.

100376. Selection 2188.

100377. *CEDRELA ODORATA* L. Meliaceae. Cigarbox-cedar.

From Hawaii. Seeds presented by Harold Lyon, in charge, department of botany and forestry, experiment station of the Hawaiian Sugar Planters' Association, Honolulu. Received June 16, 1932.

For previous introduction and description see 98824.

100378. *CASTANEA HENRYI* (Skan) Rehd. and Wils. Fagaceae. Chestnut.

From China. Seeds collected by Peter Liu and sent through Owen L. Dawson, agricultural commissioner, Shanghai. Received January 7, 1932. Numbered in June 1932.

*Chu Lee* or *Chun Lee*, pearl chestnut; an edible chestnut from Chekiang Province. The tree becomes 25 to 30 feet high, with oblong-lanceolate long-acuminate leaves, green on both sides. The burs are either solitary or two in a bunch and contain usually but one seed.

For previous introduction see 95633.

100379 to 100467. *SOLANUM TUBEROSUM* L. Solanaceae. Potato.

From Peru. Tubers collected by H. G. MacMillan and C. O. Erlanson, Bureau of Plant Industry. Received June 28, 1932.

Nos. 100379 to 100413 were collected in May 1932 in the region of Cuzco, at 11,000 feet altitude.

100379. No. 281. Small round pink tubers with deep round eyes and yellow-white flesh.

100380. No. 282. Large round pink tubers with deep eyes having long brows and white flesh.

100381. No. 283. Small long flattened pink tubers with pink eyes, medium deep and yellow-white flesh.

100382. No. 284. Small irregularly round purple tubers with deep round small eyes and yellow-white flesh.

100383. No. 285. Small long white tubers with shallow elongated eyes and white flesh.

100384. No. 286. Small elongated purple tubers with thick skin, long shallow eyes, and white flesh.

100385. No. 287. Elongated red tubers of medium size with elongated red eyes and white flesh.

100386. No. 288. Elongated purple tubers of medium size with shallow elongated eyes and white flesh with slightly purple vascular ring.

100387. No. 289. Medium size, irregularly round white tubers with deep round white eyes and yellow-white flesh.

100388. No. 290. Large round pink and white mottled tubers with round shallow eyes and yellow-white flesh.

100389. No. 291. Large elongated black tubers with slightly elongated shallow eyes and white flesh with a purple vascular ring.

100390. No. 292. Large irregularly round pink tubers mottled with white, deep round pink eyes, and white flesh.

100391. No. 293. Small elongated pink tubers mottled with white, shallow elongated eyes, and white flesh.

100392. No. 294. Irregularly round yellow tubers of medium size with medium shallow pink eyes and yellow flesh.

100393. No. 295. Curved elongated yellow-white tubers with shallow white eyes and yellow-white flesh.

100394. No. 296. Ovate flattened black tubers mottled with white, which have medium shallow eyes and very white flesh.

100395. No. 297. Small ovate, pink and white mottled tubers with round shallow eyes and white flesh.

## 100379 to 100467—Continued.

100396. No. 298. Irregularly round white tubers with deep round white eyes and yellow-white flesh. Found in black soil.
100397. No. 299. Large ovate smooth red and white mottled tubers with round shallow eyes and white flesh.
100398. No. 300. Small dark-red elongated pointed tubers with shallow elongated eyes and white flesh with a red vascular ring.
100399. No. 301. Small white elongated tubers slightly mottled with red with shallow elongated eyes and very white flesh.
100400. No. 302. Large irregularly round pink tubers with deep round red eyes and white flesh.
100401. No. 303. Medium-sized irregularly round red-purple tubers with round shallow eyes and yellow flesh.
100402. No. 304. Medium-sized irregularly round red-purple tubers with deep elongated eyes and yellow flesh.
100403. No. 305. Irregularly ovate medium-sized, black-purple tubers with deep long eyes and white flesh flecked with purple.
100404. No. 306. Large red elongated tubers with deep elongated eyes and yellow flesh.
100405. No. 307. Medium-sized red and white mottled ovate tubers with deep elongated eyes and white flesh.
100406. No. 308. Medium-sized ovate tubers, very much mottled with red and white, which have shallow elongated eyes and white flesh.
100407. No. 309. Small irregularly round red and white mottled tubers with a thick skin, deep eyes, and yellow-white flesh.
100408. No. 310. Flattened ovate smooth tan tubers with shallow eyes and white flesh.
100409. No. 311. Small irregularly round pink tubers with deep round eyes and very white flesh.
100410. No. 312. Small irregularly round white tubers with deep round eyes and white flesh.
100411. No. 313. Small elongated and pointed red tubers with shallow eyes and white flesh.
100412. No. 314. Large round white tubers with shallow eyes and white flesh.
100413. No. 315. Small elongated mottled red tubers with numerous bright red eyes and white flesh.
100414. No. 316. A wild variety collected in the region of Ckaira, Peru, May 15, 1932, at 11,000 feet altitude. Small round white tubers with shallow eyes and white flesh.
- Nos. 100415 to 100423 were bought in a market May 23, 1932, in the region of Machu Picchu.
100415. No. 327. Small round tubers with white skin, deep eyes, and white flesh.
100416. No. 328. Small round white tubers with deep and pink eyes and white flesh.
100417. No. 329. Medium-sized, dark-purple ovate tubers with shallow eyes and white flesh.
100418. No. 330. Medium-sized, dark-red ovate tubers with deep eyes and white flesh.
100419. No. 331. Medium-sized ovate pink tubers with deep eyes and white flesh.
100420. No. 332. Medium-sized, flattened-oval red tubers with long shallow eyes and white flesh.

