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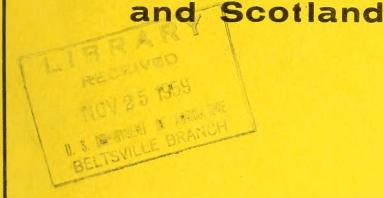
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# PLANT EXPLORATIONS

Ornamentals in Italy, Southern France, Spain, Portugal, England,



Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
in cooperation with

Longwood Gardens of the Longwood Foundation, Inc.

## PLANT EXPLORATIONS

Ornamentals in Italy, Southern

France, Spain, Portugal, England,

and Scotland

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#### ACKNOWLEDGMENTS

From the onset, our trip for ornamental plants brought enthusiastic and friendly cooperation from a host of individuals in the United States and Europe. Because it is not possible to list the names of the numerous persons that participated in more than 80 localities visited in Italy, France, Spain, Portugal, England, and Scotland, my personal thanks are extended to all those who offered hospitality and cooperation throughout the trip. I am grateful for the privileges of collecting freely in the gardens visited.

Plant materials from private gardens, botanic gardens, experiment stations, and arboretums were acquired on an exchange basis. At commercial nurseries material was purchased.

Our Agricultural Attachés in Lisbon, Madrid, Rome, Paris, and London at all times freely provided much valuable assistance. Finally, thanks are due the Longwood Gardens for making the trip possible in cooperation with the U.S. Department of Agriculture.

Frederick G. Meyer Crops Research Division Agricultural Research Service United States Department of Agriculture Beltsville, Maryland

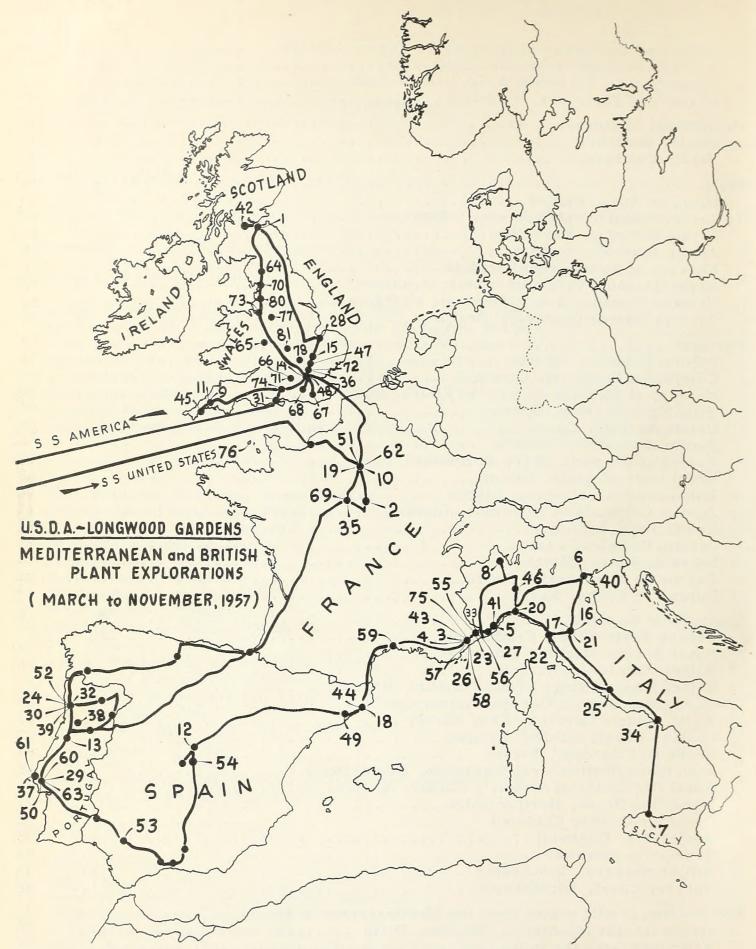


Figure 1. -- Map showing itinerary and collecting stops. (See Key to Map for identification of locations.)

#### COLLECTING LOCALITIES

The following enumeration of collecting localities includes botanic gardens, private gardens, nurseries, experiment stations, and arboretums from which plant introduction materials were acquired. All localities listed below were visited with the exception of Nos. 65, 66, 72, 73, 76-81 (fig. 1). Introductions from these latter British nurseries were obtained through orders placed with proprietors during visits to the autumn flower show at Southport, and at several horticultural shows of the Royal Horticultural Society in London.

#### KEY TO MAP

- 1. Royal Botanic Garden, Edinburgh, Scotland (Sept. 3-23).
- 2. Arboretum des Barres, Nogent-sur-Vernisson, Loiret, France (Mar. 10).
- 3. Jardin Botanique, "Les Cedres," St. Jean, Cap Ferrat (Alpes-Maritime), France (May 1, June 15 to July 17).
- 4. Nursery of G. L. Dental, Golfe-Juan (Alpes-Maritime), France (July 12).
- 5. Stazione Sperimentale de Floricultura "O. Raimondo, "San Remo, Italy (June 12, July 15).
- 6. Botanical Garden, Padua, Italy (June 7-8).
- 7. Botanical Garden, Palermo, Sicily (May 15-20).
- 8. Villa Taranto, Pallanza, Lake Maggiore, Italy (May 4-8).
- 9. Caerhays Castle, Gorran, near St. Austell, Cornwall, England (Oct. 23-25).
- 10. Arboretum, Vilmorin-Andrieux, Verrieres-le-Buisson, Seine-et-Oise, France (Mar. 7, Aug. 23).
- 11. Garden of G. H. Johnstone, Grampound Road, Trewithen, Cornwall, England (Oct. 22).
- 12. Botanical Garden, Madrid, Spain (Apr. 18, July 26).
- 13. Botanical Garden, Coimbra, Portugal (Apr. 3-6, Aug. 13).
- 14. Royal Botanic Gardens, Kew, Surrey, England (Oct. 3-11, Nov. 1-12).
- 15. Cambridge Botanic Garden, Cambridge, England (Sept. 29).
- 16. Giardini di Marignolle, Florence, Italy (May 28).
- 17. Botanical Garden, Florence, Italy (May 27-31).
- 18. Pinya de Rosa, Jardin de Aclimaticion, Blanes, Prov. Gerona, Spain (July 21).
- 19. Nursery of Marcel Lecoufle, Boissy St. Leger, Seine-et-Oise, France (Aug. 24).
- 20. Botanical Garden, Genoa, Italy (June 10).
- 21. Istituto Tecnico Agrario Statale, Florence, Italy (May 29).
- 22. Botanical Garden, Pisa, Italy (June 1).
- 23. Villa Roquebrune, Cap Martin, (Alpes-Maritime), France (Apr. 26, July 16).
- 24. Botanical Garden, Oporto, Portugal (Mar. 24).
- 25. Botanical Garden, Rome, Italy (May 23).
- 26. La Leonina, Beaulieu-sur-Mer (Alpes-Maritime), France (July 17).
- 27. La Mortola, Villa Hanbury, Ventimiglia, Italy (Apr. 23, June 28, July 12, 15). 28. Talbot Manor, Kings Lynn, Fincham, Norfolk, England (Sept. 25-28).
- 29. Estufa Fria, Lisbon, Portugal (Apr. 9).
- 30. Nursery of Moreira da Silva et Fihlos, Oporto, Portugal (Apr. 1, Aug. 16, 17).
- 31. Exbury Garden, Exbury, Hampshire, England (Nov. 10).
- 32. Quinta da Meio, Oporto, Portugal (Mar. 19-Apr. 1, Aug. 14-17).
- 33. Serre de la Madone, Val du Gorbio, Menton (Alpes-Maritime), France (Apr. 24, 25, June 25, July 8, 16).
- 34. Botanical Garden, Naples, Italy (May 22).
- 35. Nursery of Raymond Chenault, Clos Fleuri, Orleans, France (Mar. 11, Aug. 21).
- 36. Myddleton House, Bulls Cross, Enfield, Hertsfordshire, England (Oct. 5).
- 37. Parque de Penha, Sintra, near Lisbon, Portugal (Aug. 11).
- 38. Garden of Palace Hotel, Bussaco, Portugal (Apr. 3).
- 39. Companhia Horticola, Oporto, Portugal (Mar. 21, Aug. 16).

- 40. Nursery of Fratelli Sgaravatti, Saonara, near Padua, Italy (June 8).
- 41. Garden of Domenico Aicardi, San Remo, Italy (June 12).
- 42. Botanic Gardens, Glasgow, Scotland (Sept. 16).
- 43. Nursery of Hervè Fautrelle, Golfe-Juan, (Alpes-Maritime), France (July 10).
- 44. Jardin Botanico "Marimurtra," Blanes, Prov. Gerona, Spain (July 21).
- 45. Penjerrick, near Falmouth, Cornwall, England (Oct. 25).
- 46. Botanical Garden, Pavia, Italy (May 11).
- 47. John Innes Horticultural Institution, Bayfordbury, Hertfordshire, England (Nov. 8).
- 48. Chelsea Physic Garden, London, England (Oct. 13).
- 49. Botanical Garden, Barcelonia, Spain (July 22).
- 50. Colonial Garden (Jardim Coloniale do Ultra Mar), Lisbon, Portugal (Apr. 9, Aug. 8).
- 51. Grand Trianon a Chateau Neuf, Versailles, France (Greenhouse and nursery), (Mar. 7).
- 52. Garden of Mrs. Cruz, Oporto, Portugal (Mar. 30).
- 53. Nursery of Enrique Andres, "Viveros Andres," Seville, Spain (Apr. 12).
- 54. Royal Gardens, Aranjuez, Spain (Apr. 17).
- 55. Garden of Casa Rossa, Menton-Garavan (Alpes-Maritime), France (Apr. 23-28).
- 56. Public Gardens, Principality of Monaco, Monaco (June 27).
- 57. Villa Thuret, Cap Antibes (Alpes-Maritime), France (July 10, 12).
- 58. Nursey of Th. Fisch, Vallauris (Alpes-Maritime), France (July 9).
- 59. Jardin des Plantes, Montpellier, France (Apr. 22, July 20).
- 60. Botanical Garden and Royal Park, Instituto Superior de Agronomia, Lisbon, Portugal (Aug. 9, 10).
- 61. Parque de Monserrate, Sintra, near Lisbon, Portugal (Aug. 11).
- 62. Jardin Kahn, St. Cloud-sur-Seine, Boise de Boulogne, Paris, France (Mar. 6,
- 63. Botanical Garden, Lisbon, Portugal (Apr. 8, Aug. 10).
- 64. Nursery of T. R. Hayes & Sons, Ambleside, Westmorland, England (Aug. 31).
- 65. Baker's Nurseries Ltd., Codsall, Wolverhampton, England.
- 66. John Waterer & Sons & Crisp, Ltd., The Nurseries, Bagshot, Surrey, England.
- 67. Borde Hill Gardens, Haywards Heath, Sussex, England (Oct. 12).
- 68. Royal Horticultural Society's Garden, Ripley, Wisley, Woking, Surrey, England (Oct. 14, Nov. 3).
- 69. Nursery of Grandes Roseraies du Val de Loire, Orleans, France (Mar. 12).
- 70. Nursery of Goeffrey Hayes, Grasmere, Westmorland, England (Sept. 1).
- 71. Nursery Court, Windlesham, Surrey, England (Nov. 11).
- 72. Perry's Hardy Plant Farm, Enfield, Middlesex, England.
- 73. Nursery of H. Johnson, Birkdale, Southport, England.
- 74. Hillier & Sons, Nurserymen, Winchester, Hampshire, England (Oct. 17-19).
- 75. Jardin Exotique, Principality of Monaco, Monaco (June 17-24).
- 76. Vandertang's Nurseries, Guernsey, Channel Islands.77. Fryer's Nurseries, Ltd., Knutsford, Cheshire, England.
- 78. C. Newberry, Bulls Green Nursery, Knebworth, Hertfordshire, England.
- 79. Cross Green Nurseries, Liverpool, England.
- 80. Reginald Kaye, Ltd., Waithmam Nurseries, Silverdale, Carnforth, Lancaster, England.
- 81. Bozenham Gardens, Ashton, Northampton, England.

## PLANT EXPLORATIONS FOR ORNAMENTALS IN ITALY, SOUTHERN FRANCE, SPAIN, PORTUGAL, ENGLAND, AND SCOTLAND

#### INTRODUCTION

A plant exploration trip for ornamental plants was made in Europe from March 4 to November 13, 1957, through the New Crops Research Branch, under a cooperative agreement between Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland, and the Longwood Gardens of Longwood Foundation, Inc., Kennett Square, Pennsylvania.

Europe long has been the chief source of ornamental plants for American gardens. This expedition to Europe was designed to obtain ornamental plants for introduction heretofore not in general cultivation in the United States. This was not a trip primarily for wild materials. Collecting was concentrated in Italy, southern France, Spain, Portugal, England, and Scotland. A careful on-the-spot survey of the existing collections of ornamental plants in these countries was planned. A survey of the scope intended had not been conducted in recent years. We hoped to find from Mediterranean sources plants for southern gardens of the United States and to obtain from British gardens hollies (Ilex) and other broad-leaved evergreens. The special aims of this trip are enumerated as follows:

To introduce into the United States --

- Species with potential as ornamentals not in cultivation.
- Elite clones (cultivars) of the simple species not in cultivation.
- Hybrids not in cultivation.
- Races or ecotypes of the wild species as a source of new germ plasm for plant breeding.
- Reintroduction of species, hybrids, or cultivars rarely grown or lost to cultivation for wider distribution.

As a basis for selecting desirable materials, L. H. Bailey's Hortus Second was the standard field reference.

The 9-month journey covered 15,000 miles. Over 80 botanic gardens, private gardens, experiment stations, nurseries, and arboretums were visited. About 2,800 Plant Introductions (P.I.) originated from these sources.

\* \* \* \* \*

Since about 1550, exotic ornamental plants have found their way into European gardens from areas outside the Continent. Less than 100 years after the voyages of Columbus, the tulip, the hyacinth, and the camellia were already established among the newly introduced plants from lands outside Europe. Ship's captains, itinerant travelers, and diplomatic envoys, mostly from western and southern Europe, participated as plant explorers of the early years.

The rapid spread of the tulip into middle and western Europe from the Turkish introductions of Busbecq about 1550 is one of the earliest recorded episodes to show the

<sup>&</sup>lt;sup>1</sup> P. I. refers to accession number.

rise of interest in ornamental plants during the Renaissance period. By 1620, at the height of the "Tulipomania" in Holland, the tulip had become the best known exotic ornamental in Europe, resulting from the Turkish introductions of only 70 years previous.

The introduction of the camellia is another interesting episode among the early European introductions. The Portuguese in their early lead as master mariners undoubtedly were among the first plant explorers of the Renaissance period. From evidence only now brought to light, we believe the camellia (Camellia japonica) was first introduced to Europe by the Portuguese, probably from Japan in the first half of the 16th century, not in the 18th century as recorded in all books (see account under Villa Nova de Gaya, Oporto).

The spread of World colonialism in the 18th and 19th centuries ushered in the era of greatest activity in the introduction of ornamental plants into Europe. Introductions by British plant explorers soon took the lead in the wave of ornamental plants that reached Europe. With the opening of Australia, New Zealand, South Africa, and parts of North America following the famous voyages of Capt. Cook in the 18th century, vast new areas soon became available to plant explorers. The two famous voyages of Capt. William Bligh to introduce breadfruit trees into the West Indies recalls a famous episode in the annals of plant introduction by intrepid British planters. Great Britain was not alone in this new activity. All the seafaring nations of Europe contributed a share in the introduction of foreign plants, often accomplished as part of scientific exploring missions. European gardens have thus been enriched by plant introductions coming from all parts of the World over a period of about 400 years.

In the United States, we are now in the midst of a great Renaissance of interest in ornamentals, in fact, the greatest in the history of our country.

## EN ROUTE TO THE MEDITERRANEAN



BN - 8952

Chateau Villandry, France.

### GRAND TRIANON A CHATEAU NEUF

#### VERSAILLES

(Mar. 7)

The extensive arboretum of several hundred acres, which is adjacent to the Palace of Versailles, contains a notable collection of trees maintained in the great tradition of French arboriculture. Some old specimens date to the early days of the garden, and the oldest are reputed to have been planted by the great André Le Notre, builder of the garden for Louis XIV, in the 17th century. On the present trip, time permitted only a cursory inspection of part of the collections in the vicinity of the Grand Trianon'à Chateau Neuf.

The fern-leaved form of the horsechestnut (Aesculus hippocastanum 'Laciniata') (P.I. 237919) is one of the rarer trees. Specimens of the fern-leaved beech (Fagus sylvatica 'Laciniata') are more than 50 feet tall. Of the exotic conifers, 100-foot specimens of redwood (Sequoia sempervirens) and sequoia (Sequoiadendron giganteum) are growing near the orangery of the Chateau Neuf.

Long rows of Thuja occidentalis, 15 to 20 feet tall, are used as windbreaks in the nursery. Windbreaks of this type are widely utilized in European gardens and nurseries to control microclimate in relation to the success of growing ornamentals of borderline hardiness.

Ensete 'Maurellii' (P.I. 237923), a banana relative of uncertain origin with deep reddish leaves, is an attractive plant used at the Chateau Neuf for summer bedding.

#### JARDIN KAHN

ST. CLOUD-SUR-SEINE, BOIS BOULOGNE,

#### PARIS

(Mar. 6, Aug. 24)

The Jardin Kahn, founded by Albert Kahn, a prosperous Paris banker of the late 1890's, is located along the banks of the Seine at St. Cloud, about one-half hour's ride from Paris.

A Japanese tea garden, an English garden, an espaliered fruit orchard, and a simulated Vosges mountain forest are maintained as separate entities all within an area of about 7 acres. The Japanese garden in traditional style is complete with tea houses, arched red-lacquered bridges, stone lanterns, and a collection of about 300 "bonsai" trees in their original containers. Espaliered fruit trees on about one-half acre, include pears, apples, and peaches skillfully maintained in the best French tradition.

Two ginkgos are of special interest. Ginkgo biloba 'Pendula' (P. I. Nos. 237828 and 242017) is a weeping form; the specimen is grafted on to a standard about 12 feet high. G. biloba 'St. Cloud' (P. I. 242018) is a curious form with angular strongly divaricate branches (fig. 2). The lateral branches are set at right angles to the main trunk, giving to the cultivar 'St. Cloud' a characteristic skeletal appearance. In this account, the latter cultivar of the gingko is described for the first time (see Enumeration of the Introductions).



BN - 8953

Figure 2. --Ginkgo biloba 'St. Cloud' (P.I. 242018) type-plant of an unusual sparsely branched cultivar of the ginkgo with short shoots of the leaves borne mainly on the lateral long shoots.

The Jardin Kahn is maintained by the Paris department of parks under the direction of Monsieur A. Leroy. The garden remains open to the public during spring and summer. At other times it may be visited by a special permit.

#### ARBORETUM VILMORIN-ANDRIEUX

VERRIERES-LE-BUISSON

(Mar. 7, Aug. 23)

The history of Vilmorin-Andrieux is in many respects the history of French horticulture since the 18th century. This horticultural firm with headquarters at Verrieres-le-Buisson near Paris dates from about 1775 and is now the largest such organization in France. Plant introduction and plant improvement have always been uppermost throughout the long development of the firm. New introductions of flowers and crop plants alike are still a major program at Verrieres. Mr. Roger Vilmorin, a botanist and horticulturist of rare talents, presently manages the firm.

tablished by Philippe-André de Vilmorin in 1815, is an important landmark in the history of woody plant introductions into France. Some trees still extant date from plantings made during the early years of the arboretum. Old specimens include the Corsican pine (Pinus nigra var. poiretiana), 1816; Juglans × intermedia 'Vilmoreana'; Pseudolarix kaempferi; Libocedrus decurrens; and the Spanish fir (Abies pinsapo), 1837, the first introduction of this species into cultivation.

This arboretum was an important repository of new woody plants introduced into France during the last half of the 19th century and the first part of the 20th. The missionary fathers David, Delavay, and Soulié sent many introductions from China. The dove tree (Davidia involucrata var. vilmoreana) was first grown at Verrieres from seeds sent by French collectors. Cryptomeria japonica 'Vilmoriniana' was first grown at Verrieres. Many hybrids of woody plants originated at Verrieres, such as Abies X vilmorinii (A. cephalonica X A. pinsapo), the first hybrid of Abies to be obtained artifically; Citrus aurantium X C. trifoliata; and Chaenomeles X vedrariensis (C. cathayensis X japonica).

Introductions of special interest: Castanea sativa 'Aspleniifolia' (P. I. 237920), an unusual chimera of the European chestnut with variously shaped and often white-variegated leaves; Abies nebrodensis (P. I. 237827), the rare Sicilian fir; X Pyracomeles vilmorinii (P. I. Nos. 237921 and 242025), the bigeneric hybrid of Osteomeles subrotunda X Pyracantha crenato-serrata; Pteroceltis tartarinowii (P. I. Nos. 237830 and 242024), a rare Chinese relative of Celtis; Acer caesium (P. I. 237918) a deciduous large-leaved maple from the Himalayas. Near the laboratory, a fine specimen of

Hedera helix 'Arborescens', nearly 60 years old, forms an erect bush 7 to 8 feet tall with a branch spread of 12 feet at the base.

#### NURSERY OF MARCEL LECOUFLE

#### BOISSY ST. LEGER, PARIS

(Aug. 24)

The nursery of Monsieur Marcel Lecoufle in one of the far southern suburbs of Paris offers an extensive assortment of choice house plants. Nepenthes, orchids, and aroids, chiefly alocasias and colocasias are specially featured.

Introductions of Alocasia include A. cucullata (P. I. 242013), with deep green leaves; A. portei (P. I. 242026), a giant of the genus from the Philippine Islands with enormous leaves 15 feet long; and A. wavriniana (P. I. 242014), a distinctive foliage species with deeply dentate-auriculate metallic-green leaves from Celebes.

Introductions of Nepenthes include N. ampullaria (P. I. 242019) from Malaya; N. ampullaria 'Vittata' (P. I. 242020), a garden selection; N. khasiana (P. I. 242021) from India; N. rafflesiana (P. I. 242022), one of the showiest species from Malaya; and N. ventricosa (P. I. 242023), from the Philippine Islands with pitchers 6 inches long.

Begonias, ferns, saintpaulias, philodendrons, anthuriums, and bromeliads are produced in quantity for commercial sale. This modern establishment is a model of efficiency in plant-growing procedures.

#### ARBORETUM DES BARRES

#### NOGENT-SUR-VERNISSON, LOIRET

(Mar. 9-10)

The Arboretum des Barres lies about 3 miles to the southeast of Nogent-sur-Vernisson in the wide-open countryside about 90 miles south of Paris. The turreted, red-stone chateau and gardens were first laid out by Phillipe-André de Vilmorin of the famous horticultural firm in 1821. In 1866, part of the estate was deeded to the French government for a national forestry arboretum. In 1873, an arboretum and school of forestry were founded on the site. A fruticetum was created in 1894. In 1921, the entire property was inherited by the State. The present arboretum covers nearly 700 acres.

The collection of temperate woody plants, numbering over 3,000 kinds, ranks among the most comprehensive in France. Conifers are extensively cultivated at Barres for silvicultural studies to determine those species best suited for forestry purposes in France. North American species are much used. A young forest of Sequoiadendron giganteum averages 20 to 30 feet in height at Barres. A specimen of this species more than 4 feet in diameter at Barres is one of the oldest and largest in Europe.

A large collection of ornamental shrubs and flowering trees in the fruticetum contains several interesting species, such as Magnolia dawsoniana (P. I. 238025); M. sargentiana (P. I. Nos. 238026 and 238027); and M. mollicomata; Sycopsis sinensis (P. I. 238040), a Chinese evergreen witch-hazel relative of Hamamelidaceae; Alnus orientalis (P. I. 238011), a fine tree alder 50 feet tall, native of Asia Minor; Corylus avellana 'Contorta', a bizarre form of the species with strongly twisted branches; and

Platycarya strobilacea (P.I. Nos. 238033 and 238045), a small tree of the Juglandaceae from Japan with conelike seed pods an inch long.

A newly developed section of the arboretum is devoted to a growing collection of weeping, prostrate, fastigiate, and otherwise elite forms of trees and shrubs of ornamental merit. Introductions include Abies pinsapo 'Pyramidata' (P. I. 238009); Malus sylvestris 'Elisa Ratkee' (P. I. 238028), a pendulous cultivar; Fagus sylvatica 'Tortuosa' (P. I. 238019); Abies numidica 'Pendula' (P. I. 238008); Gleditsia triacanthos 'Elegantissima' (P. I. 238020), a beautiful cultivar with a dense bushy habit; and Pinus sylvestris 'Variegata' (P. I. 238032).

#### NURSERIES AT ORLEANS

Orleans is the center of one of the largest nursery areas of northern France. In the valley of the Loire River, the fertile, alluvial soil favors a thriving nursery industry. Most of the nurseries located here cover only a few acres. Nurseries of 100 acres or more are operated by several firms.

A wide range of ornamental nursery stock and fruit trees hardy in northern areas is grown. Roses are produced on a large scale. Propagation of hardwood cuttings by the closed-frame technique and under bell jars in the field are methods still practiced by many growers. The intermittent-mist technique for rooting of cuttings now universally accepted by plant propagators in the United States is still practically unknown to French nurserymen. Hand labor still prevails in the growing of nursery materials produced in this area. Because of continuously rising labor costs in France, mechanization undoubtedly will supersede hand methods. Already, several of the largest firms in the Orleans area are using automatic watering systems, mechanical cultivators, and other mechanical equipment.

#### CHENAULT NURSERY

#### ORLEANS

(Mar. 11, Aug. 21)

The Chenault nursery, founded by Léon Chenault in 1895 and perpetuated by his son Raymond Chenault, the present owner, is one of the most widely known nurseries in Orleans.

Shrubs of outstanding merit are Cercis siliquastrum 'Album' (P. I. 238016), the white-flowered European Judas-tree; a dwarf form of the Austrian pine (Pinus nigra 'Pyramidalis') (P. I. Nos. 238642 and 241974); and a very narrow-leaved form of the butchersbroom (Ruscus aculeatus 'Angustifolius') (P. I. 238218). Magnolia spp. (P. I. 241973), with smallish pure white flowers is thought to be a form of M. × soulangeana. The oldest specimens in Europe of Picea glauca 'Conica', the Alberta conical spruce are now 12 to 14 feet tall in this nursery.

Several shrubs now widespread in cultivation in the United States originated from the Chenault nursery. The well-known barberry hybrid <u>Berberis</u> × <u>chenaultii</u> (B. gagnepainii × B. verruculosa) (P.I. 238209) dates from about 1928; the original plants now form a dense thicket, 4 to 5 feet tall. Three additional Chenault originals are <u>Symphoricarpos</u> × <u>chenaultii</u> (S. <u>microphyllus</u> × S. <u>orbiculatus</u>), a hybrid coralberry; <u>Syringa microphylla</u> 'Superba', a fine improvement over the common form of <u>S</u>. <u>microphylla</u>; and Viburnum × chenaultii.

