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UNITED STATES DEPARTMENT OF AGRICULTURE



INVENTORY No. 117



Washington, D. C.

Issued January 1936

PLANT MATERIAL INTRODUCED BY THE DIVISION OF PLANT EXPLORATION AND INTRODUCTION, BUREAU OF PLANT INDUSTRY, OCTOBER 1 TO DECEMBER 31, 1933 (Nos. 103777-103988)

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INTRODUCTORY STATEMENT

Inventory no. 117 is a record of the plant material received by the Division of Plant Exploration and Introduction from October 1 to December 31, 1933 (nos. 103777-103988).

Although the total number of plants introduced during this period is unusually low, there are, nevertheless, certain introductions that deserve to be pointed out.

From the Department of Agriculture, Manila, P. I., there was received a collection of rice varieties (nos. 103854-103859) reported to be resistant to stem rot, and a special collection of rye selections (nos. 103953-103969) was presented by the Institute of Plant Industry at Leningrad. Twenty-two varieties of wheat, representing selections that have proved very resistant to leaf rust (nos. 103805-103826) were received from the experiment farm at Glen Innes, New South Wales, Australia.

In the field of deciduous fruits there should be mentioned a collection of locally grown varieties of peaches, apricots, and plums (nos. 103797-103803) presented by the agricultural officer of the Northwest Frontier Province, India. In this temperate mountainous region, the most northerly Province of British India, deciduous fruits have been grown for centuries.

Interest in rock gardening in the United States continues very strong, and for that reason a collection of 40 species of native Japa-

nese alpine plants (nos. 103861-103900) is noteworthy. This lot includes little-known species of *Anemone*, *Potentilla*, *Primula*, *Viola*, etc.

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

B. Y. MORRISON,
Principal Horticulturist, in Charge.

DIVISION OF PLANT EXPLORATION AND INTRODUCTION,
Washington, D. C., July 10, 1935.

¹ Died Jan. 3, 1934.

INVENTORY*

103777. BRASSICA sp. Brassicaceae.

From southwestern China. Seeds collected by Dr. J. F. Rock, agricultural explorer for the University of California Botanical Garden expedition. Received October 2, 1933.

Ko Mgyu A. (Tibetan name). *Maiting* (Chinese name). Rape turnip. The leaves are edible when young, and the root is boiled and eaten. The root is also cut up and used as fodder for cows, horses, and pigs, and is said to be very fattening.

103778. PHLEUM PHLEOIDES (L.) Karst. Poaceae. Timothy.

From Sweden. Seeds presented by Prof. Hernalfrid Witte, director, Swedish State Seed Testing Institute, Stockholm. Received October 5, 1933.

A variety, native to Sweden, introduced for the use of Department specialists.

103779. ANEMOPAEGMA CHAMBERLAINII (Sims) Bur. and K. Schum. Big- noniaceae.

From Venezuela. Seeds presented by C. A. Davila, commercial attaché to the Legation of Venezuela, Washington, D. C. Received October 10, 1933.

From the mountains near Caracas. A perennial vine which climbs by means of clawlike tendrils. The trumpet-shaped flowers are clear bright yellow.

For previous introduction see 9662.

103780. TRITICUM AESTIVUM L. (*T. vul- gare* Vill.). Poaceae.

Common wheat.

From Denmark. Seeds presented through Prof. H. C. Rafter, Michigan State College of Agriculture and Applied Science, East Lansing, Mich. Received October 18, 1933.

Danish-grown wheat, introduced for the use of Department specialists.

103781 to 103785. Phoenicaceae.

Palm.

From the Philippine Islands. Seeds presented by the director of forestry, Manila. Received October 2, 1933.

103781 to 103785—Continued.

103781. CORYPHA ELATA Roxb.

A tall palm up to 60 feet high, with spiny stems and fan-shaped leaves. It is native to the Philippine Islands.

For previous introduction see 74425.

103782. HETEROSPATHE ELATA Scheff.

A tall unarmed palm with a straight slender stem and long pinnate leaves, growing in protected situations where the rainfall is evenly distributed. It is one of the most attractive and graceful palms and will make a good plant for the conservatory and, possibly, a good house plant.

For previous introduction see 101212.

103783. LIVISTONA ROTUNDIFOLIA LUZON- ENSIS Becc.

A Philippine palm up to 35 feet high, with a straight terete trunk 6 to 10 inches thick. The fan-shaped leaves, 3 to 5 feet in diameter, are used for thatching. Native to the island of Luzon, Philippine Islands.

103784. ORANIA PALINDAN (Blanco) Merr.

Banga. A tall unarmed ornamental palm, native to the interior of Bukidnon, Mindanao, found between 900 and 1,500 feet altitude. The trunk is straight and remarkably uniform in diameter, rarely exceeding 6 inches. The leaves are pinnate and silvery beneath. The natives use the straight-grained durable wood for floors, fences, etc.

For previous introduction see 94197.

103785. PINANGA INSIGNIS Beccari.

A rather small palm with a slender smooth trunk about 6 inches in diameter, very graceful feathery leaves, and oval fruits 2 inches in length. The seeds are used by the natives as a substitute for the betel nut in preparing "buyo", a mixture of leaves of *Piper betle*, lime, and betel nuts which, when chewed, colors the saliva a characteristic red and is held to be a tonic and general stimulant.

For previous introduction see 54986.

*It should be understood that the names of 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 Plant Exploration and 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.

103786. COCCOLOBA LATIFOLIA Lam.
Polygonaceae.

From Paramaribo, Surinam. Seeds presented by the director of the Agricultural Experiment Station, through David Fairchild. Received October 3, 1933.

A tree with dark-green leaves from 1 to 2 feet in diameter, found on poor lands of the coastal plain in Surinam. While not a striking tree in some respects, the large size of the leaves makes it attractive for dooryard and park purposes.

For previous introduction see 99539.

103787. PAPAVER SCHINZEANUM Fedde.
Papaveraceae.

From Scotland. Seeds presented by the Royal Botanic Garden, Edinburgh. Received February 8, 1933. Numbered in October 1933.