## 100379 to 100467—Continued.

100421. No. 333. Medium-sized, flattened-oval red and white mottled tubers with shallow eyes and white flesh.
100422. No. 334. Small oval pink tubers with deep round eyes and white flesh.
100423. No. 335. Small round pink tubers with shallow eyes and white flesh.
- Nos. 100424 to 100466 were collected May 25, 1932, in the Curco Valley, Peru, at 11,000 feet altitude.
100424. No. 336. *Yurac-Suyto*. Narrow elongated purple tubers with shallow eyes and yellow flesh.
100425. No. 337. *Huayraro*. Large oval pink and purple mottled tubers with shallow eyes and white flesh.
100426. No. 338. *Sullu-sullu*. Small round purple tubers with very deep eyes and yellow-white flesh.
100427. No. 339. *Huallata-cusi*. Elongated purple tubers with medium deep eyes and white flesh with purple center and vascular ring.
100428. No. 340. *Puca-Tiquilla*. Large irregularly ovate purple tubers with deep eyes and white flesh.
100429. No. 341. *Yana-cusi*. Small ovate purple tubers with medium deep eyes and white flesh.
100430. No. 342. *Leguecho*. Small oval purple tubers mottled with white which have medium deep eyes and yellow flesh.
100431. No. 343. *Tomira-pueva*. Large dark-red oval tubers with deep eyes and white flesh.
100432. No. 344. *Socco-huayco*. Small round black tubers with deep eyes and yellow flesh with purple center.
100433. No. 345. *Verundones*. Large long purple tubers with deep eyes and yellow flesh.
100434. No. 346. *Chusho-Aahui*. Small round white tubers mottled with purple which have deep eyes with prominent brow and white flesh.
100435. No. 347. *Trompus*. Large oval purple tubers with shallow eyes and white flesh streaked with purple.
100436. No. 348. *Sali-tomira*. Round medium-sized purple tubers with deep eyes and white flesh.
100437. No. 349. *Mora-Kompis*. Small round black and white mottled tubers with shallow eyes and white flesh.
100438. No. 350. *Chaquilla*. Medium-sized, dark-red elongated tubers with shallow eyes and white flesh.
100439. No. 351. *Yana-gguchillo*. Long narrow curved black tubers with thick skin, shallow eyes, and white flesh with purple in the center and a purple vascular ring.
100440. No. 352. *Paspa-Succho*. Small round white tubers with shallow pink eyes and white flesh.
100441. No. 353. *Puca-pumamaqui*. Narrow elongated pink tubers with shallow eyes and white flesh.
100442. No. 354. *Yana-gguccho*. Round purple medium-sized tubers with shallow eyes and yellow flesh flecked with purple.
100443. No. 355. *Yurac-tomira*. Small round white tubers with shallow eyes and white flesh.
100444. No. 356. *Tomira*. Small round pink tubers with deep eyes and yellow flesh.

## 100379 to 100467—Continued.

100445. No. 357. *Yana-Ruaña*. Medium-sized round purple tubers with deep eyes and yellow-white flesh.
100446. No. 358. *Puca-mama*. Small round dark red tubers with very deep eyes and yellow-white flesh.
100447. No. 359. *Huaycu-muscacha*. Round medium-sized purple tubers with deep eyes and white flesh.
100448. No. 360. *Puca-cusi*. Small round white tubers mottled with purple with deep eyes and white flesh.
100449. No. 361. *Kcompis*. Small round pink tubers with shallow eyes and white flesh.
100450. No. 362. *Yana-tiquilla*. Small round purple tubers with deep eyes and white flesh.
100451. No. 363. *Poque-cusi*. Small round tubers with white skin tinged with purple, shallow eyes, and white flesh.
100452. No. 364. *Orcco-huaña*. Long narrow white tubers tinged with purple, deep eyes with wide brows, and very white flesh.
100453. No. 365. *Aequiñas-chipetinas*. Round purple medium-sized tubers with deep eyes and yellow-white flesh.
100454. No. 366. *Mora-Kompis*. Small round white tubers mottled with pink which have deep eyes and white flesh.
100455. No. 367. *Kangueras*. Round medium-sized red tubers with deep eyes and white flesh.
100456. No. 368. *Yana-huaña*. Small round dark-red tubers with deep eyes and yellow-white flesh.

## 100379 to 100467—Continued.

100457. No. 369. *Mora-Quehuillo*. Very long curved white tubers mottled with purple with wide narrow eyes and white flesh with a purple vascular ring.
100458. No. 370. *Kcompis*. Small round pink tubers with shallow eyes and yellow-white flesh.
100459. No. 371. *Yana-Qquecco*. Round medium-sized purple tubers with deep eyes and yellow-white flesh with a pink vascular ring.
100460. No. 372. *Cuchauma*. Oblong purple tubers with deep eyes and white flesh.
100461. No. 373. *Yurac-Awa-caya*. Long narrow white tubers with shallow eyes and white flesh.
100462. No. 374. *Qquello-huaccoto*. Small round white tubers with medium deep eyes and white flesh.
100463. No. 375. *Huaccauquilla*. Small round pink tubers with shallow eyes and white flesh.
100464. No. 376. *Huasq-uña*. Long red tubers with deep eyes and white flesh which is red at the eyes.
100465. No. 377. *Yurac-compis*. Small round white tubers with pink shallow eyes and yellow-white flesh.
100466. No. 378. *Tomira-veru*. Round medium-sized tubers with thick red skin, deep eyes, and white flesh.
100467. No. 280. Collected May 17, 1932, in the region of Cuzco, Peru, at 11,000 feet altitude. Small irregularly round red-purple tubers with deep round eyes and yellow-white flesh.



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