#### GRANDES ROSERAIES DU VAL DE LCIRE

#### ORLEANS

(Mar. 12)

Grandes Roseraies du Val de Loire is one of the largest and most modern of the nurseries at Orleans. Roses are its speciality. A wide selection of perennials, fruit trees, and ornamental shrubs make up the nursery list. Field operations are handled largely by mechanical equipment. Bell jars and closed frames for the rooting of cutthis and field lavering of shrubs are standard methods of plant propagation used in This nursery.

A small rock garden for alpine plants, conifers, bog and aquatic plants, and perennials are features in a display garden of about 2 acres located at the rear of the nursery. Here the most outstanding plants of the nursery are displayed to the public. A perfectly developed specimen of a weeping Spanish fir (Abies pinsapo 'Pendula'), about 20 feet tall is an outstanding conifer in the display garden. Several 100-foot specimens of the southern swamp cypress (Taxodium distichum) are the largest trees in the nursery (fig. 3). Genista aethnensis (P.I. 242631), a Sicilian shrub of much ornamental merit grows on the rock garden.



### ITALY



Boboli Gardens, Florence.

#### ITALY

The gardens of Italy bring to mind formal gardens of clipped hedges, topiaries, fountains, and statuary. Foliage plants rather than flowers overshadow the basic requirements of plantings in the traditional Italian gardens. Flower gardening, as known in Western gardens, is largely of Victorian origin.

Old gardens. -- Classical gardens from the Renaissance period are still common in various parts of Italy, such as the well-known Hadrian's Villa near Rome. Many examples exist in Florence and in gardens of the neighboring Tuscan hills. The famous Boboli Gardens at Florence are among the best preserved in the baroque style of the Italian Renaissance. Box-shaped hedges, trees shaped as spires or with clipped beveled edges for avenue planting, and ornate topiaries epitomize the use of plant materials in the traditional sense. Plantings usually consist of boxwood (Buxus sempervirens), cypress (Cupressus sempervirens), myrtle (Myrtus communis), sycamore (Platanus spp.), stone pine (Pinus pinea), lindens (Tilia spp.), holly oak (Quercus ilex), holly (Ilex aquifolium), and citrus (Citrus spp.). Nearly as important as the plants are the statuary and fountains that complete the aesthetic characteristics associated with classical Italian gardens. Not many herbaceous plants are grown. Indeed, the old classical gardens of clipped boxwood and cypress are of much interest to the history of gardening. They are instructive and often very beautiful. But for the purposes of this plant exploration trip, the classical Italian gardens are of small importance. Landscape gardening in Italy in the traditional taste requires but few kinds of native plants to accomplish the aesthetic objectives. Exotic materials are not required.

Modern Gardens. --Modern Italian gardens are strongly influenced by the style of the classical period but they are becoming modernized to the extent of using colored foliage plants, such as Teucrium, Santolina, Echeveria, Coleus, and Alternanthera to supplement the traditional woody species. Indeed, flower growing is widespread but on a relatively small scale in comparison with areas of northern Europe. The extensive flower fields of the Italian Riviera are not an accurate reflection of wide interest in flower growing generally. The classical garden is revered as the style most acceptable by the Italian people, but ornamental horticulture is on the increase in Italy.

Gardens in the modern sense are not too common. An outstanding historic collection of trees exists on Isola Madre, an island in Lake Maggiore in northern Italy. A good modern rock garden belongs to Dr. Arturo Hruska on Lake Como. Recently interest has increased in growing Iris. Iris gardens of note exist in Florence and Rome. Rose growing is becoming quite widespread. The municipal rose garden in Rome is one of the finest in Europe. An outstanding large garden of recent development within the past 30 years is the Villa Taranto on Lake Maggiore. A small modern garden of note, the Giardini di Marignolle is located in Florence. The well-known garden of La Mortola on the Italian Riviera, formed about 1870, long will be remembered as one of the finest of its kind ever created in southern Europe.

The so-called cottage garden of Italy often consists of pelargoniums, petunias, marigolds, laurel bushes, and grapevines planted in terra cotta pots on a balcony several stories above street level. Space for a proper garden is a luxury unobtainable to many Italian people. Because water is often scarce, lawns are almost nonexistent in Italy.

Botanical gardens. -- The botanical gardens afforded the best opportunity of securing new and unusual ornamental plants in Italy. Temperate and tropical species are maintained in all of the botanical gardens visited. From 8 Italian botanical gardens, 173 specimens were introduced.

Experiment Stations. -- Three experiment stations, the Experimental Arboretum of Vallombrosa near Florence, the Agricultural Experimental Station at Florence, and

the station for Floricultural Research at San Remo--all of interest for ornamental plants--were visited. Thirty-one introductions originated from these sources.

Nurseries. -- The nurserymen's association of Italy lists a membership of about 500. Most Italian nurseries are very small and are operated by 1 or 2 people. Pistoia is the nursery center of Italy. Material grown in this area is widely distributed throughout Italy and to countries abroad. Sgaravatti is the largest firm in the country with three nurseries in different areas. Most of the larger towns are supplied with small nurseries for local demand of ornamental plants. The better known ornamental trees, shrubs, and herbaceous plants predominate among the plant materials offered by the nurseries visited. Italian nurserymen apparently are not interested in new introductions, unlike nurserymen in many areas of northern Europe. The preponderance of the classical style in contemporary garden design possibly is a factor in the relative paucity of newer ornamentals in Italian gardens.

#### VILLA TARANTO

#### PALLANZA, LAKE MAGGIORE

(May 4 - 8)

The garden of the Villa Taranto dates from 1930 when the present owner, Capt.

Neil McEacharn moved to Italy from Scotland. The garden now possesses the most comprehensive collection of temperate plants, especially of woody species in cultivation in southern Europe.



Figure 4. --Weeping form of Douglas fir (Pseudotsuga menziesii 'Pendula').

The present garden of about 100 acres stands partly on the site of an earlier garden of the 18th century that surrounded the Villa. Of the original trees, several imposing 100-foot specimens of green-leaved, purpleleaved, and fern-leaved European beech (Fagus sylvatica), and an old weeping Douglas fir (Pseudotsuga menziesii 'Pendula') now about 75 feet tall survived modernization (fig. 4).

The site of the garden relies upon fine scenery as an outstanding natural asset along the shores of Lake Maggiore at Pallanza within sight of the snowcapped peaks of the Simplon Pass of Switzerland. Climatically, the garden is favored by a high rainfall of about 90 inches a year. Relatively little frost occurs, but some freezing is to be expected each winter. Camellias, tree ferns, palms, rhododendrons, magnolias, hollies, and conifers are abundantly represented. Among the herbaceous plants, over 70 species of Dianthus and a wide selection of alpines are cultivated. The garden contains probably the best collection of Rhododendron species and hybrids in southern Europe. A fine 15-foot specimen of R. decorum, in flower during our visit, could hardly have been better grown. The hot summers of northern Italy,

though, are not ideally suited to most of the Chinese rhododendrons. A group of 20-foot Trachycarpus fortunei, a hardy Chinese palm, is a conspicuous landmark of the garden.

Recent architectural innovations in the garden are of interest. A valley was excavated to a depth of 25 feet below the level of the main garden to accommodate azaleas, lilies, hostas, daffodils, and other "bulbous" plants. A 50-foot specimen of the Chinese dove tree (Davidia involucrata) in the lower part of the swale ranks as one of the notable flowering trees in the collection.

Terraced water gardens are a novel feature of the Villa Taranto. Long rectangular pools are connected by a series of ingeniously devised cascades. Water that flows over a concave marble lip suddenly forms a transparent aqueous sheet, not unlike a pane of curved glass, on the fall of about 18 inches to the terrace below. A pool for Nelumbium speciosum, the Chineselotus, at the foot of a series of curved steps is an innovation taken after an old Portuguese design.

Trees and shrubs are at their flowering best the first of May. The most striking plants in flower at this time include a 20-foot specimen of the double-flowered dogwood (Cornus florida 'Pluribracteata'); pink dogwood (C. florida 'Rubra'); Pacific dogwood (C. nuttallii); Magnolia parviflora, a mass planting with specimens 15 feet tall; Paulownia tomentosa and the rarely cultivated P. fortunei (P.I. 239684) with larger pale lavender flowers. Mollis azaleas cover the crest of a hillside. Around May Day, thousands of tulips fill the broad borders near the lawn in front of the Villa.

Lawns are a rarity in Italy, but Capt. McEacharn maintains a fine example equal to the best anywhere (fig. 5). This feature alone attracts thousands of Italian visitors annually to the Villa Taranto.

Cavendishia acuminata (P.I. 239676), a subtropical shrubby member of the Ericaceae from the Andes, and Gardenia rothmanii (P.I. 239680), a rarely grown species from South Africa, are two plants of special interest in the conservatory. This large glasshouse is devoted primarily to the giant waterlily (Victoria amazonica) of the Amazon River.

Among the hardy trees and shrubs, Emmenopterys henryi (P.I. 239678) said to be one of the handsomest of Chinese flowering trees, now 30 feet tall at the Villa Taranto, has not yet flowered in Europe. Osmanthus fragrans 'Aurantiacus' (P.I. 239683) is the yellow-flowered sweet olive. Experience with Eucalyptus shows that E. niphophila, the snow gum from Mt. Kosciusko in New South Wales, Australia, is the hardiest species at the Villa Taranto. During the severe winter of 1956, E. niphophila came through 10° F. unscathed. E. gunnii and E. coccifera were slightly injured.

Capt. McEacharn maintains a life interest in the Villa Taranto, but the gardens are to revert as a gift to the Italian government in future years as a legacy to the people of Italy. A school of horticulture is to be established there. Capt. McEacharn himself has stated, "Apart from the beauty of these gardens it is also their scientific character which interest the people who come to them for reference and study."

The garden is now open to the public from the first of April through October.



Figure 5. -- The lawn is an outstanding feature of Villa Taranto. The fern-leaved beech (Fagus sylvatica 'Aspleniifolia') behind the water fountain and the weeping beech (F. sylvatica 'Pendula') next to it are two of the finest trees in the garden. (Courtesy of Neil McEacharn.)

#### INTERNATIONAL DENDROLOGY UNION

#### A Tour of Switzerland and Italy

The International Dendrology Union functions as a nonscientific, noncommercial organization whose membership consists primarily of Europeans interested in cultivated woody plants.

Once a year this organization sponsors an annual field excursion for its members to some point of special dendrological interest in western Europe. The tour for 1957 was conducted in the lake district of southern Switzerland and adjacent Italy. We joined the group of about 50 participants at the Villa Taranto and spent a day touring the old gardens of the Borromean Islands of Isola Madre and Isola Bella in Lake Maggiore and the alpine garden at Stresa.

#### ISOLA MADRE

#### LAKE MAGGIORE

(May 8)

The arboretum of Count Borromeo on Isola Madre was planted over 200 years ago largely in the form of a park. The equable climate of the Borromean islands in Lake Maggiore is more amenable for growing some plants than on the adjacent mainland. Tree growth is noticeably more lush in the island climate. Unusually large old trees dominate the plantings of the garden. The Himalayan cypress (Cupressus cashmeriana) and the Mexican pine (Pinus montezumae) each are over 100 feet tall and about 3 feet in diameter. Several large redwoods (Sequoia sempervirens) are nearly 100 feet tall. Magnolia grandiflora forms magnificent 50-foot specimens with branches that sweep to the ground. Specimens of the Himalayan Rhododendron arboreum are 30 feet tall with trunks nearly a foot in diameter at the base. Azaleas are enormous in size. Specimens of R. kaempferi, for example, are 15 feet wide and 6 feet tall. Specimens of Camellia japonica are 20 feet tall. Twenty-foot specimens of Myrtus luma, a Chilean species, are about 100 years old. This small evergreen tree of Myrtaceae is known for its beautiful, smooth cinnamon-colored bark. Small trees of Illicium floridanum and large bushes of Escallonia floribunda are included in the collection.

#### ISOLA BELLA

#### LAKE MAGGIORE

(May 8)

Isola Bella, one of the larger Borromean islands in Lake Maggiore, belongs to Prince Borromeo. The macabre, overladen formality of this garden contrasts sharply with the informality of the garden of the nearby Isola Madre. The baroque style of garden architecture is epitomized in the terraced gardens of Isola Bella with the pecten shell as the overriding motif. Boxwood (Buxus sempervirens), laurel (Laurus nobilis), and cypress (Cupressus sempervirens) prevail among the species used for formal planting. A 20-foot specimen of the soapbark tree of Chile (Quillaja saponaria) is included among the rarer exotic trees. Specimens of Rhododendron ponticum 'Variegatum', a variegated-leaved form of the species, and Viburnum japonicum were noted among the exotic shrubs.

#### ORTO BOTANICO

#### PAVIA

(May 11)

The ancient university town of Pavia, some 30 miles south of Milan, has maintained a botanical garden since 1763. Still on its original site, this completely flat garden is surrounded by a 15-foot brick wall on 3 sides and an equally imposing iron grille fence that faces the botanical institute on the front. The 18th century greenhouses remain as the most important historical relic dating from the beginnings of the garden nearly 200 years ago. These old single-pitched glasshouses, constructed in the shape of a lean-to are in little danger of collapse, since solid granite posts keep the structure amply supported. The large brown stuccoed building of the botanical institute dominates the architectural features of the modern garden.

Horticultural features of special interest in the Orto Botanico (fig. 6) include a large section devoted to modern roses in front of the botanical institute, an experimental area for studies on fruit tree diseases and rose understocks in the center of the garden, and an arboretum. Altogether, the garden covers about 20 acres.

Tropical plants of special interest in the old 18th century greenhouse include Pachystroma longifolium (P.I. 239928), a handsome small evergreen tree of the Euphorbiaceae from Brazil with hollylike leaves, and Royena lucida (P.I. 239933), an evergreen South African shrub of the Ebenaceae with yellowish flowers.

Of the hardy plants (Corylus avellana 'Heterophylla') (P.I. 239929), the cutleaved hazelnut, and Ligustrum amurense' Pendulum' (P.I. 239931) are worthy of wider recognition as ornamentals. A fine specimen of the double-flowered horsechestnut (Aesculus hippocastanum 'Baumannii'), and the single-leaved form of the black locust (Robinia pseudoacacia 'Monophylla') are unusual ornamental trees rarely encountered except in collections.

The oldest trees are giant sycamores (<u>Platanus acerifolia</u>), reputably 250 years old, and a rather forlorn specimen of <u>Magnolia grandiflora</u> planted in the 18th century at the corner of the rose garden.



Figure 6. -- Experimental area and 18th century greenhouses of the botanical garden, Pavia, Italy. (Courtesy of Orto Botanico, Pavia.)

ORTO BOTANICO
PALERMO
(May 15 - 20)

Tempered by the Mediterranean, Sicily enjoys one of the most southerly geographical positions of Europe, with a mild, arid, nearly frost-free climate along coastal areas. A rich assortment of palms, figs, and many subtropical species seldom grown out-of-doors in Europe are included in the collections of the Orto Botanico. The subtropical collections in this Sicilian garden are indeed the most extensive among the Italian botanical gardens visited. The garden dates from 1779.

The permanent features of the garden include a well-preserved 18th century from an esque museum building (fig. 7); several greenhouses for tropical plants; aquatic gardens, an experimental area for crop plants; a garden of economic plants; the botanical institute; and an extension to the old garden with new woody plant introductions. The garden area covers approximately 75 acres.

Adjacent to the museum building, several small gardens are planted mainly to arborescent euphorbias, cacti, and aloes. Strelitzia augusta, an arborescent South African species is 30 feet tall, and 20-foot specimens of Chamaerops humilis, the only palm native of the Mediterranean region, are conspicuous in this part of the garden. Several specimens of the Canary Island pine (Pinus canariensis) nearby are 75 feet tall.

The plantings consist chiefly of trees and shrubs and a much smaller collection of herbaceous species. The woody plants are grouped by phylogenetic relationships in large blocks separated by a series of tree-lined broad walks. The herbaceous plants are grown entirely in ornamental terra cotta pots lined atop 3-to 4-foot walls that parallel the broad walks.

The largest trees in the Orto Botanico are species of fig. Beautiful specimens of Ficus magnolioides (P.I. 240075) are now 60 feet tall with a branch spread of nearly 60 feet. The largest trees are buttressed at the base with the lower branches copiously festooned with prop roots. F. magnolioides is known only as a cultivated plant from material originally described by Borzi, director of the garden at Palermo in the 1890's. F. bellengeri (P.I. 240126) from Australia; F. bibracteata (P.I. 240002) from India; and F. gigantea (P.I. 240000) from Venezuela are ornamental figs of outstanding merit.



Figure 7. --Botanical garden, Palermo, Sicily. 18th century museum building with Strelitzia augusta and Cycas revoluta in adjoining garden.

Kiggelaria africana (P.I. 240114), a beautiful evergreen tree of the Bixaceae from South Africa is 60 feet tall; Cordia franciscii (P.I. 240032), a woody species of the Boraginaceae, is nearly 75 feet tall. An avenue of 100-foot Washington fan palms (Washingtonia filifera) bisects the garden at right angles. Subtropical climbers, which provide rampant growth on the palm trunks, includes the silk vine (Periploca graeca) (P.I. 240314) a species of the Mediterranean region and Asia Minor; Piper kadsura (P.I. 241158), an evergreen relatively hardy pepper vine from southern Japan; Hoya carnosa; several species of Asparagus; and the climbing butchersbroom (Semele androgyna), from the Canary Islands.

Erythrina insignis, a 50-foot tree, provides a good display of scarlet flowers. This species is planted as a street tree in Palermo, although it is not the showiest species of the genus in cultivation.

Species rarely seen out-of-doors in Europe include Cheiranthodendron pentadacty-lon (P.I. 239995), the chicken-foot tree of Mexico with broad sycamorelike hairy leaves and reddish flowers, the peculiar stamens of which simulate chicken's feet; Brexia madagascarensis (P.I. 240029), a large shrub or small evergreen tree, 10 to 20 feet tall from Madagascar; Centaurea verbascifolia (P.I. Nos. 240073 and 240110), a subshrub to 4 feet tall from the southern Arabian peninsula, with leaves white-woolly beneath and lavender heads of flowers; Cussonia spicata (P.I. 240306), an unusual South African evergreen tree with variously divided and cut leaves. Scabiosa cretica (P.I. 240316), a native Sicilian shrub 3 to 4 feet tall with blue flowers is one of the showiest species of the genus.

An avenue of 30-foot floss-silk trees (Chorisia speciosa) in the Orto Botanico probably is the only display of its kind in Europe (fig. 8). Several aged 15-foot arborescent grass trees (Xanthorrhoea preissii) are the largest specimens of this size in

Figure 8. -- Avenue of the floss-silk tree (Chorisia speciosa).

Europe. This striking member of the Liliaceae is one of the characteristic plants of western Australia.

An extensive collection of economic plants covers one corner of the garden. Experimental studies on sugarcane (Saccharum officinarum) are underway. This is a potential crop plant of Sicily.

Prionium palmita (P.I. 240315) is an unusual and rarely cultivated marsh plant in the collection. This arborescent South African species of Juncaceae produces a large trunklike base with dense tufts of grasslike leaves at the summit and flowers reminiscent of Juncus. In South Africa this plant grows along watercourses and is used in basketry and for thatching.

In the greenhouse, a small collection of tropical trees includes Malpighia fucata (P.I. 240003), a handsome small evergreen tree with pinkish-white flowers from Jamaica. The pernicious hairs on the underside of the leaves, although apparently nonpoisonous, are to be avoided. A collection of ferns, peperomias, aroids, and other moisture-requiring plants are grown in a second greenhouse. The botanical garden at Palermo proved to be the most lucrative of the Italian gardens visited. About 80 introductions originated from this source.

#### ORTO BOTANICO

#### NAPLES

(May 21 - 22)

The botanical garden, Naples, was founded by Michele Tenore in 1807. This institution like other botanical gardens of Italy functions primarily as a research and teaching facility of the University. The garden covers about 20 acres near the heart of the city.

An orangery for tropical trees and shrubs and an arboretum are the principal horticultural features of the garden. Relatively few herbaceous plants are included in the collection. The large building of the botanical institute occupies a prominent position near the garden entrance (fig. 9).

Woody subtropical species flourish in the mild Mediterranean climate of Naples and predominate among the collections in the aboretum. Several 100-foot specimens of the New Zealand Kauri pine (Agathis australis) and 80-foot Paraná pines of Brazil (Araucaria angustifolia) are among the largest trees in the garden. Ocotea foetens, an evergreen tree of the Lauraceae, native of the Canary Islands, is now over 50 feet tall. Euonymus pendulus (P.I. 240340), a handsome evergreen species from the Himalayas is over 50 feet tall. Peumus boldus, the boldo tree of Chile, is 30 feet tall. The palm collection includes mature fruiting specimens of Washingtonia filifera, Howea forsteriana, Butia capitata, Jubaea spectabilis, Phoenix dactylifera, and P. canariensis. Specimens of Buxus balearica, the Balearic Island boxwood, are 25 feet tall. The leaves of B. balearica are larger and more lustrous than those of B. sempervirens. In a mild climate with relatively little frost, a better hedge plant than the Balearic boxwood would be difficult to obtain.



BN - 8958

Figure 9. -- Botanical garden, Naples, Italy. Livistona chinensis palm in center and botanical institute.

#### ORTO BOTANICO

#### ROME

(May 23)

The botanical garden of the University of Rome was formed on a portion of the 18th century garden adjacent to the Villa Corsini. Located on the slopes of one of Rome's famous seven hills, the garden enjoys a choice site in one of the most his-



toric parts of the Eternal City. The Orto Botanico dates from 1892. Unfortunately, the plantings have never been extensively developed. The collections are quite meagre.

Giant sycamores (Platanus acerifolia and P. orientalis), now over 200 years old and 125 feet high, are the largest trees in the garden. Cordia franciscii (P.I. 240032) is one of the few rare trees in the collection. An elegant 50-foot specimen of the latter species grows near the conservatory (fig. 10). This tree of the Boraginaceae was first described from a specimen in cultivation at the botanical garden, Naples. Specimens of the soapbark tree (Quillaja saponaria), an evergreen tree native of Brazil, are upwards of 20 feet tall. Solanum bonariense (P. I. 240309), while not the showiest of the ornamental solanums, is a shrubby floriferous species 4 to 6 feet tall from Argentina with lavender or white flowers. Azara uruguaiensis (P.I. 240304), a rarely cultivated evergreen shrub of the Flacourtiaceae from Uruguay, deserves trial in nearly frost-free gardens as a hedge plant.

BN - 8959

Figure 10. -- Cordia franciscii (P. I. Nos. 240032 and 240305).

#### MUNICIPAL ROSE GARDEN

ROME

(May 24)

The Roseto di Roma occupies a unique and hallowed site among the World's major rose gardens. In the shape of an amphitheater, the garden covers about 2 acres overlying an ancient Jewish cemetery that faces the Palatine Hill and the Temple of Constantine. Indeed, this garden contributes a fresh modern note not commonplace in the Eternal City.

The Roseto di Roma is designated as one of Europe's official Rose Test Gardens. The International Concourse for Roses, only a week prior to our visit, completed the

all important function of choosing the gold medal winner of the year. The rose, 'Grand Medeille d'Or', introduced by Francois Meilland of France (originator of the rose 'Peace') won the award for 1957. This floribunda bush-rose has brilliant orange-red flowers 2 to 2-1/2 inches across.

The collection of roses, apart from the comprehensive array of modern hybrid tea's and climbers, includes a good assortment of shrub roses and early hybrids to illustrate the evolution of the garden rose over the past 150 years.

Dr. Elvezio Ricci, present Director of Parks in Rome, inspired the building of the Roseto di Roma in the years since World War II. In addition to his work with roses, Dr. Ricci is associated with one of the most progressive movements of modern Rome to beautify the parks of the city and to preserve the more famous monuments of horticultural interest, such as the park of the Villa Borghese. In his "I Giardini di Roma," published in 1957, Dr. Ricci presents a graphic account of the modern and historic gardens of Rome. Many photographs illustrate the work.

#### ORTO BOTANICO

#### FLORENCE

(May 27 - June 3)

The Orto Botanico in Florence emerged from the Renaissance as an important center of botanical and horticultural learning. Founded in 1545 by Luca Ghina, the garden stands as the World's third oldest botanic garden. A good collection of plants is still maintained for purposes beneficial to students and others interested in the academic aspects of plant science, much as originally conceived by the founding fathers 414 years ago.

The garden of about 5 acres occupies the original site near the heart of the city. On two sides it is bounded by the botanical institute, on the third by the 18th century orangery (fig. 11), and the fourth side faces the Via Lamarmora, protected by an

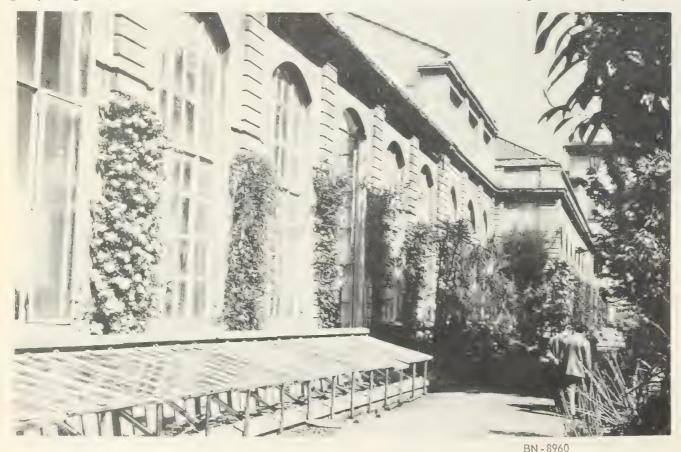


Figure 11. -- Botanical garden, Florence, Italy, an 18th century orangery.

imposing 15-foot iron grill fence. The original gate, erected in 1557, still stands at one end of the garden on the side. Unfortunately the garden is not regularly open to the public.

The face of the Orto Botanico has changed several times since 1545. Designed originally as a "garden of simples" (a garden for growing medicinal plants), an arboretum now covers about four-fifths of the total area. Several broad tree-lined avenues bisect the garden at right angles. A pool in the center is a focal point for the outlying features of the garden. A large cork oak (Quercus suber), over 100 feet tall, and a twisted olive tree (Olea europaea), 40 feet tall date from plantings in the 16th century. The hardy shrubs in small rectangular beds are grouped by phylogenetic relationships, typical of the planning of European botanic gardens. The tropical trees



Figure 12. -- <u>Dieffenbachia picta</u> var. <u>baraquiniana</u> (P. I. 240537), native of Brazil.

and shrubs in the 18th century orangery are grown entirely in large terra cotta pots. Come spring, a husky crew with the aid of a derrick will transfer the several hundred plants in pots, some weighing hundreds of pounds, from the orangery to the shade of the arboretum for an annual summer airing.