A perennial herb, about a foot high, more or less caespitose in habit and gray hairy throughout. The leaves are narrowly obovate or oblong lanceolate, irregularly pinnately lobed, and 4 to 6 inches long. The flowers, borne singly on erect scapes, vary from orange to apricot in color. This poppy was first discovered in the Botanical Garden, Zurich, Switzerland.

103788 and 103789.

From Cuba. Seeds presented through Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soladad, Cienfuegos, through F. G. Walsingham. Received October 9, 1933.

103788. OPUNTIA ROBUSTA Wendl.
Cactaceae.

Presented by A. Bircher, Middle Egypt Botanic Station, El Saff, Egypt. A stout erect cactus, sometimes as much as 15 feet high, with many branches. The round or oblong joints, 8 to 10 inches long, are very thick and bluish green, with 8 to 12 stout brownish spines 1 or 2 inches long. The yellow flowers, 2 inches across, are succeeded by deep-red fruits about 3 inches long. Native to central Mexico.

103789. ANGELONIA CUBENSIS Robins.
Scrophulariaceae.

A tropical perennial herb about a foot high, with erect simple stems and narrowly oblong leaves about 2 inches in length. The small purplish blue flowers three-fourths of an inch long are in simple racemes. Native to Cuba.

103790 to 103793.

From Argentina. Seeds presented by G. H. Childs, Hollywood, Calif., who collected them near Lago San Martin, Territory of Santa Cruz. Received October 6, 1933.

103790 to 103792. BERBERIS spp.
Berberidaceae. **Barberry.**

Calefate.

103790. BERBERIS sp.

A large mountain variety with very seedy fruits.

103791. BERBERIS sp.

Collected in rather sandy soil near a lake.

103792. BERBERIS sp.

A large variety.

103790 to 103793—Continued.

103793. EMBOTHERIUM COCCINEUM Forst.

A handsome evergreen tree, with dark, glossy-green, somewhat leathery, ovate-lanceolate leaves 2 to 4 inches long and brilliant scarlet flowers about 1 inch long in dense axillary and terminal short racemes. It is native to Chile and becomes 40 feet high under favorable conditions.

103794 to 103796. AVENA spp. Poaceae.
Oats.

From Australia. Seeds presented by the manager of the New England Experiment Farm, Glen Innes, New South Wales. Received October 12, 1933.

Introduced for the use of Department specialists.

103794. AVENA BYZANTINA Koch.

Crema.

103795. AVENA sp.

Estramadura Grey.

103796. AVENA BYZANTINA Koch.

Vrome.

103797 to 103803.

From India. Seeds presented by the agricultural officer, Northwest Frontier Province, Taru Jabba, Peshawar. Received October 18, 1933.

A collection of locally grown varieties introduced for the use of Department specialists.

103797. AMYGDALUS PERSICA L. **Amygdalaceae.** **Peach.**

A variety with white fruit.

103798. AMYGDALUS PERSICA L. **Amygdalaceae.** **Peach.**

A variety with yellow fruit.

103799 to 103803. PRUNUS spp. **Amygdalaceae.**

103799 to 103801. PRUNUS ARMENIACA L. **Apricot.**

103799. Buvi. **103801. Sufadda.**

103800. Jab.

103802. PRUNUS CERASIFERA DIVARICATA (Ledeb.) C. Schneid. **Cherry plum.**

Dinga.

103803. PRUNUS CERASIFERA DIVARICATA (Ledeb.) C. Schneid. **Cherry plum.**

Dug.

103804. ACHRAS ZAPOTA L. **Sapotaceae.** **Sapodilla.**

From the Philippine Islands. Scions presented by the Economic Garden, Bureau of Plant Industry, Los Banos, Laguna, through Manuel Rozas, director of plant industry, Manila. Received October 23, 1933.

Ponderosa, a variety characterized by being 4 or 5 times larger than the wild type, with a superior quality and flavor. Some fruits are said to weigh 12 ounces, while the native fruit weighs about 3 ounces. The flesh of this variety is vinous, very sweet, and very juicy.

103805 to 103826. TRITICUM spp. Poaceae. Wheat.

From Australia. Seeds presented by S. L. Macindoe, plant breeder at the New England Experiment Farm, Glen Innes, New South Wales. Received October 17, 1933.

A collection of triticults which have proved very resistant to leaf rust under the conditions at the experiment farm in New South Wales. Introduced for the use of Department specialists. Received under the following varietal names:

103805 to 103825. TRITICUM AESTIVUM L. (T. vulgare Vill.). Common wheat.

103805. No. C 5347. *Baladi 26*.103806. No. C 5351. *Baladi 31*.103807. *Clarendon*.103808. No. C 5988. *H 44* × *Marquis 609*.103809. No. C 5985. *H 44* × *Marquis 592*.103810. No. C 5990. *H 44* × *Marquis 615*.103811. No. C 5983. *H 44* × *Marquis 586*.103812. No. C 6041. *Kenya* (crossbred).103813. No. C 5986. *Marquis 594* × *H 44*.103814. No. C 4610. *Marquis* × *Emmer*.103815. No. C 5090. *Marquis* × *Emmer 20*.103816. No. C 6284. *Marquis* × *Emmer*.103817. No. C 5085. *Marquis* × *Vernal Emmer 14*.103818. No. C 5976. *Pentad* × *Marquis 724*.103819. No. C 5978. *Pentad* × *Marquis 726*.103820. No. C 5979. *Pentad* × *Marquis 727*.103821. No. C 5981. *Pentad* × *Marquis 729*.103822. *Persian Black*.103823. No. C 8793. *Reward* × *H 44*.103824. *Theo*.103825. No. C 5084. *Vernal Emmer* × *Marquis 138*.

103826. TRITICUM DURUM Desf. Durum wheat.

Hodet form.

103827. AMYGDALUS PERSICA L. Amygdalaceae. Peach.

From the island of Malta. Seeds presented by J. Borg, superintendent, Office of Agriculture, Valletta. Received October 23, 1933.

A locally grown variety which has yellow flesh; introduced for the use of Department specialists.

103828 to 103830. PHOENIX spp. Phoenicaceae. Palm.