About 40 introductions, mostly tropical species, originated from the Orto Botanico in Florence. Eugenia magnifica (P.I. 240437) is a goodlooking large evergreen shrub to tree with puckered or bullate leaves; Theophrasta imperialis (P.I. 240442) is a splendid evergreen tree native of the West Indies; and Mackaya bella (P.I. 240439) is a South African evergreen shrub of the Acanthaceae, with attractive tubular lavender flowers. Two noteworthy herbaceous plants are Dieffenbachia picta var. baraquiniana (P.I. 240537) from Brazil, with leaf midribs and petioles milk-white (fig. 12), and Piper decurrens (P.I. 240498), an elegant species from Colombia, with prominently ribbed stems and leaves lustrous green above and reddish beneath. Of the ornamental species of pepper, P. decurrens would be difficult to match against its congeners.

Buxus sempervirens 'Rosmarinifolia' (P.I. 240528) with small rosemarylike leaves, and the variegated-leaved umbrella plant (Cyperus alternifolius 'Variegatus') (P.I. 240530) with white-striped
leaves are of special interest among the hardy plants.

### ISTITUTO TECNICO AGRARIO STATALE

FLORENCE

(May 29)

The Technical Institute for Agriculture at Florence functions as a government-supported experiment station for agricultural research, other than forestry. Projects concern fruits, vegetables, forage crops, and ornamentals.

A project on the breeding of caladiums (Caladium × hortulanum) is now in progress. Caladium 'Irene Alpe' (P.I. 240500) is a good dwarf form with scarlet leaves and greenish margins.

#### GIARDINI DI MARIGNOLLE

#### FLORENCE

(May 28)

Count Piero Grossi, owner of the Marignolle Gardens has developed a notable modern flower garden on the edge of Florence. Indeed, a garden of blooming plants is somewhat of an innovation in Tuscany, since the classical flavor of the Renaissance still prevails among the older gardens of this region. Count Grossi has set a pattern of excellence in the development of a small garden that might well be imitated in other parts of Italy. At the Marignolle Gardens, formally clipped hedges and long lanes of cypress trees (Cupressus sempervirens), typical of older Tuscan gardens give way to flowering shrubs, trees, rock garden plants, and perennials. Tropical hybrid water-lilies (originally imported from the Missouri Botanical Garden, St. Louis) are grown in a small lake in summer. Orchids and some other kinds of greenhouse plants are grown in a conservatory.

Various brooms, such as Cytisus junceum, Genista tinctoria, G. hispanica, and G. pilosa are the most prominent of spring-flowering shrubs. On the rock garden, Armeria 'Glory of Holland', with deep pink flowers, is one of the best of the new thrifts of Dutch origin. Allium nigrum (P.I. 240525) with basal leaves 6 inches long and 2 inches wide and white flowers in a tight head, 3 to 4 inches across on 2-foot scapes, is an ornamental species of onion worth cultivating. Iris spuria in various shades from yellow to white is planted extensively at the edge of the small lake. Of the late-flowering iris few species surpass the better color forms of I. spuria. Planted with the iris is Arundo donax 'Variegata' with white-variegated leaves.

Potentilla 'Warrenensis', one of the best of the herbaceous cinquefoils, is planted on the rock garden.

A large collection of rex begonias is a special feature in the greenhouse. Begonia rex (P.I. 240527) is an elegant form with blackish slightly mottled reddish leaves with a metallic sheen.

#### ARBORETUM SPERIMENTALI DI VALLOMBROSA

#### VALLOMBROSA

(May 30)

The Arboretum of Vallombrosa functions as a detatched research facility of the Experimental Station for Silviculture at Florence (Stazione Sperimentale di Selvicoltura. The arboretum is located at an elevation of about 3,000 feet in the heavily wooded Apennines about 25 miles east of Florence. At this altitude, the rainfall is sufficiently high to support a diversified collection of conifers, deciduous trees, and shrubs. The arboretum covers several hundred acres on the steep mountain slopes adjacent to a forest of Abies alba, the native white fir of Italy.

A fairly extensive collection of temperate woody plants includes species of Acer, Betula, Euonymus, Fraxinus, Ilex, Rhamnus, Rhus and species in some other genera maintained primarily for acclimatization and silvicultural studies. The native sycamore



Figure 13. -- Chinese waterpine (Glyptostrobus pensilis) with lacy foliage in foreground. (Courtesy of Istituto Tecnico Agrario, Florence.)

maple (Acer pseudoplatanus) in this region is a large forest tree. Of the introduced maples, a 40-foot specimen of A. nikoense and 30-foot specimens of A. palmatum and A. japonicum are notable. But the emphasis is on conifers.

Of the exotic conifers, Chamaecyparis lawsoniana, Pseudotsuga menziesii, Thuja plicata, and Sequoiadendron giganteum are the species most
extensively planted. Specimens of
Pinus lambertiana, the sugar pine of
California, are over 100 feet tall.
Glyptostrobus pensilis, the Chinese
waterpine is the rarest conifer in the
collection (fig. 13). At least two
specimens of the latter species are
40 feet tall. In south China G. pensilis
occurs along watercourses but is not
known in the wild.

On the mountain slopes below the arboretum, a fairly large experimental area is devoted to studies on European chestnut (<u>Castanea sativa</u>) to find clones resistant to the chestnut blight (<u>Endothia parasitica</u>). The chestnut industry in Italy is periled by the inroads of this pernicious disease.

ORTO BOTANICO

PISA

(June 1)

Luca Ghini, father of botanical gardens and one of the first great Renaissance teachers of plant science, is said to have brought plants from the hills near Pisa to grow "for the utility of students." Thus the first of the World's botanical gardens was born at Pisa in 1543. Species from foreign lands soon found their way to Pisa, especially those with curative properties. Botanical gardens in the beginning were herb gardens for growing simples or medicinal plants. Thus, the garden at Pisa was at first "Orti dei Semplici," or Garden of Simples.

The original garden was transferred in 1595 to its present location. The site now occupies about 7 acres. Unfortunately, the garden is little known except to students. Botanical gardens in Italy rarely admit the public.

Introductions of Narcissus tazetta variants grown at Pisa include 'Puccinellii' (P.I. 240925); 'Italicus' (P.I. 240993); 'Barlae' (P.I. 240926); 'Chrysanthus' (P.I. 240927); 'Aureus' (P.I. 240992); and 'Papyraceus' (P.I. 240994).

Eryngium pandanifolium (P.I. 240617) trom Uruguay is perhaps the largest species of the genus; plants often become 10 feet tall. Arundinaria spp. (P.I. 240615) is a variegated-leaved cultivar of this hardy bamboo.

Tropical species of special interest in the greenhouse include Rhytidophyllum tomentosum (P.I. 240620), a shrubby member of the Gesneriaceae from the West Indies; Pilea pubescens (P.I. 240623), an attractive shiny-leaved species from Brazil; Anthurium scandens (P.I. 240614), from Brazil; and Peperomia pereskiaefolia (P.I. 240621), from Colombia, with whorled prominently veined leaves resembling those of the cactus called Pereskia.

#### Historic Trees at Pisa

Ginkgo biloba (male), 105 feet tall, planted in 1787. Magnolia grandiflora, specimens planted in 1781 and 1802.

Quercus virginiana (live oak), planted in 1829.

Zelkova carpinifolia, 100 feet tall.

Liquidambar orientalis (Turkish sweet gum), 100 feet tall.

Taxodium distichum (swamp cypress), 100 feet tall.

Jubaea spectabilis (Chilean wine palm), 60 feet tall.

The old botanical institute, built in 1600 as a gift of the Grand Duke of Tuscany, stands bizarrely decorated with cockle shells as a prominent historical feature of the garden (fig. 14). A newer institute building dominates an area in the middle of the garden.



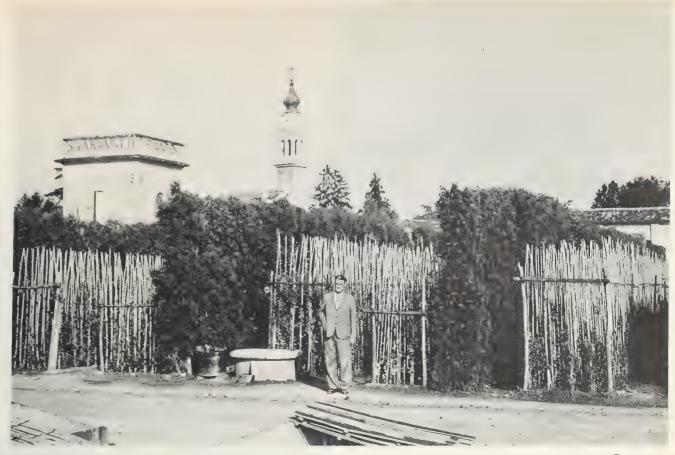
Figure 14. --Old botanical institute, Pisa, Italy, built in 1600 as a gift of the Grand Duke of Tuscany.

#### NURSERIES OF SGARAVATTI

ROME (May 26); SAONARA (June 8)

The nursery firm of Sgaravatti, founded in 1820, ranks as one of the largest and most modern in Italy. Three nurseries in different parts of the country serve the business. Two of these were visited, the nursery at Rome and the one at Saonara near Padua (fig. 15).

Near Rome, the Sgaravatti firm operates a completely modern establishment that serves the largest metropolitan area of Italy. Houseplants and a general selection of hardy nursery stock are the specialities of this nursery. Monstera deliciosa, Ficus elastica 'Decora', multicolored crotons (Codiaeum), 'philodendrons, dieffenbachias, caladiums, vriesias, peperomias, and anthuriums are grown by the thousand. Peperomias and Maranta leuconeura 'Kerchoveana' are grown by a novel method on open greenhouse benches in half-decayed leaves. Several outdoor display gardens for the attention of visitors are among the most cleverly designed of small modern gardens seen on the Mediterranean.



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Figure 15. -- Nursery of Fratelli Sgaravatti, Saonara, near Padua, Italy. Thuja occidentalis windbreak protects young nursery stock.

Roses and perennials are specialities of the nursery at Saonara. Two trumpet vine introductions are of special interest. <u>Podranea riscasoliana</u> 'Comtesse Zara' (P.I. 240742) is a selection originally from this nursery with soft rose-colored flowers. <u>Campsis radicans</u> 'Golden Trumpet' (P.I. 240741) is a yellow-flowered form of this North American species.

#### ORTO BOTANICO

#### PADUA

(June 7-8)

Few gardens of Europe are of greater historic interest than the Orto Botanico at Padua. Founded in 1545, this garden stands as the World's oldest botanic garden still on the original location. Only the garden at Pisa, now on a second site, claims longer length of service by 2 years. Aged trees planted centuries ago are scattered about the garden. The plants everywhere are carefully tended, though in number of kinds, the collections now are less than a quarter the size they were 100 years ago. Architecturally, the Orto Botanico at Padua is unique among the botanical gardens of Europe. (Fig. 16.)



Figure 16. --Botanical garden, Padua, Italy. Fan palms (Chamaerops humilis) in foreground, the only palm native of the Mediterranean region.

garden walls. A pool for hardy nymphaeas occupies a prominent site in the center of the garden. The botanical institute, an arboretum, and greenhouse are additional fa-

cilities outside the old garden walls.

Introductions rapidly found their way into the botanic garden soon after its founding. Seven years later about 1,500 kinds of plants were in cultivation. This was the largest collection in Europe at this period. Three hundred years later, in 1854, 16,000 kinds were under cultivation at Padua. At the present time, the collection is down to about 4,000 kinds, largely on account of the lean years of World War II. The history of plant introduction over the past 414 years at the Orto Botanico represents an important chapter in the history of cultivated plants in Europe.

Many plants now widespread in cultivation in Italy and in other parts of Europe first were grown at Padua.

A well preserved 16th century stone wall, 15 feet high completely encircles the original garden of about 4 acres. A balustrade atop the wall is studded with marble busts of former directors and garden curators. Inflorescences of Yucca sculptured in wrought iron atop the garden gates complete the ornamentation of the ancient garden wall.

Herbaceous plants predominate among the collections grown within the garden enclosure. The species are arranged by phylogenetic relationships in small beds neatly edged with stone (fig. 17). This is the European custom of growing plants in botanic gardens. The onions and related liliaceous plants are grown together as are species of the rose, legume, aster, and other plant families. Vines clamber on the

Figure 17. --Stone-edged beds for growing plants according to botanical relationships.

Introductions of some well-known species are of interest: Syringa vulgaris, 1565; Helianthus annuus, 1568; Solanum tuberosum, 1590; Sesamum orientale, 1590; Jasminum fruticans, 1590; Rudbeckia laciniata, 1642; Robinia pseudoacacia, 1662; Diospyros virginiana, 1760; Juglans nigra, 1760; Asimina triloba, 1801; Pittosporum tobira, 1820.

Old plantings of trees still extant in the garden are of historic interest. A specimen of Oriental planetree (<u>Platanus orientalis</u>), planted in 1690, is now about 75 feet tall. A group of Mediterranean fan palms (<u>Chamaerops humilis</u>), planted in 1585, are of special academic interest (fig. 18). Wolfgang von Goethe, in 1787, on his visit to <u>Padua</u> studied these specimens in preparation of his now classical treatise on plant

morphogenesis called "Die Metamorphose." An old male Ginkgo biloba tree with a large female branch grafted on one side was planted in 1760. The oldest plant in the

collection is a chaste-tree (Vitex agnus-castus), planted in 1550.



Figure 18. --Shelter over specimens of Chamaerops humilis, planted 1585.

Introductions from Padua of special note include Schefflera hors-fieldii (P.I. 240683), a Javanese evergreen tree of the Araliaceae with digitately compound leaves; Acanthopanax henryi (P.I. 240677), a Chinese species with large clusters of black fruit; and Celastrus (Gymnosporia) pyracanthus (P.I. 240679), an evergreen spiny shrub of South Africa regarded as a potentially good hedge plant.

#### ORTO BOTANICO

#### GENOA

(June 10)

The botanical garden at Genoa, founded in 1803, covers about 5 acres of terraced slopes that overlook the city and the Mediterranean beyond. The Hanbury Botanical Institute occupies a sizable portion of the Orto Botanico. An arboretum occupies nearly all of the available ground area. The herbaceous plants are grown almost entirely in pots placed on the wide open balconies of the botanical institute. Greenhouse space is provided for a small collection of tropical species. The collection of plants in the small space provided is unusually good and includes species not encountered elsewhere on the Mediterranean.

Large cork oaks (Quercus suber); Araucaria bidwillii, 60 feet tall; giant sycamores (Platanus acerifolia); Aleppo pines (Pinus halepensis); cluster pines (Pinus pinaster); and stone pines (Pinus pinea) are dominant among the large trees in the arboretum. A large specimen of Arbutus andrachne, the eastern Mediterranean species, is about 30 feet tall.

A specimen of Notelaea excelsa (P.I. 240764), over 20 feet high, is the largest plant of this evergreen Canary Island relative of the olive seen in Mediterranean gardens. This species makes a fine specimen plant but outside botanical gardens it is barely known. Other introductions of merit from Genoa include Cussonia thyrsiflora (P.I. 240760), a small evergreen tree of the Araliaceae from South Africa, of potential value as a street tree for a climate nearly frost free; Banksia verticillata (P.I. 240754), an evergreen Australian species of Proteaceae, easier than some other members of the family to cultivate; Curtisia faginea (P.I. 240759), an evergreen 20-foot tree of the Cornaceae from South Africa; Trichocladus crinita (P.I. 240767), an evergreen shrub, witch-hazel relative from South Africa with brownish velvety leaves.

Two species of much ornamental merit but unavailable for introduction are Weinmannia pubescens, an evergreen tree from the Andes of Colombia, and Tupidanthus calyptratus, a showy evergreen shrub to small tree of the Araliaceae from India. The latter species is closely related to Schefflera.

A fascinating technique used in the Orto Botanico of growing woody plants on a mound of sphagnum moss is recorded as follows: A circular marble slab 2 to 3 feet in diameter and about 1 inch thick provides footing for the plant. Sphagnum moss in the shape of a small igloo is mounded 12 to 18 inches high over the face of the marble slab. The plant to be grown is planted on the summit of the mound of sphagnum moss. The sides of the moss are always completely exposed. The plant roots bind the moss together and prevent tilting of the plant. Occasional watering is sufficient to keep the plant flourishing in spite of the fact the plants stand on an open balcony in the botanical garden the year round. (Fig. 19.) Six-foot specimens of Cycas revoluta, smaller specimens of Cleyera japonica, and several kinds of arborescent ericas are skillfully grown by this technique at the Orto Botanico. The beauty of the plant itself stands unmarred when grown by this novel procedure. Indeed, this method would seem to hold much appeal for growing shrubby plants on patios.



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Figure 19. --Cycas revoluta growing on a mound of sphagnum moss with the support of a slab of stone at the base.

This unusual cultural method is used for growing heather and other woody plants.

## STAZIONE SPERIMENTALE DE FLORICULTURA

#### SAN REMO

(June 12 and July 15)

The terraced slopes above the Mediterranean were still ablaze with masses of blooming roses and carnations, although June is the end of the blooming season for these plants at San Remo.

Located in the heart of the flower fields of the Italian Riviera, the Experimental Station for Floriculture (Stazione Sperimentale de Floricultura, "O. Raimondo") at San Remo is the leading institution in Italy for research in flower crops. It is supported by the horticultural industry along the Italian Riviera. Founded in 1925 by Prof. Mario Calvino and maintained under his inspired guidance until his death in 1949, the Experimental Station is now directed by his wife, Giuliana Eva Calvino and her staff. Over the past 30 years, research at San Remo has been of inestimable value to the now thriving horticultural industry of the Italian Riviera.

Research activities concern roses, carnations, gladioli, freesias, strelitzia, primula, and pelargoniums, the principal flower crops of the region. Roses and carnations are the leading crops, and accordingly receive a major part of the research effort at San Remo, carnations in particular. Carnations grown on the Italian Riviera are available in a wide color range. These flowers are shipped to all parts of Italy. Roses developed at San Remo are well known and esteemed by rose growers the world over. San Remo is a center for rose breeding.

New flower crop development occupies a part of the research program at San Remo. Lilium is under investigation, especially L. tigrinum and L. regale. Pelargonium seedlings are under trial. Of special interest, Pelargonium 'Millionaire' (P.I. 240813) has flower heads 6 inches across and individual salmon-pink flowers 2 inches in diameter. Viola cornuta 'San Remo' (P.I. 241030) is a good color selection of the garden viola with large blue flowers of fine quality.

In the greenhouse, Crossandra nilotica (P.I. 241382) is under observation as a possible new pot plant. This African species with dull green leaves and orange flowers is very floriferous when pinched back. Hypoestes maculosa (P.I. 241204) of the Acanthaceae with pink mottled leaves is a showy foliage plant when fertilized and maintained in vigorous growth. Peperomia resedaeflora (P.I. Nos. 240823 and 241257) from Colombia is a good pot species with glistening leaves and white flowers that resemble the mignonette.

Convolvulus mauritanicus (P. I. 241855) of North Africa and the native Italian C. mauritanicus var. sabatius (P. I. 241854) are handsome creepers with powder-blue flowers; both are excellent for growing in hanging baskets or on a sunny bank in a mild climate. Bosea amherstiana 'Variegata' (P. I. Nos. 240810 and 241397) is a scrambling evergreen shrub of the Amaranthaceae with handsome white-variegated foliage. Cissus striata (P. I. 240820) is a first-class climber from Peru with dark green shiny leaves; this species deserves wider distribution in the United States as a pot plant. A large specimen of Beaumontia grandiflora with several hundred white flowers the size of Easter lilies out-performed all other woody plants in flower at the Experimental Station, San Remo, during our visit in early June.

## LA MORTOLA GARDENS

#### VENTIMIGLIA

(Apr. 23, June 28, July 12 and 15)

La Mortola, near Ventimiglia on the Italian Riviera, is well known among Mediterranean gardens. As a monument to its founder, Sir Thomas Hanbury, it stands as one of the finest gardens of its kind over established in southern Europe. The garden occupies a picturesque site overlooking the Mediterranean on "La Punta della Murtola," so-called for the many native myrtles (Myrtus communis) growing there. La Mortola dates from 1867, when Thomas Hanbury, an English merchant with a fortune made in the Far East, purchased 100 acres adjoining the 14th century Palazzo Orengo, once the estate of a noble Genoese family.

Sir Cecil and Lady Hanbury are largely responsible for the present proportions of the garden at La Mortola. Since the death of Sir Cecil in 1937 the garden has been solely in the hands of the Lady Hanbury. Several times La Mortola suffered severe damage during World War II. In recent years, there has been a decline of new introductions into the garden.

Horticulturists know La Mortola not only for the large and varied plant collections but also as an architectural gem of the gardener's art. Few private gardens in Europe have attained the breadth and scope of La Mortola. Architecturally, the garden is designed in Anglo-Italian taste partly as a botanical garden in the traditional sense but more as a horticultural collection with the best to be obtained in flowers, shrubs, and



Figure 20.--A small temple in La Mortola gardens with dome of ornamental iron grille. (Note large specimen of Yucca elephantipes in background, and columnar specimens of Cupressus sempervirens).

trees. For some years, an exchange of students between Kew Gardens in England and La Mortola encouraged a lively academic spirit at the garden.

Under the direction of Alwin Berger, longtime superintendent at La Mortola, the garden maintained one of the most complete succulent collections in Europe. Part of this collection still persists, including large 50-year old specimens of Dasylirion, Nolina, Yucca, Aloe, Opuntia, and Euphorbia. Since the death of Sir Thomas in 1907, succulents have ceased being a major feature of the garden. Conifers, flowering trees, shrubs, and vines have become the most prominent horticultural attractions. The finest conifers are old specimens dating from the early years of the garden. A specimen of Abies cephalonica, the Greek fir, is 120 feet tall. Cedrus is represented by 50-to 75-foot specimens of C. libani, C. deodara, and C. atlantica. Long avenues of Mediterranean cypress (Cupressus sempervirens), many specimens of which are 75 feet tall, are among the most strategic and impressive plantings at La Mortola (fig. 20). Native Aleppo pines (Pinus halepensis) with twisted and often bizarre shapes contribute greatly to the character of

the garden. Large olive jars, various Roman antiquities, small amounts of statuary, and skillfully wrought ornamental iron grille gates in several locations are features of the garden rendered in the Italian taste.

The pink-stuccoed villa, now enlarged over the original 14th century Palazzo Orengo, commands a prominent focal point for the entire garden. A series of small hedge gardens, called "Giardetti" with patios paved in Roman brick adjoin the villa. Plants with scented foliage are planted in a special garden at the foot of a 20-foot brick wall below the broad balcony in front of the villa. A specimen of Rosmarinus officinalis 'Prostratus' (P.I. 241097) overhangs the wall for nearly 20 feet; and Trachelium caeruleum, a native campanula relative of the Mediterranean region with corymbs of deep blue flowers grows profusely from the crevices of the bricks. Seeds of the wintersweet, Chimonanthus praecox (P.I. 241484) were gathered from a large fruiting bush in one corner of this garden. The lemon verbena (Lippia citriodora), known for the

fragrant lemon-scented leaves, is a prominent plant in this special garden of scents.



Figure 21. -- La Mortola gardens. The Canary Island palm, and white and blue-flowered Agapanthus are commonly planted in the garden.

Specimens of Cycas revoluta, Encephalartos lehmannii, Dioon edule, D. spinulosum, and Zamia are included in the garden of cycads. Both zonale and peltatum pelargoniums are naturalized. These plants are displayed in large terra cotta pots strategically placed in many parts of the garden. In July, the 4 to 6 inch flowers of Romneya coulteri, the white poppy of California, are strikingly showy against the dark green cypress hedges. Of the bulbous plants flowering in midsummer, long rows of white and blue Agapanthus are much in evidence. (Fig. 21.)

A collection of subtropical vines on the long pergola includes Phaedranthus buccinitorius, a beautiful climber from Mexico with orange-red trumpet-shaped flowers; Pyrostegia venusta, with tubular orange-crimson flowers; Anemopaegma chamberlaynii, a Brazilian species with tubular pale yellow flowers; Campsis × tagliabuana 'Mme. Galen' (Campsis grandiflora × C. radicans), a fine selection of the hybrid with orange-red flowers; Araujia sericifera (P. I. 241098), a Peruvian species of the milkweed family with

pinkish-white flowers; hybrid passifloras; Lonicera hildebrandiana, the giant honey-suckle from Burma; Ipomoea leari; and Mandevilla suaveolens. Ephedra altissima (P.I. 241485), a rampant woody scrambler of North Africa has ascended nearly 30 feet into one of the cypress trees. The ripe fleshy fruit of the latter species resemble red currants.

Acacias are much in evidence in the garden. Acacia baileyana begins to flower in January and other species follow, ending with A. sparsiflora in midsummer.

A plant of great beauty is <u>Cantua buxifolia</u> (P.I. 241353), the so-called Sacred-Flower-of-the-Incas with purplish-red pendulous flowers. This is the colorful national flower of Peru. At La Mortola it flowers in April. <u>Banksia latifolia</u>, an evergreen shrub from Australia, is one of the rarest plants in the collection. The erect conelike flower heads at the tips of the branches of the latter species simulate whitish candles 6 inches long and 2 inches in diameter. <u>Solanum rantonnetii</u> (P.I. 241401), is a shrubby species from Paraguay, 4 to 6 feet tall with spreading branches and clear blue flowers an inch across.

## SOUTHERN FRANCE



French Riviera at Cap Ferrat.

BN-8963

#### FRENCH RIVIERA

As a center for subtropical horticulture, the many gardens of the French Riviera are unrivaled among the gardens of southern Europe. As a geographical province, the French Riviera extends from Hyeres along the Mediterranean coast to the Italian border at Menton, a distance of about 200 miles. Beyond Menton the Italian Riviera begins. The most favorable section for subtropical gardening and area of greatest horticultural interest lies between Cannes and Menton.

The mildest area of all, "La Petit Afrique," begins just east of Nice and extends eastward to Menton and beyond to the Italian Riviera for a few miles. The Maritime Alps along the coast of La Petit Afrique rise for several thousand feet almost directly from the sea and thus effectively shelter the coastal region against the cold northerly winds. Frost is rare. The most important gardens of the French Riviera are located along this narrow coastal strip. Orange and oleander trees, date palms, and jacaranda are used for street trees in the towns. In normal seasons bananas are hardy in the mildest sections. In the Municipal Gardens at Monaco, at least 25 species of palms are thriving. The roadways are planted with bougainvilleas and pelargoniums. In the mild arid climate cacti are widely grown and have naturalized throughout the area in a latitude comparable to that of southern Newfoundland.

Field-grown roses and carnations, mostly between Nice and Cannes, and the extensive flower fields near Grasse contribute further to the horticultural wealth of the French Riviera.

Nearly 1,000 introductions originated from about 20 localities visited on the French Riviera.