From Africa. Seeds presented by C. B. Taylor, botanist, Department of Agriculture, Zaria, Nigeria. Received October 27, 1933.

103828 to 103830—Continued.

103828. PHOENIX DACTYLIFERA L. Date palm.

Dabino. A cultivated palm over 30 feet high, with leaves 15 feet long. The inflorescence has a broad flattened spathe, and the edible fruits are 2 inches long.

103829. PHOENIX sp.

Kajinjiri fadama or *dabobin biri*. A wild palm found in the swamps around Zaria. The smooth stem, without any adhering old leaf bases, is 18 feet high, and the leaves are 7 feet long. The small edible fruits are less than an inch long, but the tree begins to fruit when only 6 years old and is said to live to be 100 unless damaged by wind or disease. The leaves are extensively used in mat weaving, and the stems are split and used for building purposes.

103830. PHOENIX sp.

Kajinjiri tudu or *kajinjiri daji*. A small wild palm found on the hills around Zaria, with a stem 6 feet high, covered with persistent old leaf bases. The leaves are about 4 feet long, and the small edible fruits are less than an inch in length. The tree begins fruiting when only 5 years old and is said to live over 100 years unless damaged by wind or disease. The leaves are extensively used for mat weaving, and the stem of the tree is split and used for building purposes.

103831 to 103833. TRITICUM AESTIVUM L. (T. vulgare Vill.). Poaceae. Common wheat.

From Brazil. Seeds presented through Reginald S. Castleman, American consul, Porto Alegre. Received October 30, 1933.

A collection of wheats, said to be immune from rust, developed at the Wheat Experiment Station at Bagé, which is maintained by the State Government of Rio Grande do Sul.

103831. M 12-32.

103832. *Trigo fronteira*.103833. *Trigo surpresa*.

103834 and 103835.

From India. Seeds grown in the Victoria Botanic Garden, Bombay, and presented through Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos, Cuba, by F. G. Walsingham. Received October 30, 1933.

103834. BAUHINIA BRACHYCARPA Wall. Caesalpinaceae.

An erect tropical shrub with slender branches and heart-shaped roundish nine-ribbed leaves, cleft a third down into two obtuse lobes. The flowers are in short dense racemes, and the pod is over an inch long. Native to India.

103835. CASSIA RENIGERA Wall. Caesalpinaceae.

A tropical tree from the mountains of Burma, with compound leaves a foot long. The 30 to 40 obtuse oblong leaflets, 1½ inches long, are leathery and finely hairy below. The cylindrical pod is a foot in length.

103836. STYLOSANTHES MUCRONATA
Willd. Fabaceae.

From Australia. Seeds presented by J. Michelmore & Co. Pty. Ltd., Mackay, Queensland. Received November 2, 1933.

A much-branched undershrub, 1 to 2 feet high, native to southern Asia and tropical Africa. The rigidly coriaceous trifoliolate leaves have oblong leaflets about one-half inch long, and the inconspicuous flowers are in small dense heads. Of possible value as a forage crop.

For previous introduction see 101186.

103837 to 103849. TRITICUM AESTIVUM
L. (*T. vulgare* Vill.). Poaceae.

Common wheat.

From Australia. Seeds presented by H. Wenholz, director of plant breeding, Department of Agriculture, Sydney, New South Wales. Received November 2, 1933.

A collection of Australian-grown wheats introduced for the use of Department specialists.

103837. *Baringa*.

103838. *Bolin*.

103839. *Bomen*.

103840. *Dindiloo*.

103841. *Firwhill*.

103842. *Florence*.

103843. *Genoa*.

103844. *Nabawa*.

103845. *Pilot*.

103846. *Queen Fan*.

103847. *S. H. J.*

103848. *Thew*.

103849. *Wardfr*.

103850. PAROCHETUS COMMUNIS
Buch-Ham. Fabaceae. Shamrock-pea.

From India. Seeds presented by F. H. Butcher, curator, Government Botanic Garden, Ootacamund. Received November 6, 1933.

A half-hardy perennial trailing vine with shamrocklike leaves, each leaflet marked at the base with a brown crescent. The pea-shaped flowers, nearly an inch across, have cobalt-blue standards and pink wings. It is native to tropical Asia.

For previous introduction see 103478.

103851. CASTANOPSIS PHILIPENSIS
(Blanco) Vidal. Fagaceae.

From the Philippine Islands. Seeds presented by Arthur F. Fischer, director of forestry, Department of Agriculture and Commerce, Manila. Received November 11, 1933.

A tall tropical evergreen tree up to 75 feet high, with lanceolate entire acuminate leaves 3 to 4 inches long. The edible nuts are about an inch long and resemble the European chestnut in flavor.

103852 and 103853.

From Africa. Seeds presented by Dr. Leon Croizat, New York, N. Y. Received November 9, 1933.

103852. *CANAVALIA ENSIFORMIS* (L.) DC.
Fabaceae. Jackbean.

From French Sudan.

103853. *EUPHORBIA* sp. Euphorbiaceae.

From Dodoma, Tanganyika Territory.

103854 to 103859. ORYZA SATIVA
L. Poaceae. Rice.

From the Philippine Islands. Seeds presented by Manuel L. Roxas, director of plant industry, Department of Agriculture, Manila. Received November 8, 1933.

A collection of rice varieties said to be resistant to stem rot under Philippine conditions. Introduced for the use of Department specialists.

103854. *Elonelon*.

103855. *Guinangang Str. 1*.

103856. *Macan Binar*.

103857. *Manticanon*.

103858. *Mancasar Str. 3*.

103859. *Ramay*.

103860. ONOSERIS sp. Asteraceae.

From Ecuador. Seeds collected by Elsie Brown, Pan American Union. Received November 16, 1933.

Collected on a mountain slope north of Quito. A daisylike plant with slender grayish-green leaves that form a thick low mat. The solitary, fragrant, pink flowers are borne on a leafless stem 10 to 12 inches long.

103861 to 103900.

From Japan. Seeds purchased from Tanaka Boekibu, Osaka. Received November 14, 1933.

A collection of native Japanese alpine plants.