## VILLA THURET

## ANTIBES

(July 10, 12)

The National Institute for Agronomic Research at Cap d'Antibes, known as the "Villa Thuret," is well known among the leading horticultural institutions of France (fig. 22). The garden dates from about 1860 when Gustave Adolphe Thuret, artist-



Figure 22. -- Villa Thuret, Cap Antibes, Alpes-Martimes, France.

diplomat, purchased the property for reasons of health. Before his death in 1875, Thuret assembled the first large collection of subtropical woody plants on the French Riviera. The present arboretum covers about 10 acres.

Excellent laboratories and an extensive library in the villa provide the most complete facilities for horticultural research in southern France. Greenhouse space, although limited, is available for use in plant breeding and physiological research.

Subtropical and Mediterranean species predominate among the plantings of the arboretum. The collection consists of about 1,500 to 2,000 kinds of plants. A small assortment of <u>Cistus</u> hybrids is all that remains from earlier extensive

collections of this plant. Intensive studies on the hybridization of <u>Cistus</u> were conducted at Villa Thuret over many years by Naudin, former director of the garden in the early years of the present century. An illustrated monograph on the subject was published.

Many palms and other trees planted by Thuret represent the oldest specimens of their kind on the French Riviera (fig. 23). <u>Araucaria bidwillii</u> is now 80 feet tall; <u>Jubaea spectabilis</u>, 50 feet tall; and <u>Juniperus drupacea</u>, 60 feet tall. A particularly fine grove of <u>Pinus pinea</u>, the Mediterranean stone pine near the Villa, dates from a planting about 1870.



Figure 23.--Palms and other trees at Villa Thuret. Sabal spp.,

Butia capitata, Jubaea spectabilis, Chamaerops humilis,
and Araucaria bidwillii.

Introductions of special interest: Arbutus andrachne (P.I. 241319), an evergreen species of the eastern Mediterranean, and A. glandulosa (P.I. 241351), an evergreen species from Mexico; Citharexylum ligustrinum (P.I. 241352), a lustrous-leaved evergreen shrub from Brazil; Adenocarpus anagyrifolius (P. I. 241350), a yellowflowered shrub of the Leguminosae from North Africa flowering in midsummer: Pachystroma longifolium (P. I. 241356). a handsome evergreen shrub with hollylike leaves of the Euphorbiaceae from Brazil. Pittosporum coriaceum (P.I. 241358) from Madeira, 50 feet tall at the Villa Thuret is an evergreen tree recommended for avenue planting.  $Garrya \times thuretii$  (G. elliptica  $\times$  G. fadyenii) (P. I. 241323) originated in the garden in the days of Thuret. This hybrid evergreen shrub to small tree should be grown in a climate with no more than 10 to 15 degrees of frost.

SERRE DE LA MADONE

VAL DU GORBIO, MENTON

(Apr. 24, 25, June 25, July 8, 16)

Many of the finest gardens of the French Riviera belong to British settlers attracted to this area for climatic or health reasons. One such garden, the

Serre de la Madone, of the late Major Lawrence Johnston, is located in one of the mildest districts of the French Riviera at Menton, a few kilometers from the Italian frontier. In the nearly frost-free climate, a large collection of subtropical plants was assembled by Major Johnston over a period of 40 years. Trees, such as Oreopanax capitatus, O. dactylifolius, and O. echinops of the Araliaceae, are 25 feet high at the Serre de la Madone. Indefatigable in his energies, Major Johnston traveled to South Africa, China, India, and Burma in his quest for unusual garden plants. The plantings now cover several acres on a series of terraces in an abandoned olive grove. The collections are less extensive than for some other Riviera gardens, but Major Johnston's discriminating taste allowed only the choicest of plants to be grown.

Banksia integrifolia, an Australian evergreen tree of the Proteacease, is 25 feet high. Acer oblongum, an evergreen maple from the Himalayas, is nearly 20 feet high. Hedera chrysocarpa (P.I. 239247) is a yellow-fruited ivy from the Caucasus. Oreopanax

echinops (P. I. 239253 is a handsome Mexican species with large digitately divided and felted leaves; it makes an interesting pot plant.

Two mahonias are of special interest. Mahonia lomariifolia (P.I. 239276), a striking arborescent species 10 to 12 feet tall, was first introduced to cultivation by Major Johnston from Upper Burma. In April great masses of blue fruit are borne at the branch ends among the lustrous pinnately divided leaves. Mahonia spp. (P.I. Nos. 239248 and 241328), an unnamed species from Upper Burma with pinnately divided leaves, much larger than in M. lomariifolia, is more akin to M. nepalensis.

More rarities from Serre de la Madone include <u>Decumaria sinensis</u> (P.I. Nos. 239246 and 241311), a beautiful evergreen climber from China with festoons of white flowers that cover the plant in April. It is a <u>Hydrangea relative</u>. <u>Buddleia farreri</u> (P.I. 241018) is a Chinese species with decorative velvety white-tomentose leaves and less impressive flowers. <u>Sarcococca ruscifolia</u> (P.I. Nos. 239359 and 239378) from China is perhaps the showiest species of the genus with clusters of dark red fleshy fruit and blackish-green evergreen foliage. <u>S. saligna</u> (P.I. 239335), a Himalayan less showy species, has purple fruit and lanceolate, light green evergreen leaves.

In July, flowering oleanders are conspicuous at Serre de la Madone. The most attractive are Nerium oleander 'Aurantiacum' (P.I. 239249), with orangish-yellow flowers; P.I. 241315, an unnamed cultivar with yellowish-pink flowers; and P.I. 241316, an unnamed cultivar with semidouble carmen-red flowers.

Hibiscus syriacus (P.I. Nos. 241313 and 241391) with pure white flowers 3 to 5 inches across is the best of the hardy plants for northern gardens of the United States introduced from Serre de la Madone. A better white rose-of-Sharon would be difficult to acquire (fig. 24).



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Figure 24. --An outstanding white-flowered form of the rose-of-Sharon (Hibiscus syriacus) (P.I. Nos. 241313 and 241391) with flowers 3 to 4 inches across.

## VILLA ROQUEBRUNE

## CAP MARTIN

(Apr. 26, July 16)

The garden of the Villa Roquebrune is well known on the Riviera. Located on Cap Martin, a picturesque peninsula between Monaco and the Italian frontier, the extensive collections of ornamentals have been brought together by Mrs. G. Warre, part-time British resident of the Riviera.

The Villa Roquebrune is a terraced garden on the edge of a precipice several hundred feet above the Mediterranean facing the Principality of Monaco. Native Aleppo pines (Pinus halepensis) lend a gracious air of maturity around which the garden has been developed (fig. 25).



Figure 25. -- A typical Mediterranean garden of the French Riviera. Cupressus sempervirens and Pinus halepensis are the evergreens. An assortment of flowering plants includes Pelargonium, Centaurea ragusina, Agave, Felicia amelloides. The ubiquitous Erigeron karwinskianus, a Mexican species, is one of the commonest introduced plants on garden walls throughout the Mediterranean area.

Acacias and bulbs from South Africa are prominent among the plants that flower in the spring months. In April, masses of Aster fruticulosus, an elegant species from South Africa with lavender-rose ray flowers, is conspicuous in several parts of the garden. Succulents, cacti, and pelargoniums are much grown. Pelargonium zonale and P. peltatum are represented by a wide range of color forms from blood-red through orange to white. P. acetosa (P.I. Nos. 241394 and 241395), with blue-green deeply cut foliage and bright salmon-pink flowers, is a first-rate species among the fleshy-leaved members of the genus. Lantanas with yellow, lavender, and white flowers contribute much to the kaleidoscopic color array of flowering plants. The Sicilian Scabiosa cretica (P.I. 241871), a shrubby species 4 feet tall with blue flowers, is one of the best of the rarely grown species of this genus.

Phaedranthus buccinatorius (P.I. 241399) is a good burgundy-red form of this Mexican trumpet vine grown by Mrs. Warre. As found in Riviera gardens, this plant varies greatly in flower color from almost clear orange to deep wine red. Thunbergia gibsonii (P.I. 241872), a tropical African species, covers a low wall. The bright orange flowers are indeed superior to those of the more commonly grown T. alata with a black eyespot. Bletilla striata, a Chinese ground orchid, is effectively grown in large terra cotta tubs on the patio. Romneya coulteri, the shrublike white-flowered poppy from California, grows particularly well in this garden. Cneorum tricoccon, a native Mediterranean evergreen shrub with boxwoodlike leaves, is one of the conspicuous broad-leaved evergreens of the Villa Roquebrune.

Lagunaria patersonii is a beautiful flowering tree of the Malvaceae from Australia. This species for several weeks in midsummer is laden with mauve to rose-pink flowers 2 inches across.

### LA LEONINA

#### BEAULIEU-SUR-MER

(July 17)

La Leonina, garden of Dr. Arpad Plesch, is devoted largely to economic plants. The site lies about midway between Nice and Monaco at Beaulieu-sur-Mer along the mild "La Petite Afrique" coast of the French Riviera. Dr. Plesch is keenly interested in growing subtropical fruits, unusual vegetables, and medicinal plants. This garden is unique among the private gardens of southern Europe.

A section of the garden, concentrated mainly on several acres in the vicinity of the villa, is devoted to ornamentals. At least 10 species of palms are represented, including large specimens of Phoenix canariensis, 50 feet tall; Washingtonia filifera, 80 feet tall; Erythaea spp.; Chamaerops humilis; Chamaedorea elatior; Jubaea spectabilis, 40 feet tall; and Livistona australis, 30 feet tall.

Specimens of the Moreton Bay fig (Ficus macrophylla), 50 feet tall; <u>Jacaranda acutifolia</u>, 30 feet tall; <u>Oreopanax floribunda</u>, 40 feet tall, are alleged to be the largest of their kind in Riviera gardens. An olive orchard reputed to be 1,000 years old stands adjacent to the grounds of the villa.

The large conservatory contains orchids, aroids, and other tropical ornamentals. Phymatidium tillandsioides (P.I. 241410) is a diminutive orchid from Brazil, a few inches tall with fragrant white flowers. A specimen of Hoya angustifolia (P.I. 241421) was in full flower. The pink flower clusters of this species, although much like those of H. carnosa, are smaller and borne in greater profusion.

The hardy herbaceous species of special interest include a hybrid Aristolochia (A. elegans × grandiflora) (P. I. 241404); Canarina campanulata (P. I. 241852), a beautiful climber of the Campanulaceae from the Canary Islands; Leonotis dysophylla (P. I. 241858), native of South Africa, a somewhat less showy relative of L. leonurus; Ruellia squarrosa (P. I. 241870), a creeping Mexican species with deep blue flowers.

The tropical fruits, such as mango, papaya, and lychee, are grown in a greenhouse. The collections of subtropical fruits, vegetables, and medicinal plants cover about 10 acres on 7 broad terraces of the mountain slopes behind the villa.

In his excellent catalogue issued in 1954, Dr. Plesch lists over 2,000 kinds of plants in his collection, mainly species of economic importance. A selection of species is included to cover the following main categories: Edible flowers; edible stems or

petioles; spices and plants with special flavors; starches and fats; spinach plants; edible pods; edible pulpy fruits; medicinal plants; oil-bearing plants; beverage plants; edible roots; sugar-producing plants; and plants with edible seeds.

The aims at La Leonina are to establish a center for plant introduction and for studies on the acclimatization of new economic plants for possible crop use on the French Riviera.

## JARDIN BOTANIQUE, "LES CEDRES"

ST. JEAN, CAP FERRAT

(May 1, June 15 - July 27)

"Les Cedres", garden of Monsieur Julian Marnier-Lapostolle is well known among the newer gardens of the French Riviera. Formerly the property of Leopold II, late King of the Belgians, Les Cedres was purchased by the father of the present owner in 1920. The garden now supports the largest collection of subtropical plants and succulents in southern Europe.

Located on Cap Ferrat, a few miles east of Nice, the garden enjoys a favored site along the French Mediterranean coast known as "La Petit Afrique." The garden is bounded on three sides by the Mediterranean. Nearby, the Maritime Alps rise for several thousand feet almost directly from the sea and effectively shield the coastal region for many miles against the cold northerly winds. Frost is rare. Climatically, the garden is admirably situated for growing a large collection of warm climate plants.

The natural vegetation of Les Cedres includes extensive groves of Aleppo pine (Pinus halepensis) and holly oak (Quercus ilex). Some fine old Lebanon cedars (Cedrus libani) in the garden allude to the epithet "Les Cedres" as the name given to the garden by Monsieur Marnier.



Figure 26. -- Jardin Botanique "Les Cedres." Note large leaves of Victoria cruziana, the giant water platter lily.

The collections comprise about 10,000 kinds of plants--wild species and horticultural forms combined. The collection of succulents alone is one of the largest in Europe. There is a tropical jungle complete with bananas, palms, begonias, lianas, and numerous other rain-forest type ornamental species. Bamboos are 30 feet tall in the bamboo garden. The water gardens include tropical nymphaeas, Nelumbium speciosum (white and pink), Victoria cruziana, and Typhonodorum madagascariensis, an unusual aquatic aroid from Madagascar (fig. 26). There is a citrus orchard. The wide borders with species of Acacia, Grevillea, Hakea, Callistemon, and Metrosideros from Australian and South Africa are prominent among the woody plantings.

In a series of greenhouses, Nepenthes, begonias, orchids, aroids, gesneriads, and ferns form part of the

tropical collections under glass. The Madagascar lace plant (Aponogeton fenestralis) attains perfection with leaves nearly 2 feet long, when grown in a specially darkened tank.

The succulent collection includes both Old and New World species. Cacti of South America are abundantly represented. Succulents from Madagascar specially featured in the collection include species of Euphorbia and of Didiereaceae, a small family of



Figure 27. -- Xerosicyos danguyi, a curious succulent member of the Cucurbitaceae, from southwestern Madagascar.

The collection of Kalanchoe is one of the most comprehensive of succulent genera in cultivation at Les Cedres. This genus offers promise for hybridization because of the wide diversity in habit, leaves, and variability in shape and color of the flowers. Some species are not showy even though others are very much so. K. pumila (P.I. 240026) with orchid-colored flowers, and K. manginii (P.I. Nos. 240024 and 241090) with scarlet tubular flowers are two species of unusual merit in the collection. Kalanchoes are desert plants of Africa and Madagascar.

The large unheated greenhouses contain a great majority of the succulent collection (fig. 28). Mammillaria, Rebutia, and Lobivia of the smaller

succulent trees and shrubs restricted to the southwestern Madagascar desert. The principal genera are <u>Didierea</u> and <u>Alluaudia</u>. <u>Xerosicyos</u> is a curious succulent genus of Cucurbitaceae from Madagascar (fig. 27). Species introduced are <u>X</u>. danguyi and <u>X</u>. perrieri.<sup>2</sup>



BN - 8966

Figure 28. -- Cissus jutae, a succulent species native of southwestern Africa.

Cactaceae, and Lithops, Pleiospilos, and Glottiphyllum of the Aizoaceae are kept for study purposes in the propagation area.

The collections throughout the garden are unmistakenly well labeled. About 600 introductions originated from the collections of Les Cedres.

<sup>&</sup>lt;sup>2</sup> Succulents from Les Cedres went directly to Longwood Gardens from the Inspection House, Washington, D. C., with the author's field number but without an assigned Plant Introduction (P.I.) number.

### VILLA CASA ROSSA

#### MENTON-GARAVAN

(Apr. 23-28)

Menton, last coastal town of the French Riviera at the Italian frontier, enjoys the mildest climate in southern France. The public gardens are among the most attractive of any town along the French Riviera. The Casa Rossa located here is a good example of a modern French garden in the Provençal taste (fig. 29).



BN - 8967

Figure 29. -- Garden of Villa Casa Rossa (note Datura at side of house).

Subtropical and Mediterranean plants predominate in the garden of the villa. Long rows of Canary Island palms (Phoenix canariensis) give entrée to the garden. Ten-foot specimens of Echium fastuosum flower in April. This arborescent species from the Canary Islands is covered with dense panicles of azure blue flowers, with the aspect of candelabras 6 to 8 inches long at the branch ends. Tree daturas (Datura arborea) with large lilylike white flowers about 8 inches long form handsome specimens 10 feet high against the walls of the villa. Thirty-foot olive trees (Olea europaea) on the terraces are considered to be very efficaceous and essential in the control of erosion on the steep mountain slopes. A properly managed tangerine grove is an important horticultural feature of the villa. Citrus trees in many Riviera gardens fruit poorly and suffer mutilation caused by gatherers of the leaves for the perfumeries at Grasse. Phlomis fruitcosa (P.I. 239334), a shrubby species of Labiatae, 2 to 3 feet tall with bright yellow flowers is one of the conspicuous ornamental plants in the garden. New introductions from South Africa and other regions are being added to the rapidly expanding plant collections of the Casa Rossa.

## JARDIN DES PLANTES

## MONTPELLIER

(Apr. 22, July 20)

The Jardin des Plantes at Montpellier, as the World's sixth oldest botanical garden, venerates much of historical interest to botany and to horticulture. Even before the formal establishment of the garden by Henry V, in 1594, the study of plants through 'herborisations' attracted students to Montpellier from manyparts of Europe (fig. 31).



Figure 30. -- Jardin des Plantes. The systematic beds are arranged in front of the orangery. (Courtesy of Jardin des Plantes, Montpellier.)

The names of Ruellius, Rondelet, Dalechamp, Lobel, Clusius, Bauhin, and Magnol are well known among the famous professors and students associated with the formative years at Montpellier. To botanists and horticulturists, these 16th and 17th century plantsmen are indelibly associated with plants long known to horticulture: Ruellia (Acanthaceae), Rondeletia (Ruiaceae), Dalechampia (Euphorbiaceae), Lobelia (Campanulaceae), Clusia (Guttiferae), Bauhinia (Leguminosae), and Magnolia (Magnoliaceae).

The Mediterranean climate of Montpellier is considerably more severe in winter than the area farther east along the French Riviera. The tenor of the climate is indicated by the plantings which consist largely of temperate species tolerant of some yearly frost. Of the palms, for example, only Chamaerops humilis and Trachycarpus fortunei thrive at Montpellier.

The garden covers 50 to 75 acres. An 18th century orangery and a series of conservatories for tropical plants were recently restored after neglect from World War II years. A rock garden is devoted to Mediterranean species. Herbaceous species are arranged phylogenetically in beds near the orangery. Most of the collection of woody plants in the arboretum are species grown widely in Mediterranean countries. The rarer species deserve mention.

A rarely cultivated holly grape, Mahonia moranensis (P. I. 241474), an evergreen shrub 6 to 8 feet tall with glossy leaves, is laden with clusters of blue berries in July. The latter species, probably a native of Mexico is known only in gardens. A 40-foot specimen of Fraxinus excelsior 'Diversifolia' is a rarely grown one-leaved form of the European ash. A large specimen of Arbutus andrachne, nearly 30 feet tall, is one of the oldest trees in the garden.

Junipers are among the most notable of the conifers grown in the Jardin des Plantes. The collection includes 40-foot specimens of <u>Juniperus torulosa</u>, a Himalayan species; <u>J. drupacea</u> from the eastern Mediterranean; and <u>J. thurifera</u>, a native species of central France.

In the Jardin des Plantes, the trees are labeled with a 4" x 6" sheetmetal plate bearing the plant name and a colored hand-painted map that shows the natural distribution (fig. 32).

The new botanical institute when complete and the reconstruction work in the botanical garden will establish the largest center for botanical research in France.



Figure 31.—Hand-painted 4'' x 6'' metal labels on trees gives the plant name and the distribution of the species—blue for water, white for land, and red for the area of distribution.

## NURSERIES AND FLOWER GROWING ON THE FRENCH RIVIERA

Nurseries. -- The nursery trade on the French Riviera is the most extensive in southern France. Here about 50 nurseries operate mostly within the relatively flat coastal region between Cannes and Nice. Most firms manage on a few acres, but around Nice larger firms sometimes operate on 75 acres.

In general, nursery practices on the Riviera are less advanced than the standards of mass production known by nurserymen in the United States. The supermarket method of producing nursery products, for example, has not yet been introduced to France. The mist technique of propagation is virtually unknown. New introductions of ornamentals are restricted largely to roses, acacias, oleanders, gladioli, and carnations. A Renaissance in the introduction of new materials by Riviera nurserymen could be wished for. Private persons are by far more active in the introduction of new ornamentals into Riviera gardens.

Oleanders. -- Much used for roadside and street planting, these floriferous evergreen shrubs are among the commonest and most successful garden plants grown on the French Riviera. At Monaco, along many streets, oleanders form small single-trunked trees, 10 to 15 feet tall. A wide diversity of flower colors range from pure white, yellowish-pink to deep pink, and burgundy-red. Single-flowered types are most frequently grown, almost to the exclusion of the less desirable double-flowered types. About 12 introductions of oleander originated from French Riviera gardens and nurseries.

Acacia. --In the Cannes area, about 5,000 people gain livelihood growing acacies for the cut-flower market and for the perfumeries at Grasse. The principal species grown are A. dealbata, A. baileyana, A. howittii, and A. podalyriaefolia. The most serious threat to the acacia growers are occasional freezes, such as the one of February 1956 that almost wiped out the acacia plantings. About a 5-year period is required to reestablish the industry. Selection for better foliage and flower types has brought into the trade several new cultivars of A. dealbata, such as 'Mireille', 'Soleil d'Empel', 'Gaulois', and 'Mirandole'. For foliage purposes, A. podalyriaefolia 'Denis Bodden', and A. howittii 'Clear de Lune' are outstanding.

Acacia dealbata and A. podalyriaefolia, both acid-loving, are grafted to A. sparsiflora understock, a summer-flowering species that tolerates the alkaline soils around Cannes. Inarching is the method used for the propagation of acacias in this region. The mother plant of the desired stock is allowed to sucker freely and long whips (scions) several feet long are produced. The scion wood and the understock are brought together about 4 feet above ground on a platform especially constructed over the mother plant. The understock in 4-inch pots is placed on the platform. Grafting of this scion wood is then affected by inarching, or by "marcotting" as termed by French growers.

Carnations. -- These flowers are grown extensively in open air nurseries and on mountain terraces, mostly in the area between Nice and Cannes. Large quantities are cut and shipped daily to the Paris flower stalls and to other parts of France. The main cutting season lasts from early winter until May. Because carnations are inexpensive on the retail market they are commonly used in flower bouquets in France. Field-grown carnations with split calyces and weak stems are the types most commonly grown, but such defects are of no apparent concern to French carnation growers or to the public who buy them.

Roses. -- These flowers are grown extensively as a field crop in the area between Cannes and Nice. Hybrid teas are the kinds most commonly cultivated. The well-known rose nursery of Meilland is located at Cap d'Antibes, where several acres under glass are used for rose breeding. This is the home of the rose 'Peace' and other new introductions to win universal acclaim from rosarians in recent years.

# NURSERY OF HERVE FAUTRELLE

GOLFE-JUAN

(July 10)

The Fautrelle nursery at Golfe-Juan stands among the better known nursery firms of the French Riviera. The list of nursery materials offered is fairly extensive and of good quality. Methods of growing lining out stock are comparable with techniques that prevail in the United States. A landscaping business associated with the nursery offers planting services for private dwellings, hotels, and public facilities in the highly concentrated urban area of the French Riviera.

Oleanders are a speciality of this nursery. Introductions include Nerium oleander (P.I. 241333), an unnamed yellow-flowered type; and (P.I. 241334) an unnamed single-flowered white with flowers 2 inches across. A rock-rose, Cistus villosus 'Nanus' (P.I. 241320), with deep rose-colored flowers 2 inches across, is a dwarf form of this ornamental Mediterranean species.

NURSERY OF G. L. DENTAL & CO.

GOLFE-JUAN

(July 12)

Woody plants, particularly of less common species cultivated in Riviera gardens, are offered by Mr. G. L. Dental, proprietor of the nursery at Golfe-Juan. Paulownia fortunei, Rosa henryi, Grevillea rosmarinifolia, Ficus roxburghii, Oreopanax dacty-lifolia, offered by this nursery, are plants seldom grown by Riviera nurserymen. Acacias as a speciality of this nursery include outstanding selections developed by French acacia growers, such as Acacia dealbata 'Bermond', 'Mirandole', and 'Gaulois', A. baileyana 'Comèté'; A. howittii 'Clair de Lune'; and A. podalyriaefolia 'Denis Bodden'.

A showy herbaceous plant, <u>Jacobinia suberecta</u> (P. I. 241355), with white hairy leaves and tubular orange-red flowers is fairly common in parks and gardens of the Riviera. <u>Trachelospermum jasminoides</u> 'Nanus' (P. I. 241360) is a dwarf nonrunning form of the confederate-jasmine.

## NURSERY OF TH. FISCH

**VALLAURIS** 

(July 9)

The nursery of Th. Fisch offers a good general collection of nursery stock suitable for Riviera gardens with special emphasis on conifers, acacias, and oleanders (fig. 30).



Figure 32. -- Marcotting of Acacia dealbata scionwood on Acacia sparsiflora understock.

The nursery is located on a series of broad terraces above Vallauris, the well-known center of the ceramic industry in southern France.

Oleanders from this nursery include Nerium oleander 'Rosso Sangue' (P.I. 241329) with blood-red flowers; (P.I. 241330) with deep carmine flowers; and (P.I. 241331) with burgundy-red flowers, the darkest of redflowered oleanders seen. Rosmarinus officinalis 'Corsica' (P.I. 241338) from Corsica, is an outstanding cultivar of the rosemary with very dark-blue flowers and somewhat pendulous branches. Lithospermum fruticosum 'Rosmarinifolium' (P.I. 241327) with rosemarylike leaves is a good dwarf shrubby species often used in border plantings in Riviera gardens.

# PRINCIPALITY OF MONACO



Monaco and Jardin Exotique.

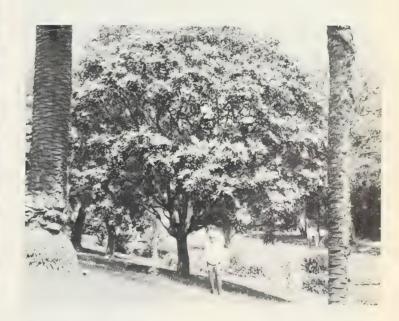
## PRINCIPALITY OF MONACO

## CASINO GARDENS

The Casino Gardens at Monte Carlo are well known among the oldest subtropical gardens of the Riviera. The garden dates from the latter part of the 19th century. Along this section of the Riviera, many subtropical trees thrive in the nearly frostfree climate. Palms, cacti, water gardens, flowering trees, and large well-kept flower beds in the sunken garden form the principal features of this, the largest public garden of the Principality. About 25 species of palms include large specimens of Phoenix canariensis, P. reclinata, Jubaea spectabilis, and Arecastrum romanzoffianum, A long avenue of 50-foot palms, Washingtonia filifera, line either side of the sunken garden leading to the Casino. Forty-foot specimens of Brachychiton populneum, a species of bottle tree from Australia is planted as a double row alongside the avenue of Washingtonia palms. An evergreen species of bottle tree, B. luridum, also from Australia, more than 50 feet tall with maroon-colored flowers, is one of the most beautiful flowering trees. Two small evergreen trees of outstanding merit are Oreopanax capitatus (P.I. Nos. 238955 and 241392) (fig. 33), about 25 feet tall with handsome lustrous foliage and O. dactylifolius (P.I. 240108) (fig. 34), about 30 feet tall with leathery deeply lobed leaves, lustrous green on the upper side and rusty-brown

Figure 33. -- Oreopanax capitatus (P.I. 238955 and 241392).

beneath. Both latter species are of Mexican origin and are recommended for wider planting in nearly frost-free regions and for pot culture. Large arborescent cacti 20 feet tall are also prominently displayed. Bougainvilleas scramble to the tops of some of the trees. Large beds of flowers in the sunken garden add much color to this part of the Casino Gardens.