103861. *ADENOPHORA NIKOENSIS* Franch.
Campanulaceae.

A low perennial, less than a foot high, closely allied to the campanulas, with sessile, lanceolate, finely toothed leaves about 1 inch long and small nodding spikes of sky-blue flowers three-fourths of an inch across.

103862. *ALSINE ARCTICA* (Stev.) Fenzl.
Silenaceae.

A herbaceous perennial that forms clumps a few inches high, with linear leaves half an inch long. The small white flowers are borne singly on short peduncles. Native to the arctic regions of northeastern Asia and North America.

103863 to 103865. *ANEMONE* spp. Ranunculaceae.

103863. *ANEMONE FLACCIDA* Fr. Schmidt.

An erect herbaceous perennial with stems 4 to 8 inches high and three-parted, incised-dentate basal leaves. The 1 or 2 long-stalked flowers are white appearing in midsummer in southeastern Siberia where the plant is also a native.

103864. *ANEMONE NIKOENSIS* Maxim.

An anemone with long-stemmed, triparted, incised basal leaves and solitary white flowers. Native to the highest mountains of central Japan.

103861 to 103900—Continued.

103865. ANEMONE PATENS INTERMEDIA Mak.

A herbaceous perennial with silky hairy stems and leaves about 5 inches high. The lower leaves are petioled, the upper ones sessile, all much divided into narrow linear acute lobes. The yellowish-white flower is about 1 inch across.

103866. ARNICA UNALASCHENSIS Less. Asteraceae.

A low perennial, about 6 inches high, with a simple stem and hairy, decussate, membranous, somewhat spatulate leaves less than an inch long. The small solitary flower heads are sulphur yellow. Native also to northern Alaska.

103867. CAMPANULA DASYANTHA Bieb. Campanulaceae.

A hardy perennial campanula, with the lower leaves spatulate, the upper linear-lanceolate, and all crenate and pubescent. The flowers are sky blue, with the calyx and petal margins very hairy.

103868. CASSIOPE LYCOPODIODES (Pall.) D. Don. Ericaceae.

A low creeping plant with slender stems, scalelike crowded leaves, and nodding, white, bell-shaped flowers borne singly on erect peduncles. Native to northeastern Asia.

For previous introduction see 102296.

103869. CHRYSANTHEMUM WEYRICHII (Max.) Miyabe.

A hardy perennial about 8 inches high, with fleshy pinnately parted leaves about 2 inches long and flower heads $1\frac{1}{2}$ inches across, with lilac ray flowers and yellow disks. Native to Sakhalin Island.

103870. CORDALIS REMOTA Fisch. Papaveraceae.

A perennial herb with a tuberous rootstock and variously incised biternate leaves, often red margined. The exterior petals of the violet flowers are two-lobed and minutely toothed. Native to southeastern Asia.

103871. CRAWFURDIA TRINERVIS (Blume) Hassk. Gentianaceae.

Creeping gentian. A low-growing vine with pale gentianlike flowers followed by large oblong deep-red fruits, white inside, with many seeds.

For previous introduction see 67762.

103872. DIANTHUS SUPERBUS MONTICOLA Makino and Nemoto. Silenaceae.

A dwarf variety of the lilac pink with larger flowers that vary in color from rose pink to purplish pink.

103873. DIAPENSIA OBOVATA Nakai. Diapensiaceae.

A small compact evergreen, more or less woody perennial that forms a cushionlike tuft 1 to 2 inches high, with small white flowers on stems 1 to 2 inches high. The small entire leaves are flat and obovate-cuneate. Native to northeastern Asia.

103861 to 103900—Continued.

103874. DICENTRA PUSILLA Sieb. and Zucc. Papaveraceae.

A charming hardy perennial with the leaves finely divided into linear segments and with large clear-pink flowers.

103875. EPIGAEA ASIATICA Maxim. Ericaceae.

An Asiatic trailing arbutus, very similar to the American species but differing chiefly by being stouter throughout. The racemes usually consist of 6 to 12 flowers.

103876. ERANTHIS PINNATIFIDA Maxim. Ranunculaceae.

A dainty herbaceous perennial, allied to the anemone, with long-stemmed, pinatifid leaves about 2 inches across and white flowers about an inch wide.

103877. GEUM PENTAPETALUM (L.) Mak. Rosaceae.

A low creeping shrubby perennial with pinnate, rose-like foliage and solitary rather large white flowers about 1 inch across, with 8 to 10 petals borne in April on a slender stem. Native also to Kamchatka.

103878. JEFFERSONIA DUBIA (Max.) Benth. and Hook. Berberidaceae.

A stemless alpine perennial native to northeastern Asia, with a slender rhizome and numerous long-stemmed, cordate-reniform leaves about 3 inches long and wide. The large blue flowers are on a scape 6 inches high.

103879. LEONTOPIDIUM FAURIEI Hand.-Mazz. Asteraceae.

An alpine perennial, white, hairy throughout, with a slender stem up to 8 inches high and a rosette of erect, spreading narrowly spatulate, acute leaves up to $2\frac{1}{2}$ inches long. The small whitish flower heads are in a small dense cluster.

103880. LEONTOPIDIUM JAPONICUM Miq. Asteraceae.

An alpine plant related to the edelweiss, with an erect stem less than a foot high and lanceolate dark-green leaves over an inch long having densely woolly lower surfaces. The grayish flower heads, in terminal corymbs, are also densely woolly.

103881 to 103883. POTENTILLA spp. Rosaceae.

103881. POTENTILLA DICKINSONII Franch. and Sav.

A perennial herb with a stoloniferous rhizome and slender, erect little-branched stems. The basal leaves are pinnate with 2 or 3 rhomboid leaflets, while the stem leaves are ternate with the lower stem leaves long-stemmed. The light-yellow flowers are in lax corymbs.

103882. POTENTILLA MEGALANTHA Takeda.

A stout perennial with a fleshy rootstock from which arise numerous heavy stems often more than a foot high. The thick radical leaves, often long-stemmed, are cordate, ternate, and up to 3 inches across, while the stem leaves are simple, sessile, and much smaller. The large yellow flowers are over 1 inch across.

103861 to 103900—Continued.

103883. POTENTILLA NIVEA L.

An alpine perennial, with a stout rootstock, densely white-tomentose throughout. The leathery leaves are 1 to 2 inches long, with 3 to 5 obovate serrate leaflets. The yellow flowers, half an inch across, are on short stout peduncles. Native to northeastern Asia.

103884 to 103886. PRIMULA spp. Primulaceae. Primrose.

103884. PRIMULA FAURIAE Franch.

An alpine primrose with a long fibrous rhizome and rhombic or broadly ovate, lightly crenate, long-stemmed leaves, yellow mealy beneath and about one-half inch across. The small pink flowers are in umbels of 6 to 8.

103885 and 103886. PRIMULA REINII Franch. and Sav.

A primula of the Fallaces section with roundish, deeply cordate, incised-crenate leaves densely covered with long hairs, and 4 to 6 inches in diameter. The scape, scarcely longer than the leaves, bears 2 to 6 pale-violet flowers.

103885. Collected on Mount Hakone.

103886. Collected on Mount Yatsugatake.

103887. RANZANIA JAPONICA T. Ito. Berberidaceae.

A hardy perennial closely allied to the mayapple of North America. The three lobes of the heart-shaped leaves are orbicular, and the solitary white flower is scarcely an inch across. Native to Mount Togakushe, Japan.

103888. RHODODENDRON BRACHYCARPUM D. Don. Ericaceae.

Fujiyama rhododendron.

A shrub 10 to 15 feet high with elliptic to oblanceolate leaves 3 to 9 inches long, cuneate to auriculate at the base, dark green above, and gray tomentose beneath. The broadly funneliform flowers, about 2 inches across, are white or yellow, striped and flushed pink, and spotted greenish brown.

For previous introduction see 95629.

103889. SAXIFRAGA BRONCHIALIS L. Saxifragaceae.

A low compact perennial 4 to 8 inches high, with ascending stems densely leafy at the base. The leaves are stiff, gray green, shiny, and linear-lanceolate, and the small yellowish-white flowers are dotted with orange-red. Native to northeastern Asia and Alaska.

103890. SAXIFRAGA CORTUSAEFOLIA ALPINA Matsum. and Nakai. Saxifragaceae.

A rather low perennial saxifrage, not stoloniferous. The dark-green basal leaves are rather fleshy and seven lobed, with the lower part reddish. The white flowers are in a lax panicle with long, very slender pedicels. Native to Mount Shirouma, Shinano Province, Japan.

103861 to 103900—Continued.

103891. SHORTIA UNIFLORA Maxim. Diapensiaceae.

Variety *grandiflora*. A large-flowered form of a perennial herb native to Japan, closely resembling the native American *Shortia galacifolia*. The cordate leaves are broader than long and deeply sinuate toothed, and the white bell-shaped flowers, an inch across, are borne on slender peduncles 3 to 8 inches tall.

103892. TRAUTVETTERIA PALMATA Fisch. and Mey. Ranunculaceae.

A perennial herb 2 to 3 feet high, with alternate, large leaves divided into 5 to 11 incised lobes. The white flowers are in terminal cymes. Native to northeastern Asia and northern North America.

103893. TRICYRTIS AFFINIS Makino. Melanthiaceae.

An erect perennial 1 to 4 feet high, with oblong-lanceolate or ovate-oblong, nearly sessile, thinly hairy, pale-green leaves 2 to 4 inches long. The purple-spotted white flowers, an inch across, are borne in terminal clusters.

103894. TRICYRTIS HIRTA Hook. Melanthiaceae. Hairy toadily.

A perennial herb 1 to 3 feet high, covered with soft whitish spreading hairs. The cordate-lanceolate leaves clasp the stem, and the white lilylike flowers are covered with purple spots.

For previous introduction see 101796.

103895. TULIPA LATIFOLIA Makino. Liliaceae.

A Japanese tulip, very similar to *T. edulis*, but with shorter and broader leaves, and small white flowers on a stem 6 to 8 inches high.

103896. VERATRUM JAPONICUM (Baker) Loes. Melanthiaceae.

A hardy perennial 2 to 4 feet high, with slender stems. The oblong, plicate leaves are a foot long, and the very dark purple flowers are in lax racemes. It is closely related to *Veratrum nigrum*, of which it may be considered a geographic variety, with slightly larger flowers and a more slender habit.

103897 to 103900. VIOLA spp. Violaceae. Violet.

103897. VIOLA CHAEROPHYLLOIDES (Regel) Makino.

A hardy violet about 6 inches high, with broad, finely divided leaves and rather large white flowers produced in April. Native to Chosen and said to be adapted for growing in partial shade.

103898. VIOLA PATRINII Ging.

A low stemless perennial, native to northeastern Asia, with a stout rootstock, ovate-oblong leaves, and lilac flowers about one-half inch in diameter.

103899. VIOLA VERECUNDA A. Gray.

A Japanese violet closely related to *V. canadensis*. The 3 or 4 kidney-shaped leaves are slender and erect, and the flowers are white with purple veins.

103861 to 103900—Continued.

103900. VIOLA VIOLACEA Wiesb.

A stemless violet with long stolons and triangular cordate obtuse leaves. The fragrant flowers are violet, with the spur paler violet. It is also native to Austria.

103901 and 103902.

From Australia. Seeds presented by W. E. Schevill, of Harvard University, with the Ellis expedition for the Museum of Comparative Zoology, Cambridge. Received November 17, 1933.

Collected 40 miles west of Barrow Creek, Northern Territory, in September 1932.

103901. ELAEOCARPUS sp. Elaeocarpaceae.

A plumlike fruit.

103902. SOLANUM sp. Solanaceae.

Quinine-plum. A very bitter plumlike fruit.

103903 to 103906. TRITICUM AESTIVUM L. (*T. vulgare* Vill.). Poaceae.

Common wheat.

From Australia. Seeds presented by H. Wenholtz, director of plant breeding, Department of Agriculture, Sydney, New South Wales. Received November 17, 1933.

A collection of locally grown Australian wheat, introduced for the use of Department specialists.