-Figure 34. -- Oreopanax dactylifolius (P. I. 240108).

## JARDIN EXOTIQUE

(June 17 - 24)

The Jardin Exotique of Monaco is well known among the succulent gardens of the World. It was founded in 1913 during the reign of the late Prince Albert I, a beloved and liberal patron of the biological sciences. The garden of about 2 acres occupies an extraordinary site on the edge of a jagged and somewhat terraced precipice, 300 to 400 feet above the adjacent Mediterranean coast. Created for spectacular effect, the Jardin Exotique amply fulfills the role of a modern hanging garden. The inventory of species cultivated of succulent genera is indeed extensive, but the grouping of the species in the spectacular location manifestly is of greater interest to most visitors.

Construction problems and maintenance of the collections bring forth a host of problems unique to this garden. All soil for growing the plants, for example, must be carried in by hand. Easy access to the garden by foot is provided over switchback pathways that traverse all parts of the garden for the use of over one-half million visitors each year.

Twenty-foot specimens of <u>Trichocereus pasacana</u>, <u>Pachycereus margińata</u>, and <u>Neobuxbaumia polylopha</u> are conspicuous among the arborescent cacti. Arborescent <u>Liliaceae</u>, equally as tall include <u>Aloe grantii</u>, <u>A. salmdyckiana</u>, <u>Yucca elephantipes</u>,

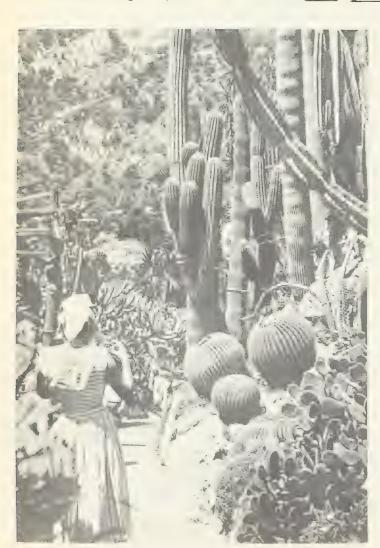


Figure 35. -- Echinocactus grusonii, Trichocereus pasacana, Neobuxbaumia polylopha.

and Nolina recurvata. Three-foot specimens of the Mexican barrel cactus (Echinocactus grusonii) planted in groups are hardly less striking at close range. Bizarre even among the cacti, the Argentine snake cactus (Trichocereus thelogonus) winds circuitously over rock ledges.

Of the smaller cacti, Opuntia microdasys and numerous species of Mammillaria assist in the kaleidoscopic display in a garden where plant form manifests the leading role. In addition to the cacti, the collection includes a



Figure 36. -- Forest of Cereus.

wide diversification of succulents in other plant families, especially Crassulaceae and Aizoaceae.

Of the succulent Compositae, the blue-stemmed kleinias from South Africa spread profusely to fill small valleys. Of the Aizoaceae, species of Glottiphyllum, Conophytum, and Ruschia form large mats that trail over rock ledges. The fat, foot-wide rosettes of Echeveria gibbiflora plastered against bare rock faces that resemble heads of luxuriant lettuces are perhaps the most striking of the Crassulaceae.

The preponderance of succulents in the Jardin Exotique is subtly relieved at various points by the addition of small pools of water, caves, and dripping springs for moisture-loving plants, such as Monstera deliciosa, African violets (Saintpaulia), ferns, peperomias, and philodendrons. Bougainvillea glabra 'Sanderiana' covers a pergola and is allowed to scramble over rock banks.

New materials are grown in the experimental area and introduction garden, prior to being planted in the permanent collection. New greenhouses will house the drawf succulents, such as <u>Lithops</u> and dwarf cacti, now difficult and impractical to grow together with the larger and giant species in the main garden.

In addition to the cacti from America, succulents from Africa and Madagascar are much planted in the Jardin Exotique. Introductions of Old World succulents of special interest are: Decanema bojeriana of the Asclepiadaceae from Madagascar; Alluaudia, a curious member of the Didiereaceae from Madagascar; Xerosicyos danguyi, a succulent species of the Cucurbitaceae from the deserts of southwestern Madagascar; Pelargonium graniticum and P. xerophytum, both from southwestern Africa; Aloe suzannae from Madagascar, with nearly round brownish leaves; and species of Madagascaran Kalanchoe, such as K. beauverdii, K. bracteata, K. eriophylla, K. gastonis-bonnieri. Introductions of South American cacti include species of Binghamia, Gymnocactus, Gymnocalycium, Lobivia, Mediolobivia, Rebutia, Trichocereus, Weingartia, and Seticereus.

Over 300 introductions, mostly succulents, 3 originated from the Jardin Exotique.

<sup>&</sup>lt;sup>3</sup> Introductions from the Jardin Exotique in Monaco went directly to Longwood Gardens from the Inspection House, Washington, D. C., with the author's field number but without a Plant Introduction (P.I.) number being assigned.

# SPAIN



Gardens of the Generalife, Granada.

## SPAIN

Relatively few collections of ornamental plants are available in Spain as compared with the more abundant sources in Portugal, southern France, and Italy. The Royal Gardens of La Granja near Segovia and those at Aranjuez are examples of old gardens associated with the Spanish Royal House. Of the older historic gardens, the Moorish gardens of the Alhambra and the Palace of Generalife at Granada and those in Seville are well known. But these historical gardens are not the best sources for ornamental plants. The botanical gardens in Santander, Santiago, Madrid, Barcelona, and Valencia are better sources of plant material of special interest to the objectives of this plant collecting trip. Public gardens of note exist in Madrid, Barcelona, and Malaga. The Pinya de Rosa and Marimurta are among the most important private gardens. They are located along the Spanish Riviera, called the Costa Brava by the Spanish, in the Province of Gerona north of Barcelona.

The nurseries visited in Madrid, Barcelona, and Seville stock a relatively limited selection of ornamentals widely grown in Mediterranean gardens.

## PINYA DE ROSA

BLANES

(July 21)

Pinya de Rosa, garden of Señor Fernando Riviere de Caralt, outranks in scope all other modern private gardens of Spain (fig. 37). Begun in 1940, the garden is designed to impart the Catalonian flavor of this part of northeastern Spain. The garden covers about 60 acres, along the picturesque Spanish Riviera at Blanes some 50 miles north of Barcelona. Few gardens in southern Europe are being developed more vigorously or more rapidly.



Figure 37. -- Pinya de Rosa, Blanes, Spain. Coast of the Spanish Riviera (Costa Brava) beyond. (Courtesy of F. Riviere-Caralt.)

The collections consist largely of succulents, since these plants readily acclimatize in the Mediterranean environment. Señor Riviere has assembled a very large collection of Opuntia and other American cacti (fig. 38). South African succulents of the Aizoaceae also are abundantly represented.



Figure 38. -- Garden of Pinya de Rosa, devoted largely to succulents, especially Opuntia, and succulents from the Old World. (Courtesy of F. Riviere-Caralt.)

The garden is expanding to include ornamental shrubs, trees, and herbaceous plants. A roadside bank some 200 feet long is planted to the creeping, lavender-flowered Convolvulus mauritanica (P. I. 241855), a North African species. Indeed, few plants are more appropriate for terraces and banks, or for a hanging basket. The rock garden includes some fine specimens of Pelargonium acetosa (P. I. 241394) with pink, red-striped flowers, which is one of the showiest of the fleshy-leaved species of Pelargonium.

The most unusual tree in the collection is <u>Sophora japonica</u> 'Dot' (P.I. 241473) with its wavy-margined leaves and contorted pendulous branches. This cultivar of the <u>Japan</u> pagoda tree originated in a nursery in nearby Barcelona.

The greenhouses are stuccoed on the exterior in the characteristic deep buff color of Catalonian dwellings. Collections under glass are devoted to orchids, aroids, peperomias, and other tropical species. Two aroids of special interest include Alocasia portei (P. I. 242026) from the Philippines with enormous pinnately divided leaves 15 feet long, and A. macrorhiza 'Variegata' (P. I. 241466) with blotched-white leaves, 4 to 5 feet long (fig. 39).

Attractive, specially designed porcelain labels are provided for many plants growing in various parts of the garden.



Figure 39. -- Greenhouse for tropical plants. Alocasia macrorhiza 'Variegata' (P.I. 241466) is the low-growing aroid with white-variegated leaves in the immediate foreground. A. portei (P.I. 242026) along the pathway with 15-foot leaves is a striking species from the Philippines. (Courtesy of Sagarra.)

## JARDIN BOTANICO "MARIMURTRA"

BLANES

(July 21)

"Marimurtra," formerly the private estate of Carlos Faust, is maintained as a private botanical garden according to the wishes of the late owner.

The garden covers about 40 acres on a high promontory above the Mediterranean at Blanes adjoining the garden of Pinya de Rosa described previously. Succulents predominate among the plantings. Kalanchoe faustii grown in the garden commemorates the name of the founder. Trees, shrubs, and herbaceous plants adaptable in the Mediterranean climate are also extensively planted. The collections include about 4,000 kinds of plants.

Native Aleppo pines (Pinus halepensis) form an extensive open woodland as a background for the plantings of exotic plants. A pergola is covered with wisteria (Wisteria sinensis) and trumpet vine (Campsis x tagliabuana 'Mme. Galen'). An adjoining formal garden is planted with multicolored crotons (Codiaeum) and other subtropical foliage plants. A new extension to the garden is being developed as an arboretum.

Introductions of note from to garden include Notelaea excelsa (P.I. 241604) an evergreen shrub to small tree, 8 to 20 feet tall with black olive-like fruit; it is native of the Canary Islands. Cneorum tricoccon (P.I. 241467), a native Mediterranean broad-leaved evergreen shrub with boxwoodlike foliage, is attractive throughout the year, especially in late summer when the 2- to 3-foot plants are laden with ripening red capsules. Rhagodia nutans (P.I. 241472), an Australian scrambling herb related to Chenopodium is naturalized in various parts of the garden. The small fleshy leaves and small bright red fleshy fruit are attractive. Rhagodia is reputed to be valued for forage in Australia. A beautiful specimen of Araujia sericifera (P.I. 238498), a milk-weed relative from Peru, scrambles over the loggia of the garden residence.

## JARDIN BOTANICO

BARCELONA

(July 22)

The botanical garden in Barcelona occupies an area of about 15 acres in an old woodland adjacent to Montjuich Park. This garden has been under development only in recent years through cooperative efforts of the park department of the city of Barcelona and the botanical institute of the University.

Evergreen holly oaks (Quercus ilex), sycamores (Platanus acerifolia), elms (Ulmus spp.), stone pines (Pinus pinea), and Aleppo pines (Pinus halepensis) form the basis of the older plantings. About 1,000 recent introductions have been incorporated into the permanent plantings.

The most unusual tree in the collection is Sophora japonica 'Dot' (P. I. 241473) with its wavy-margined leaves and contorted pendulous branches (fig. 40). This cultivar of the Japan pagoda tree originated in the nursery of Simon Dot near Barcelona about 1920. Apparently it has never been grown outside the Barcelona area.



Figure 40. --Sophora japonica 'Dot' (P.I. 241473), an unusual cultivar with pendulous, tortuous branches and crispate leaves originated in the Barcelona area.

#### JARDIN BOTANICO

## MADRID

(Apr. 18, July 26)

The botanical garden in Madrid long has stood among the well-known botanical institutions of Europe. Founded in 1781, this garden developed rapidly at the end of the 18th century and early part of the 19th as new plants were brought to Spain from the colonies in the New World. The <u>Dahlia</u>, for example, first entered Europe in 1789 via the botanical garden in Madrid.

The Jardin Botanico covers about 30 acres. A wall encircles the garden except where imposing iron grill entrance gates intercept at several points. A series of broad walks parallel nearly the full length of the garden and divide the plantings into large rectangular blocks. Shrubs and herbaceous species grown according to phylogenetic relationships are planted in beds between the tree-lined walks. Part of the garden is set aside for experimental purposes. Conservatories are located near the garden entrance on the Plaza de Murillo. The historic building of the herbarium and library commands a major focal point among the architectural features of the garden (fig. 41). The plant collections are relatively small.



Figure 41. --Botanical Garden, Madrid, Spain. Herbarium and library building with <u>Butia</u> palm on the left and a stunted date palm (<u>Phoenix dactylifera</u>) on the right. A young specimen of <u>Sequoiadendron giganteum</u> stands in the left foreground.

At an altitude of 2,000 feet, the climate of Madrid is not the most propitious for growing plants. Extremes of temperature are commonplace. Strong winds that sweep across the arid plains of New Castile bring biting cold in winter and torrid blasts in midsummer. In April spring arrives and long avenues of horsechestnut (Aesculus hippocastanum) burst forth into flower along the main thoroughfares of the city and in many parts of the botanical garden.

The collection of hardy plants in the Jardin Botanico consists largely of cool temperate species. But the collection is small and new introductions are not abundant. Several old specimens of Celtis australis, often called the lotus tree, are of special note (fig. 42). Trees of this south European, Asia Minor, and North African species in the botanical garden are over 100 feet

tall and 3 feet in diameter. Old specimens reputably live to be 1,000 years old and become 6 feet in diameter. The smooth white bark is especially distinctive in old trees. The lotus tree is recommended for wider distribution in areas of southern United States. Specimens of Zelkova carpinifolia from the Caucasus are nearly as large as the lotus tree. Z. carpinifolia is hardier than Celtis australis and deserves wider recognition as a substitute for diseased American elms. The fern-leaved linden (Tilia platyphyllos 'Laciniata') is included among the more uncommon trees. American trees in the Jardin Botanico include the persimmon (Diospyros virginiana); the osage orange (Maclura pomifera); and several young vigorous specimens of the giant sequoia (Sequoiadendron giganteum). A collection of Spanish grape cultivars is growing on several hundred feet of arbor near the museum and greenhouses. Of the palms, only Trachycarpus fortunei and Chamaerops humilis seem to flourish in the rigorous climate.



A few greenhouse plants are of specia! interest. Piper ornatum (P.I. 241607) is a climbing stovehouse pepper from the island of Celebes with lustrous green leaves mottled pink with pink veins. Vellozia elegans (P.I. 241606), of the Velloziaceae from South Africa, is a houseplant of some merit with white flowers that turn green with age and last for many weeks on lax 6-inch peduncles borne between the densely tufted lustrous green leaves. Achimenes lanata (P.I. 241602) with small light blue flowers and white-woolly leaves is somewhat less showy than the well-known  $\underline{A}$ . longiflora and A. grandiflora types.

Figure 42. -- Specimens of <u>Celtis</u> <u>australis</u> about 75 feet tall.

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#### NURSERY OF BOURGUIGNON

MADRID

(July 27)

The nursery of Bourguignon, located on the edge of Madrid, operates a completely modern establishment comparable with the best of the nurseries seen in the Mediterranean countries. A display sales room, for example, serves customers on a cash-and-carry basis, a method rarely seen in European nurseries. The quality of the merchandise offered is first class. The hardy nursery stock available includes ornamental trees, shrubs, herbaceous plants, and fruit trees, mostly kinds widely grown in southern Europe and in parts of the United States.

A rarely grown plant in the collection is <u>Roupala pohlii</u>, a Brazilian woody species of Proteaceae closely related to the silk oak (<u>Grevillea robusta</u>). The elegant pinnately divided lustrous foliage of <u>Roupala</u>, in the opinion of the writer, highly recommends this plant for wider cultivation as a pot plant. <u>Roupala</u> now is rarely grown in the United States.

## ROYAL GARDENS, JARDIN DE LA ISLA

ARANJUEZ

(Apr. 17)

Aranjuez is a small town, about 30 miles south of Madrid, bordering the Tagus River. The history of the place has been dominated by the Spanish Royal House since the 14th century. Lofty English elms (Ulmus campestris) and sycamores (Platanus acerifolia) are extensively planted within the environs of the town and create a veritable oasis in the otherwise arid and barren plain of New Castile.

The Jardin de la Isla covers several acres adjacent to the Royal Palace and the Tagus River that flows through the grounds of the Royal estate. Constructed during the reign of Philip II in the 16th century, the design of the garden imitates the Italian style in garden art of the late Renaissance period. Fountains and clipped boxwood hedges epitomize the basic features of the Royal Gardens.

A modern trend for tree planting has virtually turned the Jardin de la Isla into an arboretum (fig. 43). The collection of trees, though, can hardly be called extensive.



A long row of rather stunted Magnolia grandiflora borders one side of the garden. The crapemyrtle (Lagerstroemia indica) is much planted and specimens 15 feet high are common in various parts of the grounds. Several English yews (Taxus baccata) are over 30 feet wide and 15 feet tall. Specimens of Fraxinus excelsior 'Pendula' (P. I. 239079), the weeping European ash are 15 feet high with a branch spread of over 20 feet. In spite of the aridity, specimens of the California redwood (Sequoia sempervirens) are now upwards of 100 feet tall.

Figure 43. -- Royal Gardens, '' Jardin de la Isla,'' Aranjuez, Spain. (Courtesy of Viveros Castilla, S. A., Madrid.)

## VIVEROS CASTILLA, S. A. (NURSERY)

## ARANJUEZ

(July 30)

One of the largest of Spanish nurseries, the Viveros Castilla, S. A. operates four separate nurseries, two near Madrid and two at Aranjuez, 30 miles south of Madrid.

The nursery visited at Aranjuez covers about 50 acres planted largely to conifers, roses, broad-leaved and deciduous shrubs, and to a lesser extent herbaceous plants. The entire acreage is under irrigation. Many of the species conifers are grown from seed in open raised beds. The junipers in this region are superior to all conifers in cultivation as nursery stock. Large blocks of the Chinese juniper (Juniperus chinensis) and lesser amounts of the American redcedar (J. virginiana) are under cultivation. Both bush and standard roses, principally hybrid teas, are grown in large blocks for the wholesale market. An interesting summer flowering shrub in the nursery is Perovskia atriplicifolia, a member of the Labiatae from Afghanistan with silvery-gray

foliage and handsome bright-blue flowers. This plant is tolerant of a hot, dry climate and deserves to become better known, particularly in southern and western areas of the United States.

Shrubs grown in quantity include Berberis julianae; Viburnum rhytidophyllum; Spiraea × vanhouttei and species of Forsythia; Ligustrum, and Buddleia. The Van Houtt spiraea is one of the commonest dooryard shrubs grown in Mediterranean gardens.

## VIVEROS ANDRES (NURSERY)

SEVILLE

(Apr. 11-12)

The nursery firm of Señor Andres is the only sizeable establishment of its kind serving the Seville area, in a city of about 150,000 inhabitants. Production of nursery stock is limited mostly to trees and shrubs. Species of Forsythia; Ligustrum; Spiraea x vanhouttei; Prunus cerisifera 'Pisardii'; Populus alba 'Pyramidalis'; Ulmus pumila; and Robinia pseudoacacia are grown in large quantities for the local market. A major part of the business involves the sale of bitter orange stock (Citrus aurantium) for growing in the Seville area.

A vigorous, large-leaved form of <u>Hedera helix</u> (P.I. 239059), the ivy, is included in a small selection of perennials and pot plants offered by Señor Andres.

# PORTUGAL



Jardim Botanico, Coimbra.

## PORTUGAL

Portugal is abundantly supplied with gardens and horticultural institutions. A profound interest in horticulture and gardening is part of the Portuguese tradition.

Northern Section. --In spring, few areas of western Europe can compare with northern Portugal. The mild, relatively moist belt around Oporto receives a rainfall of approximately 35 to 40 inches per year. As a result, northern coastal Portugal remains perpetually green. In March and April native species of heather and numerous species of Leguminosae carpet the northern Portuguese hills in a kaleidoscopic riot of color. The arborescent heathers, Erica australis with light to dark pink flowers, and E. lusitanica with white flowers are shrubs 4 to 5 feet tall. The lower growing, E. umbellata, 12 to 14 inches tall, with deep purple flowers covers vast areas.

Shrubs of the Leguminosae, mainly species of Cytisus, Genista, and Ulex with yellow or white flowers contribute no less to the checkered display. Large areas of northern Portugal are planted to native cluster pine (Pinus pinaster), often maliciously delimbed and cut in many areas as a source of firewood. Eucalyptus globosus has assumed the role of a native plant in all northern coastal areas and inland valleys. Another Australian species, Acacia dealbata, is widely naturalized. Long rows of this tree line the roadways of northern Portugal. In March when this tree is swathed in yellow flowers, few sights are more appealing.

Oporto is the major center of horticultural activity in northern Portugal. This is the center of the nursery industry. The acidic soils of the northern districts are well suited for growing rhododendrons, azaleas, and camellias. Oporto rightly deserves to be known as the home of the camellia in Europe, since the oldest specimens in cultivation on the Continent are here. Flaming-red rhododendrons and azaleas are in flower in the parks during March. In the main plaza at Oporto, thousands of tulips are in full bloom at this season.

Coimbra. -- The oldest and largest botanic garden in Portugal is located here. Many plants in the extensive collections are of horticultural interest.

Lisbon area. --Climatically, Lisbon and the area to the west around Sintra are unlike other areas of southern Europe. Extremes of temperature and aridity are less severe than in comparable areas of the Mediterranean. In summer, cloudy and foggy days are not uncommon in Lisbon, and extreme heat is rare. Frost occurs infrequently. Palms flourish and subtropical plants are commonly grown in parks and gardens in this area. Growing conditions are comparable with parts of southern California.

Lisbon is particularly well stocked with botanical institutions and gardens of horticultural interest. Three botanical gardens and the Estufa Fria in Edward VII Park, and a number of small parks are points of major interest within the city. The oldest gardens are about 300 years old.

The Sierra da Sintra to the west of Lisbon receives perhaps the highest rainfall of any comparable area of southern Europe. In this mild, wet area, warm temperate and subtropical plants, especially acid-loving species grow luxuriantly. In gardens near Sintra many species are grown to a peak of perfection not attained elsewhere in Europe.

Nearly 200 introductions originated from gardens in Fortugal.

#### JARDIM BOTANICO

#### OPORTO

(Mar. 21)

The Jardim Botanico at Oporto, established about 20 years ago in collaboration with the Botanical Institute of the University, is the youngest such garden in Portugal. The garden covers about 30 acres, mostly on relatively flat terrain, on the site of an old private estate.

Beech trees (Fagus sylvatica), several nearly 100 feet tall, embellish the grounds around the white-stuccoed building of the Botanical Institute. Hedges of Camellia japonica, 20 feet high, surround more formal gardens of clipped boxwood and tulip beds (fig. 44). C. japonica 'Mathotiana' (P.I. 238499) is the most outstanding of the cultivars grown as a hedge. A 15-foot specimen of Camellia reticulata 'Capt. Rawes' is laden with several hundred flowers in March. This species grows to perfection in the well-drained sandy acidic soils of Oporto.

Introductions from the Jardim Botanico of special interest: Cytisus albus (P.I. 238503), the white-flowered Portuguese broom, native of the granitic hills of northeastern Portugal; Narcissus rupicola (P.I. 238507), a dwarf native Portuguese species; Romulea bulbocodium (P.I. 238508), a native species of southern Portugal, with grasslike leaves and blue flowers not unlike those of a large flowered Sisyrinchium.



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Figure 44. --Botanical garden, Oporto, Portugal. Formal garden surrounded by a 20-foot camellia hedge.

#### COMPANHIA HORTICOLA

## OPORTO

(Mar. 21, Aug. 16)

The Companhia Horticola in Oporto was founded in 1849 and now is the oldest nursery in Portugal. Located on the original site, the nursery overlooks the Rio Douro from a series of broad terraces where the nursery stock is grown (fig. 45). A general selection of high quality nursery stock is offered, including house plants and hardy herbaceous species, trees, shrubs, fruit trees, and vines. Camellias are a speciality of this nursery.

A monstrous specimen of Mahonia japonica is now 30 feet tall with a trunk diameter of 8 to 10 inches (fig. 46), and 100-foot ginkgos (Ginkgo biloba), date from plantings made nearly 100 years ago. Camellias are of special interest. Camellia sasanqua

'Jaune' (P.I. 241935), known also as 'Fortune's Yellow' is yellow only by virtue of the excessive number of exserted stamens, and C. sasanqua 'Baronesa de Soutelinho' (P.I. 241936) is a pink-flowered cultivar. C. japonica 'Portuense' (P.I. Nos. 238724 and 241931) with yellowish variegated leaves; 'Rainha Santa Isabel' (P.I. Nos. 238732 and 241934) with white flowers; and 'Saudade de Martins Branco' (P.I. Nos. 238725 and 241979) with sanguine flowers are cultivars of Portuguese origin.



Figure 45. -- Companhia Horticola (nursery) stands on a series of terraces overlooking the Rio Douro.



Figure 46. -- Twenty-five foot specimen of Mahonia japonica.



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Figure 47.--Marcotting of <u>Camellia japonica</u>, A small box of cork filled with moss is fitted around the girdled branch which takes root after about 9 months.

# NURSERY OF MOREIRA DA SILVA ET FIHLOS OPORTO

(Apr. 1, Aug. 16, 17)



Figure 48.--Begonia goegoensis (P.I. 238723 and 241976), with pink-veined leaves on a background of light green.

The nursery of Moreira da Silva et Fihlos in Oporto dates from the 1880's. This firm offers a wide selection of high quality nursery stock, especially camellias, evergreens, and greenhouse plants.

Camellia japonica 'Augusto Leal Gouveia Pinto' (P.I. Nos. 238726 and 241932); 'Dona Herzilia de Freitas Magalhaes' (P.I. Nos. 238729 and 241933); 'Dona Jane Andresen' (P.I. 241978); 'Dr. Baltazar de Melo' (P.I. 238731); and 'Duarte de Oliveira' (P.I. 238730) are cultivars of Portuguese origin grown in this nursery.

Begonia goegoensis (P.I. Nos. 238723 and 241976), an elegant rhizomatous species from Sumatra with pink-veined leaves on a light green background is grown in some quantity by Mr. da Silva (fig. 48).

# VILLA NOVA DE GAYA

#### OPORTO

(Mar. 20)

The old camellia trees at the Villa Nova de Gaya in Oporto, evidence indicates, are the oldest specimens of <u>Camellia japonica</u> in cultivation yet recorded in Europe. Old family archives of the Conde de Campo Bello, present owner of the villa indicate that 3 living plants of <u>C. japonica</u> from Japan were planted in the garden about the middle of the 16th century. This is not impossible, since early Portuguese traders in the Orient first made contact with Japan in 1542. The discovery of these aged specimens extends the date of introduction of the camellia back nearly 200 years, to about 1550. Modern reference works date the introduction of <u>C. japonica</u> into Europe about 1740 (fig. 49).

The oldest trees in question are now about 18 to 24 inches in diameter at the base and nearly 30 feet tall at a reputed 400 years of age. The flowers are single rose-pink. Self-sown seedlings have become large bushes in the vicinity of the mother plants.



Figure 49.--Camellia japonica trees allegedly planted early in the 16th century at Villa Nova de Gaya, Oporto. (Courtesy of Teofilo Rego.)

# QUINTA DA MEIO

#### OPORTO

(Mar. 19-Apr. 1, Aug. 14-17)

The Quinta da Meio, garden of Miss M. R. Tait in Oporto, overlooks the Atlantic Ocean on a series of broad terraces above the estuary of the Rio Douro. The Englishstyle garden on the old family property was first planted nearly 100 years ago by the grandfather soon after his arrival from Scotland as a permanent resident in Portugal. Three generations of the family have since nurtured the garden on its present site.

"Bulbous plants" are a special feature of the garden, especially the native Portuguese narcissi. Narcissus cyclamineus naturalizes in great profusion in the acidic well-drained sandy soil. Sparaxis is abundant in the woodland. A perennial spring that flows through the garden is a natural asset of value in the cultivation of ferns and bog plants. Camellia bushes over 80 years old are 20 feet tall. Camellia japonica 'Princeza Real' (P.I. Nos. 238727 and 241977), a pink-flowered formal type, and 'Camurca' (P.I. Nos. 238733 and 241929) with white to blush-pink flowers are cultivars of Portuguese origin. C. reticulata 'Capt. Rawes' grows particularly well in this garden. A 15-foot specimen is covered with hundreds of flowers in March.



Figure 50.--Quinta da Meio, Oporto. Allegedly the largest tulip tree (<u>Liriodendron tulipifera</u>) in Europe. (Courtesy of Teofilo Rego.)

A large specimen of Liriodendron tulipifera, now over 100 feet tall, 22 feet in circumference, and 7 feet in diameter at the Quinta da Meio is alleged to be the largest tulip tree in Europe (fig. 50). This tree is now a "Monumento Nacional" as designated by the Portuguese forestry department. Tree ferns (Dicksonia antarctica) also flourish in the well-watered Taitgarden.

North American trees include Magnolia grandiflora 50 feet tall, and Sassafras albidum 30 feet tall. Several old 15-foot hybrid rhododendrons with deep red flowers, and a double-flowered pink Japanese cherry originally imported from Japan, flower in March. Eucalyptus ficifolia, the red-flowered species is 30 feet tall. Thirty-foot specimens of Ligustrum japonicum are larger than plants of this species usually seen in cultivation. Several large Judas-trees (Cercis siliquastrum) in the garden flower at the end of March. A large Wisteria sinensis nearly covers one side of the villa.

# JARDIM BOTANICO

#### COIMBRA

(Apr. 2-6, Aug. 13)

The botanical garden at Coimbra occupies an imposing site adjoining the University on a hilltop overlooking the valley of the Rio Mondego (fig. 51). Founded in 1772, this is the oldest and largest botanical institution in Portugal. The current plan of the garden dates from the days of Julio Henriques, eminent Portuguese botanist and director of the garden from 1873 to 1918. The garden covers about 50 acres.



Figure 51.--Botanical garden, Coimbra, Portugal. The taller palms in foreground are Arecastrum romanzoffianum, the shorter ones beyond are Butia capitata, near the aqueduct are young Washingtonia filifera.

The undulating topography offers a series of varied habitats for the plant collections. Relatively steep slopes drop sharply away from the broad upper terraces into a series of low ridges and valleys below. The collections are planted according to natural botanical relationships. The herbaceous species and many shrubs are grown in beds neatly edged with boxwood on the upper terraces. A collection of palms and conifers is grown in the same area. The bamboo garden covers nearly an acre of ground at the bottom of the valley below the botanical institute. Culms of Phyllostachys viridis are approximately 40 feet tall. Nearby, a succulent collection covers part of the open slopes. A more extensive collection of conifers is planted in the arboretum.

The formal sunken garden in Italo-Portuguese design is one of the conspicuous architectural features of the Jardim Botanico. This garden covers about 2 acres adjacent to the conservatories. Specimens of Kwanzan cherry (Prunus serrulata 'Kwanzan'), the rose 'Belle of Portugal' (P.I. 241911), and 10-foot Japanese cycads, Cycas re-

voluta, are conspicuous among the woody plants in the sunken garden. Boxwood hedges border the pathways. Two ornamental iron grill gates give entrance to the garden. A fountain stands in the center. Panels of tiling in the Portuguese taste are conspicuous on the walls that surround the sunken garden on three sides.

The collection of subtropical plants, as one of the most comprehensive in Portugal, includes a good representation of palms, eucalyptus, acacias, figs, and warm-temperate conifers. The greenhouse collection of tropical species is quite extensive.

A specimen of Ficus magnolioides (P.I. 238950) about 60 feet tall, with a branch spread of equal dimensions is the largest although not the tallest tree in the garden (fig. 52). A specimen of Eucalyptus maculata var. citriodora with stark-white trunk towers nearly 100 feet tall. Of the palms, Washingtonia filifera, Arecastrum romanzoffianum, Jubaea spectabilis, and Erythaea armata are 30 to 50 feet tall. Specimens of Araucaria bidwillii and A. excelsa are 100 feet high.



Figure 52.--Botanical garden, Coimbra, Portugal. Portion of the formal garden and conservatories. The large evergreen tree in center is Ficus magnolioides (P.I. 238950).

Hebanthe paniculata (P.I. Nos. 238874 and 241902), a vigorous climber of the Amaranthaceae from Mexico grows rampantly over a pergola. Apollonias canariensis (P.I. 238868), an evergreen 30-foot tree of the Lauraceae from the Canary Islands is recommended for avenue planting in a mild climate. Gnidia polystachya (P.I. Nos. 238771 and 241901) is a 6-foot heathlike South African shrub with fragrant yellowish flowers. The latter species is a pretty shrub for a small garden in nearly frostless regions.

Anthurium digitatum (P.I. 238867), a Colombian species, and Streptocarpus caulescens (P.I. 239318), from tropical East Africa, with small purple flowers one-half to one inch across, are two plants of special interest in the conservatory. The latter very floriferous species grows easily in pots, and high temperatures of a green-house are not to its disliking.

## FOREST OF BUSSACO

# SERRA DE BUSSACO

(Apr. 3)

As a "Monumento Nacional," the forest of Bussaco is the oldest and most widely known forest preserve of Portugal. Planted by Carmelite monks who founded a monastery on the site in A.D. 1268, the tract covers several thousand acres on the Serra de Bussaco, about 40 miles northeast of Coimbra.

The principal introduced trees are the Portuguese cypress (Cupressus lusitanica), plane trees (Platanus acerifolia and P. orientalis), and Montezuma pine (Pinus montezumae). The native Portuguese trees mostly are cluster pine (Pinus pinaster), holly oak (Quercus ilex), cork oak (Q. suber), Portuguese oak (Q. lusitanica), and lindens (Tilia spp.).

One-hundred foot specimens of the Portuguese cypress are among the noblest trees at Bussaco. In many parts of Portugal, this tree assumes the role of a native species. C. lusitanica is a native of the mountains near Mexico City and was introduced to Portugal in the 16th century. It was thought to be a native of Portugal by Philip Miller

who first assigned the epithet "lusitanica" to this plant in the 8th edition of his "Gardener's Dictionary," published in 1758.

Indeed, <u>C. lusitanica</u> not only is very beautiful but also a useful tree. Many cultivated forms exist. Columnar, spreading, weeping, and variegated-leaved types are known. The Portuguese cypress is widely planted, especially in northern Portugal and upland areas of the country. It is seen commonly as a roadside tree, in parks, plantations, and gardens.

The remains of the ancient Carmelite monastery at Bussaco are now incorporated into a Manuellian style hotel. A series of formal and informal gardens adjacent to the hotel grounds includes a small collection of camellias. An unnamed cultivar of Camellia japonica (P.I. 238870) is a good white-flowered formal type. Scions of Sophora japonica 'Pendula' (P.I. 238884) were collected from a 30-foot specimen growing at the edge of the camellia garden. In the forest nearby, a valley is planted to Dicksonia antarctica and Cyathea arborea tree ferns, hortensias (Hydrangea macrophylla 'Hortensia'), and azaleas.

## ROYAL PARK OF AJUDA

LISBON

(Aug. 10)

Lisbon's Royal Park of Ajuda and the surrounding gardens were established under Royal patronage by D. João (1644-46). The most interesting horticultural features center around a well kept formal garden in Italo-Portuguese design and the collection of old trees (fig. 53). Some of the specimens were planted nearly 300 years ago.



Figure 53.--Royal Park of Ajuda, Lisbon, Portugal. Pelargoniums are planted between clipped boxwood hedges;
Washingtonia filifera palms in the center. The Tagus estuary appears beyond.

The formal gardens overlook the estuary of the Tagus River on a series of broad terraces. Pelargoniums and cannas planted between long double and triple rows of clipped hedges of boxwood reflect the Portuguese taste for flowering plants.

A large dragons blood tree (<u>Dracaena draco</u>), 15 to 20 feet tall with a branch spread of over 40 feet, rivals in size some of the oldest recorded specimens of this species in the Canary Islands where it is a native plant (fig. 54). Other trees of special interest are: <u>Sophora japonica</u> 'Pendula', 25 feet tall (fig. 55); <u>Fagus sylvatica</u> 'Tortuosa', 40 feet tall; <u>Acacia armata</u>, 30 feet tall; and <u>Schotia latifolia</u> from South Africa with a branch spread of nearly 50 feet at the base. In the formal garden specimens of the Mexican <u>Nolina longifolia</u> are 10 feet tall. Specimens of Grevillea robusta are nearly 70 feet tall.

A fern, Microlepia strigosa 'Cristata' (P.I. 241924) in the greenhouse of the Royal Park is of much decorative merit. The tips of the lax foot-long fronds are crested.



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Figure 54. -- Dragons blood tree (Dracaena draco), nearly 40 feet across was planted in the 17th century.



Figure 55. -- Sophora japonica 'Pendula' (P.I. 238884), weeping form of the Japan pagoda tree.

# BOTANICAL PARK OF AJUDA

LISBON

(Aug. 9)

The Botanical Park of Ajuda, Lisbon, covers more than 100 acres on the grounds of the Institute of Agronomy (Instituto Superior de Agronomia). The activities of the garden concern plant introduction and acclimatization studies on ornamentals and economic crop plants of special interest to Portuguese agriculture and horticulture. The botanical garden has developed largely over the past 30 to 40 years on a site formerly a part of the nearby Royal Park of Ajuda described previously.

The exotic plants include subtropical trees, shrubs, and herbaceous species hardy in the Mediterranean climate of Lisbon. The old trees in the woodland, chiefly Fortuguese cypress (Cupressus lusitanica) (fig. 56) and the holly oak (Quercus ilex) were planted about 200 years ago.

Olea europaea 'Sylvatica' (P.I. 241920), represented by a 40-foot specimen in the Botanical Park manifestly makes a superior tree for ornamental purposes to the common commercial olive. The cultivar 'Sylvestris' differs from the common olive in the straighter bole, more densely branched round crown and larger size of the tree.



BN-8972
Figure 56.--Weeping form of the Portuguese cypress (Cupressus lusitanica 'Pendula') nearly 50 feet across,

supported on a metal frame in a small public park of Lisbon.

The economic collections consist of forage and oil crop species and an extensive collection of fruits--fig, pear, plum, peach, cherry, and grape cultivars grown in

Portugal.

## JARDIM COLONIALE DO ULTRAMAR

#### LISBON

(Apr. 9, Aug. 8)

As a public botanical garden and research institution combined, the Jardim Coloniale do Ultramar functions in the interest of agricultural problems related to the Portuguese overseas colonies. Located in Belem, a western suburb of Lisbon, the Colonial Garden covers about 50 acres overlooking the estuary of the Tagus River. The purely research aspects encompass a wide range of studies on crop plants related to tropical agriculture--rice, sugarcane, sesame, coffee, and cotton.

The principal features of the garden include a long avenue of 60-foot California fan palms (Washingtonia filifera) that extend from the entrance to the center of the garden; an aquatic garden near the entrance; a conservatory for tropical plants, and an arboretum. A section dedicated to the Portuguese colony of Macao is devoted chiefly to bamboos (fig. 57). The most interesting ornamental plants are tropical and subtropical species, especially those from the Portuguese African territories.

Trees of special interest: <u>Podocarpus mannii</u> (P.I. Nos. 238956 and 241869), a conifer from the tropical island of São Thomé; <u>Dombeya burgessiae</u> (P.I. 238948) from Mozambique with pink flowers; Erythrina corallodendron. (P.I. 238949) with scarlet



Figure 57.--Jardim Coloniale do Utramar (colonial garden), Lisbon, Portugal.

flowers. A 25-foot specimen of Oreopanax capitatus (P.I. 238955) is the only example of this ornamental species seen in Portugal. The latter species is widely grown on the French and Italian Riviera.

Collections of ornamental merit in the conservatory include <u>Treculia africana</u>, the African breadfruit tree; <u>Saraca indica</u>, the "Sorrowless Tree" of India--the tree under which Buddha is said to have been born; <u>Goethea strictiflora</u> (P.I. 241857), an attractive large shrub related to <u>Pavonia</u> of the Malvaceae with cauliflorous red flowers; <u>Rheedia macrophylla</u>, an evergreen tree native of Brazil; <u>Memacylon mannii</u>, a shrubby species of Melastomataceae from west tropical Africa.

## ESTUFA FRIA

LISBON

(Apr. 9)

The Estufa Fria, in Lisbon's Edward VII Park, is known among the more unusual horticultural attractions of southern Europe. This lath house "conservatory" is without artificial heat and covers nearly 2 acres. Many tender tropical plants that otherwise would not thrive without protection are grown in the Estufa Fria.

A rock embankment on one side provides a natural habitat for growing subtropical vines, ferns, begonias, saintpaulias, aroids, and other species that prefer the environment of a humid tropical forest. Clambering lianas are planted on concrete pillars made to simulate tree trunks that support the superstructure of the Estufa Fria.

Tree ferns, mainly <u>Dicksonia antarctica</u> and <u>Cyathea arborea</u>, and the palms <u>Livistona</u>, Howea, and Chamaedorea contribute to the jungle habitat of the cold greenhouse.

Begonias are much planted in the Estufa Fria, especially the rex types. Begonia maxima (P.I. 238947) with pink flowers, is a rarely cultivated woody species 4 feet tall. Fuschias are grown in baskets throughout the lath house. Crinum giganteum of the bulbous plants that tolerate shade is abundantly planted. Chrysophyllum imperiale is an elegant Brazilian tree with leaves lustrous green on the upper surface and silvery beneath. The aroid, Epipremum giganteum, a giant species from Malaya contributes much to the tropical flavor of the Estufa Fria.

#### JARDIM BOTANICO

## LISBON

(Apr. 8, Aug. 10)

The botanical garden of the University of Lisbon is the second oldest in Portugal. It was founded in 1839. The garden covers approximately 12 acres, about equally divided between the broad upper terrace for the conservatory, the succulent garden, the systematic beds, and the lower hilly slopes for the arboretum (fig. 58).



Figure 58.--Botanical garden of the University of Lisbon, Portugal.

Vasconcellos and Franco<sup>4</sup>, in their paper on the palms of Lisbon and vicinity, recorded 24 genera and nearly 40 species of palms growing in this area. The collection of palms in the Jardim Botanico ranks among the most comprehensive in Portugal. A fine double row of California fan palms (Washingtonia filifera borders the long avenue leading into the garden from the west entrance. Erythaea armata, 30 feet tall, frames the entrance to the conservatory. The white, 15-foot long inflorescences of the latter species are particularly attractive when produced in midsummer. Eleutheropetalum sartorii var. confertum, Archontophoenix alexandrae var. beatricae, and Phoenix canariensis var. porphyrococca are represented among the rarer palms in the collection.

Species of interest as ornamentals are: Ruellia ciliatiflora (P. I. 242043) a 2-foot herbaceous perennial from Argentina with purple flowers nearly 2 inches across and Cestrum fasciculatum (P. I. 241915), a good color form of this attractive Mexican species with deep rose-colored flowers. The seaside shrub, Limoniastum monopetale (P. I. 241919) is recommended for planting along the sea in California. In midsummer, this native Portuguese relative of the common thrift (Armeria) is laden with rose-violet flowers on the branch tips.

Strobilanthes kunthianum is an evergreen shrub from the Nilgiri hills of south India; and Lycium afrum (P.I. 242038) is a spinescent shrub from South Africa with yellow fruit an inch across. Hedychium gardnerianum, an Indian species with yellow

<sup>&</sup>lt;sup>4</sup> Vasconcellos, C. and Franco, A., As Palmeiras de Lisboa e Arredores. In Portugaliae Acta Biologica. 2: 289-425. 1948.

flowers, is one of the most beautiful of the cultivated species of the genus. The latter species has naturalized in moist locations in the Jardim Botanico. Semele androgyna, the climbing butchersbroom grows luxuriantly on the trunks along the avenue of Canary Island date palms (Phoenix canariensis). The Brazilian soap-bark tree, Quillaja brasiliensis (P.I. 242042), in fruit during August, is the rarer of the two cultivated species of the genus. A specimen of the floss-silk tree (Chorisia speciosa) from Brazil, now nearly 100 feet tall, with a crown spread of over 50 feet, may be the largest of its kind in Europe. Quisqualis indica, with flowers that open white in the morning and change to red as the day advances is one of the most beautiful of the tropical climbers grown in the Jardim Botanico.

A collection of cycads includes <u>Dioon spinulosum</u>, <u>D. edule</u>, <u>Cycas revoluta</u>, <u>C. circinalis</u>, <u>Zamia floridana</u>, a staminate plant of <u>Stangeria paradoxa</u>, and species of <u>Encephalartos</u>.

## SERRA DA SINTRA

## SINTRA

About 40 miles west of Lisbon, a low range of hills, the Serra da Sintra parallel the Atlantic coast for about 10 miles from Sintra to Cape Roca. The highest elevation is 1,736 feet. The terrain is relatively rugged and the slopes are densely forested. Within this limited area, the moisture-laden winds bring an evenly distributed and more copious precipitation than for any comparable region of coastal Portugal. The windward slopes of the serra are frequently swathed in mist and fog. Frost is rare.

Two gardens, the Parque de Monserrate and the Parque de Penha, located near Sintra are unique among the gardens of Portugal. The equable climate and the sandy acid soil is favorable in this area for growing conifers, ericads, camellias, and a host of warm-temperate and subtropical plants to a peak of perfection not usually found in the gardens of southern Europe. Tree ferns, for example grow to a height of 50 feet.

# PARQUE DE MONSERRATE

## SINTRA

(Aug. 11)

The Parque de Monserrate covers about 75 acres on a series of wooded ridges and valleys typical of the sharply undulating windward slopes of the Serra da Sintra. Monserrate was developed through the efforts of one Mr. Cook a long-time British resident of Portugal. The garden is now about 100 years old. Foggy summers, an evenly distributed rainfall throughout the year, and rare frosts favor the cultivation of warm-temperate and subtropical species. Conifers, tree ferns, and palms are of particular interest.

The most interesting conifers are species from the Southern Hemisphere. Specimens of the New Zealand Kauri pine (Agathis australis) are now more than 4 feet in diameter and nearly 100 feet high. Larger specimens probably do not exist in Europe. Beautifully developed specimens of Araucaria bidwillii, the bunya-bunya tree of Australia, are nearly 100 feet tall. Seventy-five foot specimens of Magnolia grandiflora are the largest of the many plantings seen of this species in Mediterranean gardens. Photinia serrulata at Monserrate is 75 feet tall with a trunk diameter of 1 foot. In the United States many growers know this Chinese evergreen species as a bush 6 to 8 feet tall.

A forest of tree ferns is one of the most impressive of the plantings at Monserrate. Cyatheas (Cyathea spp.) 50 to 75 feet tall, and Dicksonia antarctica 10 to 12 feet tall, flourish with the vigor of specimens in their native Australian habitat. Grevillea robusta, the Australian silk oak tree is 100 feet tall. Trichilia spp. (P.I. 241927) of the Meliaceae is an attractive 30-foot evergreen tree with pinnately divided leaves and orange-colored fruit. Roupala pohlii, an ornamental species of the Proteaceae from Brazil, is represented by small specimens 20 feet tall. Rhododendrons have naturalized in various parts of the garden.

Of the herbaceous plants, <u>Hedychium gardnerianum</u>, an elegant yellow-flowered species from India has naturalized along the small watercourse that flows through the valley below the Manuellian-style mansion house. <u>Gunnera</u> spp. with gigantic leaves 3 feet across is a companion plant of the hedychium.

About 25 species of palms are growing at Monserrate. <u>Diplothemium arenarium</u> and <u>Trithrinax acanthocoma</u> are the rarest palms in the collection. Large specimens of <u>Livistona australis</u> are nearly 60 feet tall. <u>L. chinensis</u> is 30 feet tall. <u>Howea forsteriana</u> and <u>H. belmoreana</u> are nearly 50 feet tall. Several specimens of <u>Archonto-phoenix cunninghamiana</u> are approaching 50 feet tall.

The public is admitted to the Parque de Monserrate upon payment of a small entrance fee.

# PARQUE DE PENHA

SINTRA

(Aug. 11)

Under Royal patronage, planting of forest trees at the Parque de Penha began about 100 years ago. In the moist, nearly frostless climate of the Serra da Sintra, few arboreta are more favorably located for growing trees from moist, warm-temperate climates. On several hundred acres of the Royal property species of potential value to Portuguese forestry are grown. Species from Australia, New Zealand, Chile, Japan, Tasmania, New Caledonia, and North America predominate among the plantings.

Conifers are widely represented in the collection. Of special interest are species from the Southern Hemisphere. Specimens of Callitris cupressiformis (P. I. 242031) from southeastern Australia and C. tasmanica from Tasmania, are 50 feet tall.

Dacrydium franklinii, about 50 feet tall with beautiful pendulous branches and dark green rattaillike branchlets is a Tasmanian species. Araucaria heterophylla and A. montana from New Caledonia are rarely grown species of monkeypuzzle in the collection. Specimens of Agathis australis, the Kauri pine of New Zealand, are now about 2 feet in diameter.

Two conifers of the Northern Hemisphere Abies × vasconcellosiana, a hybrid of A. pindrow × A. pinsapo, and Podocarpus neriifolia 'Variegatus' (P.I. 241923) a variegated-leaved form originated at the Parque de Penha.

Australian species of Acacia, especially A. dealbata and A. stricta are naturalized in many parts of the Parque de Penha. Banksia integrifolia (P. I. 241914), an Australian species of Proteaceae is self-sown from mature 50-foot trees in various parts of the plantations. Pittosporum has naturalized in some areas, especially P. huttonianum (P. I. 241922) and P. undulatum. A valley devoted to Dicksonia and Cyathea tree ferns could well represent a scene from parts of Australia or New Zealand. A 50-foot specimen of Clethra arborea, native of Madeira, flowers in August and is one of the most striking of flowering trees in the collection. C. brasiliensis, a Brazilian clethra with thick leathery leaves 4 to 5 inches long was not yet in flower.

The collections are managed by the Portuguese forestry department under the direction of Prof. João do Amaral Franco of the Institute of Agronomy in Lisbon. The park is not regularly open to visitors.

# ENGLAND AND SCOTLAND



Exbury Garden, Hampshire, England. (Courtesy of J. E. Downward.)

# ENGLAND AND SCOTLAND

(Aug. 26 to Nov. 13)

As a source of ornamental plants, British gardens are unrivaled among the gardens of Europe. British plant explorers, perhaps more than any other, have pioneered in the field of plant introduction intensively for 2 centuries. Horticulture and gardening have become a part of a great British tradition. British plantsmen long have maintained a position of preeminence among the World's plant breeders.

From British gardens we obtained hollies and broad-leaved evergreen plants. The itinerary in Scotland included a 3-week stint at the Botanic Garden, Edinburgh, and a short visit to the Botanic Garden, Glasgow. In England, collecting was concentrated at a few of the most outstanding private gardens, nurseries, and botanical gardens. Mr. L. Maurice Mason maintains a noteworthy private collection of tropical plants in Norfolk. The botanic garden at Cambridge was visited briefly. Kew Gardens, the garden of the Royal Horticultural Society at Wisley, and several nurseries were included on the itinerary in the London area. A short trip to Cornwall was, in some ways, the most important part of the trip in England. At Caerhays Castle and at Trewithen the collections of Chinese plants are extensive and include rare species not in cultivation elsewhere.

Altogether more than 1,000 introductions originated from the British gardens visited.

# BRITISH HORTICULTURAL EXHIBITIONS

# Royal Horticultural Society, London

(Aug. 27, Oct. 8, Nov. 5)

The Royal Horticultural Society sponsors horticultural exhibitions each fortnight from February to December in Horticultural Hall, Vincent Square, London. Ornamental plants, fruits, and vegetables are exhibited by commercial and private growers from all parts of the British Isles. International exhibits often arrive from the Continent or from distant countries of the Commonwealth, such as Australia or South Africa.

New introductions are specially featured at each R.H.S. show. The First Class Certificate and the Award of Merit are the highest awards given for excellence of individual plants. Superior forms of well-known species, exhibited for the first time, and new hybrids of merit are categories of plants eligible for these highest awards. The Banksian Medal is awarded to commercial or private exhibitors for excellence in staging groups of plants.

Visits to 3 of the autumn shows of the R.H.S. afforded an excellent opportunity to view a wide scope of ornamental plants from many of the best sources in Great Britain. A collection of 14 new Michaelmas daisies (Aster nova-anglae and A. belgii) (P.I. Nos. 243938 to 243952) is included among several miscellaneous orders placed with commercial exhibitors.

The long series of R.H.S. shows are unique among horticultural exhibitions in Europe and in the United States. These exhibitions since the R.H.S. was founded over 150 years ago have been a determining influence in raising the level of horticultural standards among British plantsmen.

# Autumn Flower Show, Southport, Lancashire

(Aug. 30)

The flower show at Southport, Lancashire, in cooperation with the Royal Horticultural Society, London, is the largest autumn horticultural exhibit in Great Britain. A large marquee covers about 2 acres for the main exhibition. The plants include chrysanthemums, dahlias, roses, fine foliage and greenhouse plants, fruits, orchids, sweetpeas, begonias, cacti, alpines, carnations, gladioli, and vegetables. An outdoor display of rock gardens completes the competitive exhibits.