103903. Cleveland. 103905. Queen Fan.

103904. Ford. 103906. Rymer.

103907. TAMUS COMMUNIS L. Dioscoreaceae.

From Italy. Seeds received through David Lumsden, Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, November 20, 1933.

A twining herbaceous vine with a tuberous root, ovate-cordate, obscurely lobed leaves about 3 inches long, and loose clusters of small yellowish-green flowers followed by bright-red berries. Native to the Mediterranean countries.

For previous introduction see 76768.

103908 to 103927.

From Africa. Seeds and bulbs presented by Rev. Kenneth H. Prior, Missão de Dondi, Bela Vista, Angola. Received November 17, 1933.

103908. ALBIZZIA sp. Mimosaaceae.

Okapianganu. A useful timber tree. The hard wood has a pungent odor when planed; it resists decay.

103909. ALBIZZIA sp. Mimosaaceae.

Omake. A close-grained, hard wood timber tree with greenish-brown bark. The wood resists decay.

103910 and 103911. BRACHYSTEGIA spp. Caesalpinaceae.

The brachystegias are unarmed trees, native to tropical Africa, with pinnate leaves and small inconspicuous flowers in dense racemes.

103908 to 103927—Continued.

103910. *Omanda*. A useful timber tree whose wood is used for agricultural implements; the bark of saplings is made into rope by the natives of Angola.

103911. *Usamba*. A good shade tree with an umbrella top. The timber is not used.

103912. CHRYSOPHYLLUM sp. Sapotaceae.

Onjali. An erect tropical tree with milky juice, leathery short-stemmed leaves, and dense clusters of small whitish flowers, followed by pods resembling those of the honeylocust. The pods are eaten by antelopes. The timber of the tree is not used.

103913. FICUS sp. Moraceae.

Ukuyu. A wild fig with very soft, light, coarse-grained wood. The tree grows rapidly from seed or cuttings and fruits abundantly.

103914 and 103915. GLADIOLUS spp. Iridaceae.

Red-flowered species.

103914. Seeds. 103915. Bulbs.

103916. LUFFA CYLINDRICA (L.) Roemer. Cucurbitaceae. Suakwa towelgourd.

Introduced for the use of Department specialists.

103917 and 103918. MORAEA spp. Iridaceae.

A blue-flowered species.

103917. Bulbs. 103918. Seeds.

103919. PARINARI MOBOLA Oliver. Rosaceae.

Usia. A handsome forest tree with dense evergreen foliage. The leaves are deep green above and white beneath, and the fruit, much like an olive in appearance, has an edible kernel in a very hard shell. The hard wood is used for furniture and building purposes.

For previous introduction see 87474.

103920. SECURIDACA LONGIPEDUNCULATA Fres. Polygalaceae.

Rhodesia violet-tree.

Utata. A much-branched divaricate shrub, sometimes 10 feet high, native to Upper Guinea, Ethiopia, and Mozambique. The coriaceous leaves are revolute-margined when dry, and the flowers, in terminal spreading racemes, are rose, shades of purple or violet, or variegated with white.

For previous introduction see 81982.

103921. TOUNATEA MADAGASCARIENSIS (Desv.) Kuntze. Caesalpinaceae.

Onganha. A tropical leguminous tree, without spines, that grows 20 to 30 feet high in central and south-central Africa. The compound leaves are about 6 inches long, with 9 to 11 leathery green oblong leaflets. The roundish yellow flowers, almost an inch across, are solitary or in small racemes. Native to south-central Africa and Madagascar.

103922. (Undetermined.)

Olohengo. A native wild plum; used for jelly and preserves.

103908 to 103927—Continued.

103923. (Undetermined.)

Onjilasonde. A timber tree whose pretty dark-brown wood is used for cabinetwork.

103924. (Undetermined.)

Bulbs.

103925. (Undetermined.)

Large bulbs.

103926. (Undetermined.)

Bulbs.

103927. (Undetermined.)

Osut. A small tree with hard close-grained wood which resists decay.

103928 to 103937.

From Cuba. Seeds presented by Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos, through F. G. Walsingham. Received November 20, 1933.

103928. *ARISTOLOCHIA BRASILIENSIS* Mart. and Zucc. Aristolochiaceae.

A tropical vine, sometimes growing to a length of 15 feet, with long-stemmed, reniform, heart-shaped leaves 6 to 8 inches wide. The large, dingy-yellow flower, with purplish marks, is strongly two-lipped, with the upper lip 4 inches long and purple within, and the lower lip the same length but 5 to 7 inches wide. Native to Brazil.

103929. *CORDIA NITIDA* Vahl. Boraginaceae. Glossy cordia.

Red manjack or *West Indian cherry.* A shrubby tree with harsh glossy foliage, white flowers, and red viscid berries which are eaten by the wild doves.

For previous introduction see 98832.

Nos. 103930 to 103932 were collected in Mexico by Prof. Juan Balme, botanical explorer.

103930. *CRESCENTIA ALATA* H. B. K. Bignoniaceae. Calabash-tree.

A small ornamental tree closely allied to *C. cujete*; it is 10 to 20 feet high, with fasciated trifoliate leaves. The brownish, rank-scented flowers, borne singly on the trunk, are followed by hard globose fruits about 2 inches in diameter. The tree is occasionally cultivated in the Philippines where it was introduced from Mexico at an early date.

103931. *FEROCACTUS LATISPINUS* (Haworth) Britt. and Rose. Cactaceae.

A stout globular cactus about a foot high, with 10 to 15 white to pink spines arising from each areole. Of these spines the 4 or 5 central ones are much stouter, with one much flattened and hooked. The campanulate flowers, about 1 inch long, are rose to purple. Native to Mexico.

103932. *IPOMOEA ARBORESCENS* Don. Convolvulaceae.

An erect woody treelike plant that may reach a height of 15 feet or more. The twigs and oval cordate leaves are fine velvety pubescent, and the white flowers are over 2 inches in diameter. It is native to Mexico and thrives best in cool dry air.

103933. *THUNBERGIA ERECTA* (Benth.) T. Anders. Acanthaceae.

103928 to 103937—Continued.