Small orders were placed with the following nurserymen:

Conifers. -- T. R. Hayes, Ambleside, Westmorland (P.I. Nos. 242090 to 242099); Geoffrey Hayes, Grasmere, Westmorland (P.I. Nos. 247769 to 247787); Cross Green Nurseries, Liverpool (P.I. Nos. 244022 to 244027); Reginald Kaye, Lancaster (P.I. Nos. 244640 to 244659); Bozenham Gardens, Northampton (P.I. 245333 to 245344).

Aquatics. -- Perry's Water Gardens, Enfield (P.I. Nos. 243879 to 243882).

Other. -- Fragaria 'Sonjana' (P. I. 242397), Baker's Nurseries, Wolverhampton.

# ROYAL BOTANIC GARDEN

#### **EDINBURGH**

(Sept. 3 - 23)

The Royal Botanic Garden, Edinburgh, Scotland, founded in 1670, is the second oldest botanic garden in Great Britain. The modern garden at Inverleith covers approximately 65 acres on undulating terrain with an imposing panorama of the Edin-

burgh skyline from the City Viewpoint at Inverleith House. (Fig. 59.)

Figure 59. -- Edinburgh Botanic Garden, Scotland. The palm house.

The garden is widely known for the collections of Chinese plants. Beginning about 1900, introductions from south central and southwestern China continued to pour into the botanic garden for the next quarter century. The introductions of the late George Forrest, and E. H. "Chinese" Wilson form the basis of the Chinese collections. Those of Reginald Farrer, Frank Kingdon-Ward, J. F. Rock, and H. H. Yu also are well represented. Recent introductions are from the extensive Tibetan collections of Frank Ludlow and George Sherriff. The garden is particularly rich in Chinese species of Rhododendron, Primula, Acer, and species of the Ericaceae. As a source of new germ plasm, the Chinese collections at Edinburgh are

of inestimable value to ornamental horticulture.

Hardy plants. -- The alpine or rock garden of nearly 4 acres ranks as a special feature at Edinburgh. Great skill was employed in constructing this garden to simulate the environmental requirements of a typical alpine habitat. The collection of alpine plants includes a large representation of Southern Hemisphere as well as Northern Hemisphere species. Azorella, Raoulia, and Celmisia from the New Zealand Alps flourish alongside Androsace, dwarf gentians, incrusted saxifrages, primulas, and dwarf alpine willows from the artic regions of the Northern Hemisphere.

Dwarf plants, other than alpines, are grown on the rock garden. A dogwood, Cornus hessei (P. I. 242429) is only 2 feet tall after a growth of 30 years. <u>Ilex crenata 'Nummularia'</u> (P. I. 242431), with small, thick, nearly oval leaves one-half inch long is a very slow-growing dwarf form of the Japanese holly. The heath collection adjacent to the rock garden includes <u>Erica lusitanica</u> and <u>E. australis</u>, two arborescent species from the Mediterranean, and numerous cultivars of the northern European heathers—E. cinerea, E. carnea, and Calluna vulgaris.



Figure 60.--Chusquea culeou (P.I. 242395), a solid-stemmed bamboo from Chile.

Many rarely cultivated species are in the Edinburgh collection. Chusquea culeou (P.I. 242395), for example, is one of the rarest of hardy bamboos from southern Chile and adjacent Argentina (fig. 60). Indeed, this clump, nonrunning species deserves more attention as an ornamental and potential economic plant. The solid 1-inch culms are of greater relative strength than hollow-stemmed bamboos. C. culeou is not yet established in the United States.

Other introductions little known in the United States are Richea scoparia (P.I. 242302), a low heathlike evergreen shrub with spine-tipped leaves from Tasmania, closely related to the true heathers; Clethra delavayi (P.I. 242272) from China; Carrierea calycina (P.I. 242270), a small deciduous tree

from central China; Ribes <u>laurifolium</u> (P.I. 242301), an evergreen currantbush from China; and <u>Piptanthus forrestii</u> (P.I. 242297), a beautiful shrub of the Leguminosae from China.

The collection of maples (Acer) includes about 160 species and cultivars, some not yet in cultivation in the United States--Chinese species, in particular. Unfortunately, many of the Asian maples fruit irregularly in Scotland, and September is not the most propitious season for obtaining vegetative material of Acer.

The collection of <u>Potentilla fruticosa</u> includes numerous forms from China of this shrubby circumboreal cinquefoil. <u>P. fruticosa var. forrestii</u> (P.I. 242217) with dark yellow flowers, 1 to 1-1/4 inches across is one of the most ornamental of the 25 introductions of this species from Edinburgh.

The magnificently grown specimen hollies 15 to 20 feet tall on the Holly Lawn are among the finest of the hardy woody plants in the botanic garden. The English holly (Ilex aquifolium) and the hybrid I. × altaclarensis (I. aquifolium × I. perado) are represented by a large selection of named cultivars that evolved during the Victorian era. Holly growing was in fashion especially in the last half of the 19th century in Great Britain when several hundred named hollies were available from British nurserymen.

In the early years of the present century, Victorian hollies became less fashionable. Now the nurseries in Britain are again becoming interested in the named types. The collections of named hollies at Edinburgh and at Kew are perhaps the most comprehensive of the Victorian cultivars extant. Together these collections represent only a fraction of the cultivars once grown in Great Britain.

The towering hedges of English holly, sometimes 25 to 30 feet tall, are a unique feature of the garden. In the harsh, windy climate of Edinburgh, the holly hedges are of special value as windbreaks. Many tender rhododendrons and other plants would be difficult or impossible to grow without such protection.

Introductions of holly from the Edinburgh collection include 32 named cultivars of I. aquifolium and 13 of the hybrid  $\underline{I}$ .  $\times$  altaclarensis.

Greenhouse plants. -- The collection of insectivorous plants at Edinburgh includes the rarely grown Cephalotus follicularis from Australia and Heliamphora nutans from British Guiana. Sarracenia, Drosera, Dionaea, and Darlingtonia also are grown.

Long glass-enclosed corridors are devoted to warm-temperate plants. The passion flower, Passiflora antioquiensis (P.I. 242345) from Colombia, with tubular crimson flowers 3 to 4 inches long, is one of the most beautiful of the genus. A 15-foot Begonia luxurians (P.I. 242317), a native of Chile, is the outstanding specimen begonia in the botanic garden collection. Several warm-temperate Ericaceae in the corridors include Agapetes buxifolia (P.I. 243953) from Bhutan; Macleanea punctata (P.I. 243892) from Ecuador; Pentapterygium serpens (P.I. 242362), from the Himalayas, with lanternlike red and green flowers, and the hybrid P. rugosum × P. serpens 'Ludgvan' (P.I. 242359); and Cavendishia acuminata (P.I. 239676) from the Andes of Colombia and Ecuador.

Rhododendrons too tender for cultivation out-of-doors are grown in a special greenhouse. Species of the Maddenii series include Rhododendron crassum (P.I. Nos. 242411, 242447, 242448 and 242449), an elegant, white-flowered fragrant Chinese species; R. carneum (P.I. 242442) with dark pink flowers from Upper Burma; R. supranubium (P.I. 242480), a Chinese species; and R. lindleyi (P.I. 242469), a Himalayan species with large fragrant white flowers. R. giganteum, in the same house is alleged to grow 80 feet tall in China. R. facetum (P.I. Nos. 242456, 242457, 242458, 242459 and 242460), a superb Chinese species with salmon-pink flowers, blooms in late summer. R. diaprepes (P.I. 242453), a tender species with large trusses of pure white flowers has contributed as a parent to some of the finest of Chinese hybrid rhododendrons, such as 'Polar Bear' (R. auriculatum × R. diaprepes). The rarely cultivated Sargentodoxa cuneata (P.I. 242413), an evergreen climber from West China scrambles on the rafters in the rhododendron house.

#### **BOTANIC GARDENS**

GLASGOW

(Sept. 16)

The Botanic Gardens, Glasgow, Scotland, date from 1817. The early years are associated with the tenure of Sir William Hooker, who departed in 1840 to become the first director of the Royal Botanic Gardens, Kew. The modern gardens cover about 40 acres and function under the City Corporation of Glasgow.

The collection of filmy ferns and the forest of <u>Dicksonia</u> and <u>Cyathea</u> tree ferns in the round conservatory are horticultural features of special note. These plants respond admirably to the relatively low summer temperatures and the year-round high

humidity in Glasgow. The filmy ferns include Leptopteris superba, Todea hymenophylloides, and Hymenophyllum demissum from New Zealand, and Trichomanes radicans, a native British species. Leptopteris and Todea naturalize in the greenhouse. The ferns received long and scholarly attention over many years from the late Prof. F. O. Bower, eminent fern specialist long associated with the garden. In number of species, however, the fern collections are relatively small.

Of special interest among the tropical collections are two plants of the Melastomataceae, Phyllagathis rotundifolia (P. I. 242364), from Sumatra, and Tococa latifolia (P. I. 242375), one of the so-called ant plants from Colombia. Both are elegant stove-house species. Marcgravia umbellata (P. I. 242346) is an interesting climber from tropical America. In the wild the flowers of Marcgravia are pollinated by humming birds. The rarely grown Cochliostema jacobianum (P. I. 242326), a spiderwort relative from Ecuador, was in flower. The bright blue flowers on long axillary peduncles at once identifies this plant with the Commelinaceae. But in habit the latter species strongly resembles a member of the Bromeliaceae.

# TALBOT MANOR

KINGS LYNN, FINCHAM, NORFOLK

(Sept. 25-28)



BN - 8974

Figure 61. -- Begonia 'Iron Cross' (P.I. 241217).

The subtropical and tropical collections at Talbot Manor in Norfolk probably cannot be duplicated elsewhere among the private exhibitions of these plants in Great Britain. With insatiable energy, Mr. L. Maurice Mason, owner of the garden, has traveled in recent years to Borneo, Malaya, New Guinea, South Africa, Tanganyika, Madagascar, British Guiana, and Costa Rica in search of new ornamental plants for his collections. Orchids are of special interest. Over 125 introductions of orchids, especially species from New Guinea and Madagascar, originated from the collections at Talbot Manor.

Begonias occupy an entire greenhouse. Begonia 'Iron Cross' (P.I. 241217), first introduced from Singapore to England by Mr. Mason, is the outstanding begonia in the collection (fig. 61). Episcia lilicina (P.I. 242590), a lavender-flowered species from Costa Rica is another of Mr. Mason's introductions. Hoyas of interest included Hoya imperialis (P.I. Nos. 242597 and 242598) from New Guinea, and H. ridleyi (P.I. 242599) from Java. Eranthemum wattii (P.I. 242593) is a little-known species from India with violet-blue flowers. E. nervosum is the species most commonly grown in the United States. Impatiens repens (P.I. 242602) from Ceylon with reddish stems and bright

yellow flowers one-half an inch across is an attractive trailing species for a hanging basket. Leea amabilis (P. I. 242605), now a rarely cultivated stovehouse shrub from Borneo, is an outstanding ornamental species in the collection of Mr. Mason. The



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Figure 62. -- Sansevieria metallica (P.I. 242679) with leaves very stiff and flowers white.

young leaflets are bright crimson tinged with brown with the central midrib pale rose; at maturity they become dark bronzy green and a silvery band of white develops along the midvein, the underside is claret-red. Sansevieria metallica (P.I. 242679) with leaves very stiff and flowers white (fig. 62), received an Award of Merit, Royal Horticultural Society, London.

A tropical herbaceous plant of much merit is <u>Tapeinochilus pungens</u> (P.I. 242541) from Indonesia. The showy orange waxy conelike inflorescence is borne on naked peduncles among the leafy stems a foot above the base of the plant. The flowers last for several weeks under tropical greenhouse conditions.

Plants with variegated foliage are a special feature among the hardy plants grown by Mr. Mason. Of outstanding merit is <u>Sambucus nigra</u> 'Albovariegata' (P. I. 242540). The white-streaked leaves are suggestive of a shrub in full flower.

Buxus sempervirens 'Prostrata' (P.I. 242524) is of greatest interest among the boxwood grown at Talbot Manor. Plants of this cultivar are about 2 feet tall with stiff, horizontally spreading pearl-white branches that protrude through the lustrous dark green coriaceous foliage. B. semper-

virens 'Myosotifolia' (P.I. 242522), the forget-me-not-leaved boxwood, and <u>B. sem-pervirens</u> 'Pendula' (P.I. 242523), the weeping boxwood, are cultivars with relatively thin leaves and lax branches.

A splendid rue, <u>Ruta graveolens</u> 'Jackman' (P. I. 242539) differs from the typical form of the species in the dwarfer habit, 12 to 14 inches tall, with thicker and darker blue leaves. <u>Agapanthus orientalis</u> 'Trudy' (P. I. 242517) with dark blue, more or less pendulous flowers, received a First Class Certificate from the Royal Horticultural Society in August 1957.

Two hundred and twenty-five introductions originated from the collections at Talbot Manor.

#### CAMBRIDGE BOTANIC GARDEN

#### CAMBRIDGE

(Sept. 29)

Founded in the middle of the 18th century, the Cambridge Botanic Garden settled on its present site in 1840. About this time, Charles Darwin matriculated as a student at the botanic garden under Henslow. The botany school and associated botanic garden over the past 119 years have become leading centers of botanical and horticultural activity in Great Britain.

The recent Cory Bequest will permit considerable modernization and expansion of the old garden. The additional land acquired will expand the garden to about 60 acres. An expanded arboretum, a new rock garden, and additional greenhouses will be included as part of the new facilities.

The collection of Ephedra, grown together in a large bed, is one of the most outstanding plant groups at Cambridge. Specimens of E. americana var. andina (P.I. 243292) from Chile, are 3 feet tall; E. gerardiana (P.I. 243294), from the Himalayas is 2 feet tall; E. major (P.I. 243295), a widely distributed species from the Meditterranean area to India is 6 feet tall; and E. monostachya (P.I. 243293) is a prostrate species from Siberia. A 100-foot California redwood (Sequoia sempervirens) in the garden is one of the oldest specimens of this species in England. S. sempervirens 'Cantab' (P.I. 242680), a prostrate form, is grown from a witchesbroom that developed on a lower branch of the Cambridge specimen.

Among the subtropical and tropical plants of special interest in the greenhouses, Begonia crispula (P.I. 242662) is a splendid dwarf species only recently introduced from Brazil; and Eupatorium sordidum (P.I. 242668) is an attractive Mexican composite known for the very colorful purplish foliage especially of young pot-grown specimens.

Jaborosa integrifolia (P.I. 242677), a rarely grown member of the Solanaceae from Argentina with tubular white flowers, grows satisfactorily at Cambridge in a border for rare plants. To the Cambridge Botanic Garden goes the credit for having produced, nearly 60 years ago, some of the first Gerbera hybrids known to horticulture. Original plants still exist in the Cambridge collections.

The course for student gardeners is an important function of the Cambridge garden. Young men from all parts of Great Britain and from overseas come to the garden for a 2-year training period. This opportunity can be highly lucrative since the students in addition to training as gardeners are permitted to take advantage of some of the academic facilities of the botany school.

# ROYAL BOTANIC GARDENS

KEW, SURREY

(Oct. 3-11, Nov. 1-12)

Since its founding in 1759 by Princess Augusta, mother of George II, the Royal Botanic Gardens at Kew in the suburbs of London, developed from a modest 9 acres to a modern garden now spread over 300 acres. (fig. 63). It stands today among the most comprehensive botanical institutions in existence. The plant collections are truly remarkable in scope. Basically, Kew Gardens is a research institution and for this reason the living collections are devoted especially to species of botanical interest. Ornamental plants, though, are abundantly represented in the extensive collections.



Figure 63. --Royal Botanic Gardens, Kew, England. 18th century pagoda is a prominent landmark.

The 5 departments of the gardens include (1) the herbarium and library, (2) the economic museums, (3) the Jodrell laboratory, (4) the garden department, and (5) the quarantine station. Under the garden department, the curator is in charge of the living collections that number about 45,000 kinds of plants. The quarantine station functions entirely for screening of diseases, principally coffee, rubber, cocoa, and other economic plants destined eventually for Commonwealth countries.

Introductions were limited to special groups, chiefly broad-leaved evergreens, and a few selected species from the tropical pits. The collection of named cultivars of English holly (Ilex aquifolium), and the hybrid holly I. x altaclarensis (I. aquifolium × I. perado) from the Victorian era is one of the most comprehensive in Great Britain. Introductions of more than 60 named Victorian hollies originated from the Kew collections.

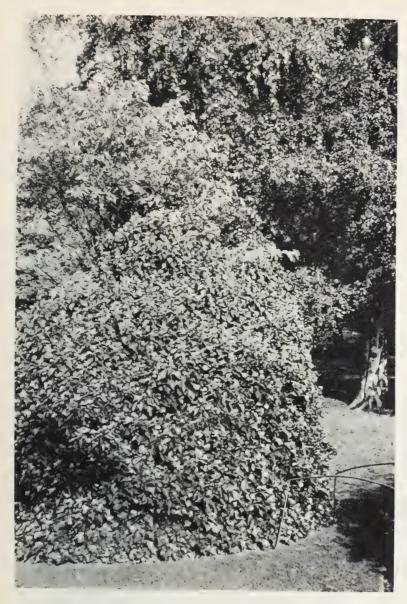
Mr. W. Dallimore, former curator of the arboretum at Kew, brought together a large assortment of British

grown cultivars of <u>Ilex</u> in preparation for his book, published in 1908.<sup>5</sup> The task was a difficult one to unravel the complexities then existing among the cultivated <u>Ilex</u> in British gardens. Fortunately, much of the collection brought together by Mr. Dallimore may still be studied at Kew. The writer would suggest as a result of his rather critical survey of the Kew collection that most of the cultivars included by Dallimore under <u>I. platyphylla</u> and some of those included under <u>I. aquifolium</u>, fit better as <u>I. X altaclarensis</u>. A modern study of <u>I. aquifolium</u> as known in western Europe and its relationships to <u>I. platyphylla</u> and <u>I. perado</u> from the Canary Islands, Azores, and Madeira is needed.

Species of Chinese Osmanthus are among the most attractive of broad-leaved evergreen plants for warm-temperate regions. O. yunnanensis (P.I. 242883), from southwestern China, is an evergreen shrub or small tree, 6 to 20 feet tall, with relatively large leathery spinose-dentate leaves, 3 to 5 inches long. O. serrulatus (P.I. 242887), also from southwestern China, with lustrous, leathery leaves 2 to 4 inches long, is one of the most attractive of the cultivated species at Kew. The densely branched habit suggests that the latter species would make a useful hedge plant. O. armatus (P.I. 242232) resembles O. yunnanenssis in the size of the leaves. From the latter species it differs in the thicker leaves and larger marginal spines. O. sauvis (P.I. 242886) is the Himalayan equivalent of O. delavayi, a Chinese species. O. delavayi (P.I. Nos. 242233, 242288 and 243272) is perhaps the most beautiful in flower of all the cultivated species of Osmanthus. The fragrant white flowers produced in the spring months indeed deserve the accolades of praise bestowed upon O. delavayi by British plantsmen.

<sup>&</sup>lt;sup>5</sup> W. Dallimore. Holly, Yew, Box. 1908.

Phillyrea decora is a relatively little known broad-leaved shrub or small tree from Turkey. Two forms of this plant at Kew (P. I. 242890) with leaves 1 inch to 1-1/2 inches wide, and (P. I. 242891), with narrower leaves 1/2 to 1 inch wide, indicate a



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Figure 64. -- Arborescent form of the common ivy, Hedera helix 'Arborescens', grown as an erect shrub from mature flowering wood.

measure of the potential leaf variation within this species. P. decora makes a splendid specimen plant, 10 to 12 feet tall; it should also make a good hedge plant. New introductions from the wild of this species should be attempted.

The collection of "shrub ivies" near King William's Temple includes Hedera helix 'Arborescens' (fig. 64); H. canariensis 'Arborescens' (P.I. 242878); and H. colchica 'Arborescens' (P.I. Nos. 242877 and 242878). The various species of Hedera when propagated from mature flowering wood assume the growth habit of a dense erect bush. All make excellent specimen plants of unusual ornamental merit. The older plants at Kew arenow 6 feet tall.

The collection of hardy bamboos ranks among the most comprehensive in Europe. At least 2 species in the collection, Sinarundinaria murielae (P.I. 244003) and S. nitida (P.I. 244004), both native of China, are yet to be established in cultivation in the United States.

A cultural method of some note often used at Kew and by British plants-men generally is to cover herbaceous plants subject to damping off in winter with a cloche (fig. 65). A plate of ordinary glass affords the required protection necessary for certain alpine species, such as Primula and encrusted species of Saxifraga, and dry climate species, such as certain Labiatae of the Mediterranean area, that otherwise would rot or become injured by freezing due to excess water on the crown of the plant.

In the Temperate House, the Javanese hybrid rhododendrons are of special interest. Rhododendron jasminiflorum from Malacca; R. javanicum from Java; R. brookeanum from Borneo; and R. teysmannii from Malaya are the principal parental species. The "Javanese hybrids" derived from these Indo-Malayan species were first produced by the famous horticultural firm of James H. Veitch at Exeter about 1850. Many hybrids were grown at this time, few of which exist today. The Kew collection includes perhaps a dozen named Javanese hybrids. Introductions include R. × 'Clarinda' (P.I. 243996); R. × 'Pink Delight' (P.I. 242916) with clear pink flowers; R. × 'Princess Alexandria' (P.I. 243997); R. × 'Red Prince' (P.I. 243998); and R. × 'Taylori' (P.I. 243999) with pink flowers. At least two of the parental species are still at Kew, R. jasminiflorum

(P.I. 242915) with white flowers and R. retusum (P.I. 242918) with red flowers. Unlike temperate climate rhododendrons, the subtropical hybrids and species flower in irregular flushes at various seasons. The subtle pastel colors recommend these Javanese rhododendrons for wider cultivation wherever they can be grown. In a greenhouse, the Javanese types flower best when grown potbound.

The collection of true ferns, and fern allies (especially Selaginella and Lycopodium) at Kew represents one of the most comprehensive exhibitions of these plants in existence. A long tradition exists in growing ferns at Kew. The first director, Sir William J. Hooker, was a foremost authority on these plants and a notable collection was assembled by him. Toward the end of the 19th century, Mr. John Smith, longtime curator at Kew, added such new material to the collection, and his book about ferns is still an authoritative work on the subject. The scope of the present collection though surpasses all previous efforts in this direction. About 25 introductions of tropical Selaginella originated from the Kew collection. Many of these highly decorative fern relatives are suitable for a terrarium or humid greenhouse.

The collections of insectivorous plants, especially hybrid Sarracenia and Nepenthes, are strikingly beautiful and stand out among the notable plant groups in cultivation at Kew. The hybrids originated chiefly from S. purpurea, S. flava, and S. psittacina largely at the old firm of James H. Veitch. The pitchers vary greatly in size and shape; in color they are often bizarre, with red predominating suffused with green markings. Each February, sarracenias are divided, repotted in soil, and plunged into a bed of live sphagnum moss on a greenhouse bench under full light. The night temperature remains at 40° to 50° F. in winter and 50° to 60° F. in summer.



Figure 65. -- Royal Botanic Gardens, Kew, England. Cloche over rock garden saxifrage, a method of protection commonly employed in British gardens for plants subject to water-logging of the crown in winter.

The hybrids are maintained under these conditions for many years. Of the wild species, S. purpurea is the only one that survives more than several years at Kew.

The collection of hybrid Nepenthes is extensive. The hybrids on the whole, are easier to grow than the species. N. rafflesiana, a native of the coastal area of Malaya is one of the easiest to cultivate and is one of the showiest.

## CHELSEA PHYSIC GARDEN

# LONDON

(Oct. 13, Nov. 10)

The Chelsea Physic Garden, London, founded in 1683 by the Apothecaries Society of London is the second oldest botanic garden in England. The garden stands on the original 4 acres adjacent to the River Thames. In the center, a statue of Sir Hans



Figure 66,--Chelsea Physic Garden, London, Statute of Sir Hans Sloane, early benefactor of the garden and founder of the British Museum, Rock garden in foreground with basalt brought from Mt. Hekla in Iceland by Sir Joseph Banks in the 18th century.

Sloane reminds the visitor that this 18th century physician-naturalist was the great benefactor of the Chelsea garden (fig 66).

Under the curatorship of Philip Miller, between 1722 and 1770, the Chelsea garden became an important center of foreign plant introduction -the first of its kind in Great Britain. The prototype of the modern hothouse was the great "stovehouse" first built at Chelsea about 1685 to accommodate tropical plants. Linnaeus visited the garden in 1736. The great Swedish naturalist was one of the first of distinguished foreign guests to exchange information with Philip Miller about new plant introductions received from America. Miller was the foremost British horticulturist of his day. The 8 editions of his "Gardener's Dictionary" are of fundamental importance to the history of cultivated plants and to horticulture.

The Chelsea Physic Garden now maintained by the London Parochial Charities participates in a wide range of activities, largely in supplying plant materials to London schools and colleges. The collections consist mostly of herbaceous species grown in narrow beds divided by verdant grass pathways in the style of an 18th century herb garden. The largest English yew (Taxus baccata) in greater London, a specimen about 15 feet tall with a branch spread of 25 feet stands near the statue of Sloane. Several large specimens of Catalpa bignonioides are the most prized of the flowering trees. A rarely grown ornamental shrub, Amicia zygomeris (P.I. 242922) is a Mexican species of Leguminosae with obcordate, wedge-shaped leaves and deep yellow peashaped flowers. Cyclamen rohlfsianum (P.I. 243811) from North Africa is one of the rarely cultivated species of the genus. A large bed of Romneya coulteri, the whiteflowered poppy of California, occupies a prominent position in the garden during midsummer.

A greenhouse of tropical species includes a fairly extensive collection of ferns, tropical vines, and pot plants.

One of the most interesting historical features is the rock garden which includes pieces of basalt brought from Mt. Hekla in Iceland by Sir Joseph Banks on his voyage to that volcanic island in the 18th century (see fig. 66).

#### BORDE HILL GARDENS

SUSSEX

(Oct. 12)

Borde Hill is well known among the private arboretums of Great Britain. Located in the Sussex hills about 50 miles south of London, the collections of Coniferae and Ericaceae cover several hundred acres. Founded by Col. Stephenson R. Clarke at the end of the 19th century, the graden now is in the hands of Sir Ralph Clark, his son.

Plants from China are represented more than from any other region. From 1924 onwards the woody collections increased rapidly from seed sent by George Forrest, J. F. Rock, and F. Kingdon-Ward from China. Large plots of Chinese trees are beginning to assume the proportions of a forest at Borde Hill.

One of the rarest of Asian conifers in the collection is <u>Cunninghamia konishii</u>, from Formosa, now a small tree. The collection of magnolias includes several of the rarer Chinese species, such as <u>Magnolia campbellii</u>, <u>M. mollicomata</u>, <u>M. officinalis</u>, <u>M. sargentiana</u>, and <u>M. sprengeri</u>. A specimen of the Chinese tuliptree (<u>Liriodendron chinense</u>) is nearly 50 feet tall.