An evergreen climbing shrub, 6 to 8 feet high, with ovate leaves about 2 inches long and solitary blue flowers with orange throats, over an inch long, with stalks about the same length. Native to western tropical Africa.

Nos. 103934 and 103935 were collected in Mexico by Prof. Juan Balme, botanical explorer.

103934. *OPUNTIA STREPTACANTHA* Lem. Cactaceae. Pricklypear.

A much-branched cactus, sometimes 15 feet high, with a trunk 18 inches in diameter. The dark-green, obovate to orbicular joints, about a foot long, are covered with numerous white spines. The orange-yellow flowers, 3 inches across, are followed by dull-red, globular fruits about 2 inches in diameter. Native to central Mexico.

103935. *PACHIRA INSIGNIS* (Swartz) Sav. Bombacaceae.

Variety *Rosea.* A beautiful tropical tree, native to the West Indies and northern South America, which becomes about 30 feet tall, with a trunk up to a foot in diameter. The beautiful fragrant flowers, rose-colored in this form and about 7 inches long, are followed by large woody capsules containing numerous edible seeds which look and taste very much like chestnuts.

For previous introduction see 58582.

103936. *PINUS INSULARIS* Endl. Pinaceae. Pine.

A tall three-needle tropical pine which grows on the highlands in the Philippine Islands between 3,000 and 8,000 feet altitude. The flaccid slender leaves are 7 to 9 inches long, and the ovoid cones are about 3 inches in length. This lot of seed came originally from the Bureau of Forestry, Manila.

For previous introduction see 101448.

103937. *TABEBUIA GUAYACAN* (Seem.) Hemsl. Bignoniaceae.

Collected in Mexico by Prof. Juan Balme, botanical explorer. A tall tropical tree becoming nearly 100 feet high, with smooth pale-gray bark and opposite long-stemmed digitately compound leaves with five very large leaflets. The handsome yellow flowers are 3 inches long. The olive-brown wood is very dense and hard and is used for tool handles, boats, etc. Native from Panama to Guatemala.

103938. *PHYLLOSTACHYS* sp. Poaceae. Bamboo.

From Glenn Dale, Md. Plants presented by F. H. Dorsett; propagated from material collected in China by the late Frank N. Meyer. Received December 11, 1933.

A hardy bamboo of rapid-spreading habit, 12 feet high, with a conspicuous glaucous band beneath each node and the upper half of the internode at first often glaucous. The lower culm sheaths have irregular, ill-defined, brownish-black blotches. The lanceolate leaves, of which there are 3 or 4 on a branchlet, have usually 5 pairs of secondary veins; the leaves do not curl so quickly when the branches are cut as do those of most bamboos.

103939 and 103940.

From Africa. Seeds presented by J. E. Spingarn, America, N. Y. Received November 21, 1933.

103939 and 103940—Continued.

103939. CLEMATIS SIMENSIS Fresn. Ranunculaceae.

From Kisantu, Bas-Congo, Belgian Congo. A tropical climber with pinnately cut leaves; the membranous leaflets, usually 3 or 5, are ovate-lanceolate and crenate. The flowers, three-fourths of an inch across, are in axillary clusters. Native to Ethiopia.

103940. CLEMATIS STANLEYI Hook. Ranunculaceae.

From the Transvaal, Union of South Africa. An erect shrubby clematis with very variable foliage and flowers. In the native state the flower stems are 2 to 3 inches long, while in cultivation they reach a length of 8 to 10 inches. The flowers vary in size from 1 to 3 inches in diameter and in color from white to pinkish purple.

For previous introduction see 48307.

103941. CASIMIROA TETRAMERIA Millsp. Rutaceae. Matasano.

From Honduras. Seeds presented by R. Austin Aclý, American consul, Tegucigalpa. Received November 22, 1933.

A Central American tree about 30 feet in height, with pale warty branches, digitate leaves about 8 inches long, and axillary panicles of greenish flowers. The edible fruit, approximately the size of an orange, has a green skin and spiny protuberances sparsely scattered over the surface; the white or yellow flesh is sweet or slightly sour and encloses 2 or 3 large black seeds.

For previous introduction see 55445.

103942 to 103948. ANANAS SATIVUS Schult. f. Bromeliaceae. Pineapple.

From Hawaii. Plants presented by J. L. Collins, geneticist, Experiment Station of the Association of Hawaiian Pineapple Cannery, Honolulu. Received November 27, 1933.

103942. Bermuda. A variety of unknown origin.

103943. Hilo Cayenne. A variety very similar to the *Cayenne* in general appearance; however, the plants do not produce slips, or only a very few, as contrasted with the 3 or 4 slips produced annually by the *Cayenne*.

103944. Pernambuco. A variety from South America.

103945. Ruby. A variety obtained from Singapore a number of years ago; we have more recently obtained what appears to be the same thing under the name *Mauritius*.

103946. Sarawak. A variety much like the *Cayenne*, secured from Singapore a number of years ago.

103947. Wild Brazil. A self-seeding type obtained in Brazil.

103948. Wild Kailua. A variety growing wild in the Kailua region of the island of Hawaii; origin not known.

103949 to 103951. AVENA BYZANTINA Koch. Poaceae. Oats.

From India. Seeds presented by Beni Pashad, fodder specialist, Agricultural College, Lyallpur. Received December 1, 1933.

Introduced for the use of Department specialists.

103949 to 103951—Continued.

103949. Algerian Red oat no. 35.

103950. Algerian Red oat no. 61.

103951. Local Fo. S. 1/29.

103952. LIVISTONA ROTUNDIFOLIA (Lam.) Mart. Phoenicaceae.

Java fan palm.

From Cuba. Seeds presented by Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos, through F. G. Walsingham. Received December 4, 1933.

A fan-leaved palm closely related to the Chinese fan palm (*Livistona chinensis*). The erect, brownish-black trunk is 40 to 50 feet high, and the roundish leaves are 3 to 5 feet across with spiny petioles up to 6 feet in length. Native to Java.

103953 to 103969. SECALE CEREALE L. Poaceae. Rye.

From the Union of Soviet Socialist Republics. Seeds presented by Dr. N. I. Vavilov, director, Institute of Plant Industry, Leningrad. Received December 7, 1933.

A collection of ryes grown in the Soviet Socialist Republics, introduced for the use of Department specialists.

103953. No. 1. **103962. No. 10.**

103954. No. 2. **103963. No. 11.**

103955. No. 3. **103964. No. 12.**

103956. No. 4. **103965. No. 13.**

103957. No. 5. **103966. No. 14.**

103958. No. 6. **103967. No. 15.**

103959. No. 7. **103968. No. 16.**

103960. No. 8. **103969. No. 17.**

103961. No. 9.

103970 to 103972.

From Cuba. Seeds presented by Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos, through F. G. Walsingham. Received December 6, 1933.

103970. ADENANTHERA MICROSPERMA Teijsm. and Binn. Mimosaceae.

Seeds from the Botanic Garden, Buitenzorg, Java. A handsome tropical tree closely related to the mimosas, with attractive, clean-cut foliage and twisted pods bearing bright-red beans. It is native to the East Indies and is considered a valuable timber tree because of its strong dark-brown wood, which is very hard in spite of the rapid growth of the tree.

For previous introduction see 63758.

103971. HETEROSPATHE ELATA Scheff. Phoenicaceae. Palm.

For previous introduction and description see 103782.

103972. ZAMIA KICKXII Miq. Cycadaceae.

A tropical palmlike plant with a very short thick stem and gracefully arching, pale-green pinnate leaves about a foot in length, composed of about 12 pairs of lanceolate pinnae 1 or 2 inches long. It is native to Cuba.

103973 and 103974. PHOENIX DACTYLIFERA L. Phoenixaceae. Date palm.

From Africa. Seeds presented by the Department of Agriculture, Nigeria. Received December 9, 1933.

Date palms, said to be growing wild in Nigeria; introduced for the use of Department specialists.

103975. CASTANEA SATIVA Mill. Fagaceae. Spanish chestnut.

From the Union of Soviet Socialist Republics. Seeds presented by Prof. A. Popov, Department of New Cultures and Introduction, Leningrad. Received December 9, 1933.

Chestnuts collected in the northern Caucasus region; introduced for the use of Department specialists.

103976. ADONIDIA MERBILLII Beccari. Phoenixaceae. Palm.

From the Philippine Islands. Seeds presented by Mount Mahiling Agricultural College, Laguna, through the director of forestry, Manila. Received December 19, 1933.

Bonga de China or *bonga de Jolo*. A medium-sized palm with graceful, somewhat curved pinnate leaves, resembling the common betel-nut palm, but not so tall. The crimson fruits, less than an inch long, are borne just below the leaves. In Manila this palm is grown as an ornamental.

For previous introduction see 94177.

103977. VICIA PANNONICA Crantz. Fabaceae. Vetch.

From lower Austria. Seeds purchased from Gustav & Wilhelm Löw, Angern. Received December 19, 1933.

Hungarian vetch. An annual vetch, native to Europe and Asia. It makes a less viny growth than common vetch (*Vicia sativa*) or hairy vetch (*V. villosa*), but is a vigorous grower attaining a full stem length of from 2½ to 3 feet. It is more winter-hardy than common vetch and will seldom winter-kill as far north as Washington, D. C. This species is especially adapted to poorly drained areas and is the best of the vetches in this regard.

For previous introduction see 52274.

103978 to 103980. AVENA spp. Poaceae. Oats.

From India. Seeds presented by the Imperial Institute of Agricultural Research, Pusa, at the request of the Indian Trade Commissioner, London. England. Received December 20, 1933.

A collection of hybrid oats, developed in India. Introduced for the use of Department specialists.

103978. B. S. 2. 103980. Hybrid J.

103979. Hybrid C.

103981. FICUS CARICA L. Moraceae. Common fig.

From Spain. Cuttings presented by Ramon Sala Roqueta, Balaguer. Received February 6, 1926. Numbered in December 1934.

Variety *Fraga*; fruits thick, white with thin skin and rosy flesh; very suitable for drying.

103982. PYRACANTHA CRENULATA (Don) Roemer. Malaceae.

Nepal firethorn.

From California. Seeds presented by the California Nursery Co., Niles. Received December 22, 1933.

This appears to be the typical form of the Nepal firethorn, with stiff, narrow-elliptic, crenulate, shining dark-green leaves with a short bristle at the tip. The showy red berries, one-fourth to five-eighths of an inch in diameter, are in loose corymbs.

103983. AMYGDALUS PERSICA L. Amygdalaceae. Peach.

From the Union of Soviet Socialist Republics. Scions presented by A. Popov, Department of New Cultures and Introduction, Leningrad. Received December 26, 1933.

Variety *ferganensis*.

For previous introduction see 102706.

103984 to 103987.

From Cuba. Seeds presented by Robert M. Grey, superintendent, Atkins Institution of the Arnold Arboretum, Soledad, Cienfuegos, through F. G. Walsingham. Received December 26, 1933.

103984. ABROMA AUGUSTA L. f. Sterculiaceae.

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 98795.

103985. ARISTOLOCHIA TAGALA Cham. Aristolochiaceae.

From the Botanic Garden, Straits Settlements. A tropical climber with ovate-acuminate and deeply cordate-auriculate leaves about 4 inches long. The greenish-purple flowers, with the limb extended into a tongue-shaped lip, are in small racemes. Native to Luzon, Philippine Islands, and allied to *Aristolochia indica* L.

103986. JATROPHA PODAGRICA Hook. Euphorbiaceae.

A handsome Central American shrub 1 to 2 feet high, with petiole, 3- to 5-lobed leaves 4 to 8 inches wide and orange flowers with scarlet petals.

For previous introduction see 73246.

103987. PYCNOSTACHYS UTRICIFOLIA 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.

For previous introduction see 99458.

103988. ZEA MAYS L. Poaceae. Corn.

From Australia. Seeds presented by the Grafton Experiment Farm, through H. Wenholz, director of plant breeding, Department of Agriculture, Sydney, New South Wales. Received December 20, 1933.

Fitzroy. Introduced for the use of Department specialists.

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