Camellia × williamsii 'Donation' (C. japonica × C. saluenensis), and C. reticulata × C. saluenensis 'Salutation' are two hybrid camellias of much merit that originated at Borde Hill under the late Col. Clarke. Of the C. × williamsii cultivars grown in British gardens, 'Donation' has received the highest acclaim.

Introductions from Borde Hill include Quercus alnifolia (P.I. 242930), a beautiful evergreen oak from Cyprus; Schizandra grandiflora (P.I. 242932), an evergreen Chinese species; Telopia truncata (P.I. Nos. 242935 and 242936), one of the more cold resistant Proteaceae from Australia; Sinojackia rehderiana (P.I. 242934), an interesting Chinese relative of Styrax; Eucryphia × nymansensis 'Nymansay' (P.I. 242923), a fine hybrid of E. cordifolia × E. glutinosa that originated in the Nyman's garden, a neighbor of Borde Hill; and Ligustrum confusum (P.I. 242929), an interesting Himalayan species with shiny peachlike leaves.

In recent years the growing of <u>Nerine</u> hybrids has become an important enterprise at Borde Hill.

# JOHN INNES HORTICULTURAL INSTITUTION

# BAYFORDBURY

(Nov. 8)

Founded in 1910, under the will of Mr. John Innes, the pioneer institution at Merton for many years was led by W. Bateson, founder of British genetics and proponent of Mendelism shortly after its rediscovery at the turn of the present century. Few institutions have made greater strides in studies of fundamental interest to horticultural science.

Since 1950, the John Innes Horticultural Institution, occupies a new site on 372 acres of rolling countryside in Hertfordshire about 20 miles north of London. The scientific laboratories are set up in the 18th century mansion of Bayfordbury. Extensive

ranges of new greenhouses are equipped to handle a wide range of plant materials under controlled growing conditions.

The objectives of the John Innes are encompassed within 5 departments:

Genetics. -- Research concerns a wide variety of subjects of basic interest to plant breeders.

Cytology. --X-rays and drugs sometimes are effective in altering chromosome behavior in the development of new kinds of cultivated plants. Interpretations of cytological data are important in the application of genetical studies to plant breeding.

Pomology. --Breeding work concerns the development of new types of fruits and vegetables, mainly by hybridization and selection.

Garden department. --In recent years the John Innes has received much popular acclaim from plant growers in Great Britain and to some extent in the United States. The John Innes Potting Composts developed by scientists at this institution have greatly minimized the guesswork in formulating potting soils for all kinds of plants grown in containers. A small book has been published on the subject.

Collections. -- Two groups of cedars, Cedrus libani, planted in 1765, now frame the mansion and are among the oldest cultivated specimens of this species in Great Britain (fig. 67). The pinetum at Bayfordbury was laid out in 1838 by J. C. Loudon, foremost British dendrologist of his day. Since 1950, a National Rose Species Collection has been established as one of the permanent horticultural features of the John Innes.



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Figure 67. -- Cedrus libani, John Innes Horticultural Institution, planted 1765.

In the greenhouses, the collection of subtropical ornamentals in the corridors is small but selective and beautifully maintained. The hybrid passion vines developed at the John Innes are an important contribution to ornamental horticulture. Passiflora X 'John Innes' (P. caerulea × P. quadrangularis) (P.I. 243897); and P. × 'Allardii' (P. caerulea 'Constance Elliott' × P. quadrangularis) (P.I. 243894) are two outstanding hybrids developed at this institution. P. suberosa (P.I. 243896) with an insignificant greenish flower is used as a pollen parent in hybridization work. P. mixta (P.I. 243895) with tubular pink flowers is one of the showiest cultivated species.

Cestrum fasciculatum 'Newellii' (P.I. 243889) is perhaps the best of the cultivated cestrums with firecrackerlike deep crimson flowers; Pentapterygium rugosum X P. serpens 'Ludgvan' (P.I. 243898) is an interesting hybrid with lanternlike brownish flowers an inch long; Beaufortia sparsa (P.I. 243885) from Australia is a heathlike evergreen shrub with scarlet flowers; Macleanea punctata (P. I. 243892) of the Ericaceae is a relative of Cavendishia from the Andes. New bouvardias of Dutch origin, such as Bouvardia 'Rosalinea' (P.I. 243888), with light salmon-pink flowers, and B. 'Pink Giant' (P.I. 243887), with deep pink flowers three-quarters of an inch across, are outstanding improvements over the older cultivated types.

#### ROYAL HORTICULTURAL SOCIETY'S GARDEN

## WISLEY

(Oct. 14, Nov. 3)

The hybrid gazanias in the garden of the Royal Horticultural Society, Wisley, rank among the outstanding herbaceous ornamentals of recent origin. Hybrid gazanias are rapidly gaining favor in British gardens. The hybrids flower and produce



Figure 68. -- Administration building Royal Horticultural Society's Garden, Wisley, England. Clematis armandii at corner of building. (Courtesy of N. K. Gould.)

Seed in a single season, although the named hybrids must be vegetatively propagated. Gazania bracteata, G. pavonia, G. rigens, and G. uniflora allegedly are involved in the hybrids. The well-known old hybrid, G. X splendens also is involved. Gazania is a South African genus of sunflowerlike low herbaceous plants related to Venidium and Arctotis.

The hybrids are extremely variable in habit, foliage, and flower color. The ray flowers vary from white through pure yellow to orange and deep pink with dark green to almost black eye-spots at the base. Solid colors without eye-spots also occur. The leaves of the Wisley hybrids are strap-shaped or pinnately divided, uniformly green of green above, and white-woolly beneath. The plants mostly are densely tufted, from 6 to 8 inches tall, wholly upright or with spreading branches that form a rosette. A few types develop rather long trailing branches.

The hybrid gazanias add to gardens a new group of ornamentals that heretofore have not been grown in the United States. G. x splendens is perhaps the only hybrid that has been cultivated to some extent, this almost entirely in California. The hybrids flower all summer until frost. The many gaudy colors are extremely congenial in a group. These plants grow very well in sandy soil.

## MYDDELTON HOUSE

# HERTFORDSHIRE

(Oct. 5)

Over a 50-year period, the garden of the late E. A. Bowles at Myddelton House, some 20 miles north of London, developed into one of the outstanding private gardens of England. The garden was a laboratory for plant breeding for many years.

Crocus and Colchicum demanded special attention from Mr. Bowles. His books remain the best modern treatment of these plants. Crocus chrysanthus 'E. A. Bowles', developed by Mr. Bowles but named by the Dutch growers, is a first-class cultivar of this yellow-flowered species. Of the colchicums, C. speciosum 'Rubrum' (P.I. 243809), with deep reddish-purple flowers 5 to 6 inches long, is an outstanding autumn flowering type. The garden contains a host of other "bulbous" plants, such as snowdrops (Galanthus), narcissi, tulips, and an extensive collection of hardy cyclamen. Thousands of Cyclamen neopolitanum in several color forms from pure white through deep rose have naturalized in many parts of the garden. Chlorophytum bowkeri (P.I. 243807), one of the more unusual South African bulbous plants in the garden, begins to flower in late autumn.

Woody plants of note include, <u>Ilex aquifolium</u> 'Angustifolium' (P.I. Nos. 242850 and 242997), 30 feet tall with narrow leaves 1 to 2 inches long and 1/2 to 3/4 inches wide, the smallest leaved of the cultivated English hollies. <u>Buxus sempervirens</u> 'Fastigiata' (P.I. 242847), with strict branches is an outstanding fastigiate form of the boxwood. <u>Prunus laurocerasus</u> 'Kitaebelii' (P.I. 242867), at Myddelton House is a dwarf plant about 2 feet tall with narrow lanceolate leaves, 2 to 3 inches long; perhaps it is only a variant of the larger growing <u>P. laurocerasus</u> var <u>schipkaensis</u>. A large 12-foot bush of <u>Viburnum fragrans</u> was grown from the original introduction of this species from China by Reginald Farrer about 1910. <u>Vitis vinifera</u> 'Purpurea' (P.I. 242868) with purplish-red leaves is a handsome ornamental form of the European wine grape. The rarely cultivated solid-stemmed bamboo, <u>Chusquea culeou</u> (P.I. 252395), from southern Chile and adjacent Argentina, is well-established at Myddelton House. The introduction of this bamboo into British gardens came via seeds sent by Mr. Harold Comber on a trip to southern Chile about 1925. Another highly ornamental bamboo in the garden, <u>Sinarundinaria nitida</u> (P.I. 244004), is a Chinese species.

Holcus lanatus 'Albo-marginatus' (P.I. 242849), the velvet grass with white-variegated leaves, and Azara microphylla 'Variegata' (P.I. 242846), the white-variegated leaf form of this Chilean species are two outstanding variegated-leaved plants at Myddelton House.

Few gardeners knew plants the way Mr. Bowles did. His series of books covering the four seasons at Myddelton House are unusually lucid and radiate with much sage advice from observations rarely included in gardening books.

The plant collections at Myddelton House currently are maintained under the sponsorship of the Chelsea Physic Garden, London.

# CAERHAYS CASTLE

# CORNWALL

(Oct. 23 - 24)

Geographically, few British gardens are more favorably situated than the Cornish garden of Caerhays Castle, located at the head of a protected cove near St. Austell on the eastern shore of the Cornish peninsula. The mild rainy climate favors the cultivation of warm-temperate plants. In many ways the collection is unique.

About the turn of the present century, the late J. C. Williams began to develop the garden at Caerhays on a grand scale with plantings that now extend over several hundred acres. For some years Mr. Williams avidly grew Chinese plants from seed received via George Forrest and E. H. "Chinese" Wilson, both renowned collectors of Chinese plants in the early years of the present century. To walk through the garden gives one the impression of a Chinese rather than an English woodland.

Scattered through the garden are older specimens of Monterey pine (Pinus radiata); Lebanon cedar (Cedrus libani); English oak (Quercus robur); and English elm (Ulmus campestris) planted before the era of Chinese introductions at Caerhays.

The collections are particularly rich in Chinese species of <u>Camellia</u>, <u>Magnolia</u>, <u>Rhododendron</u>, <u>Ilex</u>, <u>Acer</u>, and <u>Quercus</u>. Thickets of the wild form of <u>Camellia</u> <u>reticulata</u>, <u>C</u>. <u>saluenensis</u>, and small forests of rhododendrons form the understory beneath towering evergreen Chinese oaks.

Camellias. -- The wild form of Camellia reticulata (P.I. Nos. 243238, 243239, 243240 and 243241) and C. saluenensis (P.I. 243862) are grown in great profusion at Caerhays. Indeed, C. reticulata has naturalized in several parts of the garden. The C. x williamsii hybrids (C. japonica x C. saluenensis), developed at Caerhays by the late J. C. Williams, brought a completely new race of garden camellias to the attention of gardeners. The C. x williamsii cultivars 'Charles Michael' (P.I. 243243); 'J. C. Williams' (P.I. 243322); 'Mary Christian' (P.I. 243245); 'November Pink' (P.I. 243246); and 'St. Ewe' (P.I. 243244) are the 5 best original selections from this cross. The cultivar 'November Pink' bears special recognition for its early November flowering with larger blooms of better quality than C. sasanqua in flower at the same time.

Hollies. -- The Caerhays collection is of first importance as a source of unusual and rarely grown hollies of garden merit. Ilex georgei (P.I. Nos. 243265 and 243314) from Yunnan heads the list. This handsome species obviously is related to I. pernyi but differs from the latter in the more lustrous and less sinuate leaves, larger size of the plant, and greater susceptibility to frost injury. I. georgei suffers winter injury at Caerhays whereas I. pernyi is ironclad. Specimens of I. georgei are 20 feet tall at

Caerhays. Several forms of I. dipyrena (P.I. Nos. 243259, 243255, 243256, 243257 and 243864) are in cultivation. This extremely variable species occurs from the Himalayas to China. I. franchetiana (P.I. 243312) is doubtfully distinct from I. fargesii. At Caerhays, I. franchetiana forms a single-trunked evergreen tree 20 feet tall with longer, narrower leaves than in typical I. fargesii. I. insignis (P.I. 243266) from the Himalayas is an elegant evergreen tree 20 feet tall with spine-margined leaves. I. sikkimensis (P.I. Nos. 243264, 243268 and 244717), also of the Himalayas are beautifully shaped trees 25 feet tall.

Plantings of <u>I. platyphylla</u> (P.I. 243328) may well represent the typical form of this large leaved species from the Canary Islands. Plants grown under this name in many British gardens most likely are hybrids and not the typical form of the species.

Quercus. --Q. fenestrata, Q. cleistocarpa, Q. henryi, Q. engleriana, Q. lamellosa, and Q. oxyodon are a few of the more than 50 species of Asian oaks in cultivation at Caerhays. It is lamentable that material of these trees could not be introduced, since



Figure 69.--Acer palmatum 'Cinnabar Wooded' (Senkaki). The foliage in autumn is golden yellow.

few of the ones represented at Caerhays are in cultivation in the United States. At Caerhays these oaks rarely produce acorns, and vegetative propagation usually is best accomplished by grafting to related evergreen oaks.

Rhododendron. --Rhododendrons predominate among the woody collections at Caerhays. Large tracts are devoted almost exclusively to the Chinese species. Azaleas are represented by a collection of old specimens, mostly Japanese types, along the main drive into the garden. No Rhododendron introductions originated from Caerhays.

Acer. -- The collections of oriental maples at Caerhays deserve further attention since several of the species of Chinese origin are not in cultivation elsewhere. In October, one of the handsomest maples is Acer palmatum 'Cinnabar Wooded' (Senkaki) with relatively small leaves that glow with the brilliance of illuminated gold (fig. 69). Unfortunately, vegetative material of Acer for propagation in autumn is quite useless and seeds were unobtainable.

Recently, the garden has come under the management of Mr. Julian Williams, grandson of the founder. A total of about 75 introductions originated from the Caerhays collections.

# PENJERRICK

CORNWALL

(Oct. 25)

Penjerrick is well known among the older gardens of Cornwall. The sequestered site along the eastern shore of the Cornish peninsula near Falmouth favors the cultivation of tender warm-temperate plants not generally grown in British gardens. Penjerrick

long has excelled in rhododendrons. Rhododendron × barclayi; R. × barclayi 'Helen Fox'; R. × barclayi 'Robert Fox'; and R. × 'Penjerrick' are hybrids of renown from this Cornish garden.

Specimens of Australian tree ferns (Dicksonia antarctica), 20 feet tall are a striking feature at Penjerrick. Cornus capitata (P.I. 243863), a white-bracted species of dogwood from the Himalayas was laden with pink fruit the size of large strawberries at the time of our visit. At Penjerrick, Hedychium gardnerianum, a beautiful yellowflowered subtropical species from northern India, flowers regularly in an openborder. Laurelia serrata, a Chilean evergree tree is 40 feet tall at Penjerrick.

Among the tender rhododendrons, R. × 'Lady Alice Fitzwilliam' (P.I. 243319) with fragrant white flowers, is a first class R. bullatum hybrid of the Maddenii series. The hybrid Hypericum × 'Rowallane' (P.I. 243309) (H. hookerianum rogersii × H. leschenaultii) flourishes at Penjerrick. This highly esteemed St. John's wort is a shrub, 3 to 4 feet tall with cup-shaped, waxy, deep yellow flowers 2 inches or more across. In the United States this hypericum is likely to be suitable only for the Far West and parts of the Deep South.

Mrs. W. Trench Fox now maintains the garden.

TREWITHEN

CORNWALL

(Oct. 22)

The garden of Mr. G. H. Johnstone at Trewithen is one of a series of notable Cornish gardens that specializes in Chinese plants. The climate of this inland garden is somewhat more rigorous and winter injury to plants is more widespread than in the coastal districts of Cornwall. The collections of Chinese species have been grown over the past 50 years from seeds originally received from the renowned collectors of Chinese plants, the late George Forrest, E. H. "Chinese" Wilson, Reginald Farrer, and Frank Kingdon-Ward. In recent years material has been received from H. H. Yu. The collection of Chinese species of Magnolia is one of the most comprehensive in existence.

Magnolias: --Seeds were available of the following species: M. dawsoniana (P.I. 243868), a deciduous species with pink flowers 6 to 8 inches across; M. globosa (P.I. 243869), the Himalayan form, and M. globosa (P.I. 243876), the Chinese form, a deciduous species with white flowers; M. mollicomata (P.I. Nos. 243872 and 244032), of southwestern China; and M. sargentiana (P.I. Nos 243873 and 243875), a deciduous species with rose-pink flowers 6 to 7 inches across. The tender species M. nitida and M. rostrata are the only Chinese magnolias that do not regularly flower and produce seed at Trewithen.

An illustrated work in color by Mr. Johnstone about the magnolias cultivated at Trewithen was published by the Royal Horticultural Society, London, in 1955.

Maples. -- The maples (Acer) cultivated at Trewithen include a comprehensive collection of rarely grown Chinese species. A. caudatum, A. laevigatum, A. wardii, A. franchetii, and A. laxiflorum are represented by specimens 20 to 25 feet tall. Our visit in October was not the most propitious season to obtain vegetative material of Acer for propagation, and these latter species do not regularly produce viable seed at Trewithen. Several species in the collection were laden with ripe samaras, including A. flabellatum (P.I. 243231), the Chinese form of A. campbellii with distinctive usually 7-lobed leaves about 6 inches across. A. grosseri (P.I. Nos. 243234 and 244985); and

A. grosseri var. hersii (P.I. 243235) from central China, often confused with A. davidii in cultivation.

Hollies. -- Of the hollies, the most interesting is a group of <u>Ilex ficoidea</u> (P.I. Nos. 243260 and 243261), specimens 30 feet tall. This distinctive evergreen Chinese species has leaves 2 to 4 inches long, serrate, with masses of orange-red berries in dense clusters at the branch ends. In shape, the leaves simulate those of certain species of fig. <u>I. ficoidea</u> heretofore has not been cultivated in the United States.

<u>Camellias</u>. -- Camellias flourish at Trewithen. Plants of the wild form of <u>Camellia reticulata</u> from the original Yunnanese introduction by George Forrest are now over 40 years old. The selection <u>C</u>. <u>reticulata</u> 'Mary Williams' is the most outstanding of the progeny raised by Mr. Johnstone. <u>C</u>. <u>japonica</u> (P.I. 243237) is an unusually good white variegated-leaved form of this species.

Rehderodendron macrocarpum (P. I. 243278), a Chinese relative of Styrax, is a distinctive rarely grown deciduous tree. The reddish twigs and lustrous green thick leaves, 3 to 5 inches long, recommend this tree for planting in mild temperate areas. A 20-foot specimen of Reevesia pubescens (P. I. 243277) at Trewithen with leathery evergreen leaves and white flowers is an esteemed flowering tree of the Sterculiaceae from Yunnan. The Chilean hazel (Gevuina avellana) of the Proteaceae is a small much branched bush at Trewithen with pinnate, lustrous evergreen leaves, and white flowers in racemes; the fruit is hazelnutlike and edible. Specimens of Schima khasiana and S. wallichii, both evergreen camellia relatives from India, are trees 30 feet tall. In October, the schimas are covered with hundreds of white flowers 2 to 3 inches across.

#### HILLIER NURSERY

# WINCHESTER

(Oct. 17-19)

The collection of hardy woody plants grown by the Hillier Nursery of Winchester is one of the most comprehensive available from a commercial source in Great Britain or on the Continent. Five nurseries are located in the Winchester area, each on a different kind of soil and habitat in consideration of the varying requirements of the plants grown. This firm specializes in rare and little-known trees and shrubs of ornamental merit. Herbaceous plants, aquatics, rose, and fruit trees are also offered. The thoroughness of coverage given by Mr. Hillier in assembling his vast collections is reflected in the lengthy lists of species and cultivars available in various well-known genera, of which the following are well represented: Maples (Acer) 88 kinds; junipers (Juniperus), 54 kinds; pines (Pinus), 41 kinds; barberries (Berberis), 142 kinds; and magnolias (Magnolia), 29 kinds.

Hollies grown at this nursery of special interest include <u>Ilex aquifolium</u> 'Aurea-Marginata Ovata' (P. I. 243090); <u>I. aquifolium</u> 'Ovatifolium' (P. I. 243089); <u>I. fragilis</u> (P. I. 243096), an unusual Himalayan species; <u>I. georgei</u> (P. I. 243104), a Chinese species related to <u>I. pernyi; I. hookeri</u> (P. I. 243097) from the Himalayas, with lustrous evergreen leaves 3 to 4 inches long; <u>I. fargesii</u> (P. I. 243095), a narrow-leaved form of this Chinese species; and <u>I. intricata</u> (P. I. 243100), a low nearly prostrate Himalayan evergreen holly with red berries.

Introductions of other woody plants have followed since our visit through special arrangements with Mr. Hillier.

#### NURSERY COURT

#### WINDLESHAM

(Nov. 11)

Nursery Court in Surrey, stands as one of the oldest existing nursery establishments in the London area. Rhododendrons and azaleas have been a specialty of this firm since its inception in 1847. A comprehensive collection of Ghent azaleas dates from the last century. Several rhododendron species in the Scotch pine woodland date from the Himalayan introductions of Sir Joseph Hooker over a century ago.

Shrub roses are a recent addition to the nursery. The collection of species and so-called old-fashioned shrub roses grown by Mr. Graham Thomas is perhaps the most complete of a commercial establishment in Great Britain. Few growers are more attentive than Mr. Thomas in matters concerning the nomenclature of these plants.

Introductions of special interest: Rosmarinus officinalis 'Jessup's Upright' (P.I. 244001), a fastigiate cultivar of the rosemary; Lavandula 'Hidcote Giant' (P.I. 243977) and L. 'Hidcote' (P.I. 243978), about 2 feet tall, a splendid form with very dark lavender flowers; Ruta graveolens 'Jackman' (P.I. 244002), a dwarf form of the species with exceptionally dark blue foliage. Rhododendron sinonuttalli (P.I. 244000), 4 to 5 feet tall, is the Tibetan form of this beautiful species, with fragrant white trumpet-shaped flowers, 3 to 4 inches long. This form of the species reputably flowers in 3 years from seed. Pelargonium spp. (P.I. 243987) from Mt. Ruenzori in East Africa is an extremely interesting suffrutescent subshrub up to 10 feet tall.with strongly scented leaves. The flowers are red and white.

Mr. J. P. C. Russell is the proprietor of Nursery Court.

# INTRODUCTIONS OF WILD PLANTS FROM THE MEDITERRANEAN AREA

On the present exploring trip only a very limited time could be devoted to collecting wild plants. A schedule that took the writer to over 60 localities of horticultural interest on the Mediterranean permitted little deviation beyond this. Wild relatives of many well-known ornamental plants occur in the Mediterranean countries visited. Requests were in hand to collect, if opportunity availed, wild material of certain genera. Narcissi (Narcissus), brooms (Cytisus, Genista, Sarothamnus), oleander (Nerium), crocus (Crocus), and snapdragon (Antirrhinum) are examples of genera common in American gardens with wild relatives in the Mediterranean area. To plant breeders, the acquisition of new germ plasm from the wild is of basic importance in research involving crop development and improvement.

Indeed, Spain and Portugal merit more attention as a source of native plants of potential value as ornamentals. Plants from the higher Spanish mountains undoubtedly would prove of value particularly for the drier areas of Midwestern United States and tier of the Northern States. One prominent nurseryman in Manitoba, for example, reports success in grown Spanish plants, especially Genista and Chrysanthemum.

Cytisus (Broom). -- This genus is abundant in the native flora of Spain and Portugal, where it occurs from the seashore to mountain top. Collections from the wild represent about a dozen introductions. C. albus (P.I. 238503), the Portuguese broom, is one of the superb sights of the hills of northern Portugal toward the end of March. The small pea-shaped milk-white flowers are borne in great profusion. The Warminster broom (C. × praecox) is a C. albus hybrid. In Portugal, C. grandiflorus (P. I. 237767) is a striking species with gently arching branches and deep yellow flowers. In early April the latter species contributes a great splash of intense yellow to the kaleidoscopic carpet of shrubs flowering on the Serra do Caramulo east of Coimbra. C. linifolius (P.I. 241468), a Spanish species, has linear silvery foliage and bright yellow flowers. The Scotch broom (C. scoparius) (P.I. 239078) occurs widely in southern Europe, especially in Spain where it is common along steep rocky banks or on gravel bars of rivers.

Genista, Sarothamnus (Broom). -- In the field these genera are difficult to separate from Cytisus. Technical characters based upon seed differences are of primary importance in distinguishing between these genera. G. cinerea (P. I. Nos. 239057 and 239077) from Andalusia is one of the handsomest of the Spanish brooms; it forms a densely branched bush, 3 to 4 feet tall, with deep to light yellow pea-shaped flowers one-half inch long; it is extremely variable in habit and color of flower. G. equisetiformis (P.I. Nos. 239071 and 241950) resembles none of the other genistas collected. This species forms a low-branched shrub, about a foot high, with slender tufted green stems and whorls of yellow flowers on the ends of the wispy branches. G. equisetiformis is common near the Mediterranean coast south of Granada from Motril to Malaga. G. lusitanica (P.I. Nos. 238685, 238693 and 242633) is a widely distributed very variable yellow-flowered species of Spain and Portugal, mostly occurring in the mountains. On the Serra da Estrella in Portugal the latter species forms a dense bush, 3 to 4 feet tall, whereas near the Spanish border at Guarda in eastern Portugal, it is a sprawly open shrub, 5 to 6 feet tall. G. triacanthos (P.I. 238951), a low bush 2 to 4 feet tall with deep yellow pea-shaped flowers, occurs throughout the pine woods of coastal Portugal, especially in the Oporto area. S. welwitschii (P.I. 242629), a yellow-flowered species occurs on the open rocky slopes of eastern Portugal near the Spanish frontier.

<u>Crocus</u>. -- Two native species from the Iberian Peninsula were collected. <u>C. carpetanus</u> (P. I. 238683), a pale lilac-flowered species is from the Serra de Marão in Portugal, and <u>C. clusii</u> (P. I. 238502), a light purple-flowered species, also native of Portugal was seen only in the botanical garden at Oporto. Both species are vernal flowering.

Antirrhinum. --Wild snapdragons are relatively common in parts of Spain, Portugal, southern France, and Italy. A. latifolium (P.I. 238762) with pink flowers occurs in Portugal. A. latifolium (P.I. 239365) with yellowish flowers is common on the lower slopes of the Maritime Alps in southern France. A small, white-flowered species, A. glutinosum (P.I. 242030) occurs along dry banks near Granada in Andalusia in southern Spain. A. tortuosum (P.I. Nos. 239992, 239993 and 241851) with narrow linear leaves and deep purplish-pink flowers is a shrubby species 3 to 4 feet tall from Sicily.

#### SIERRA NEVADA MOUNTAINS

GRANADA, SPAIN

(Apr. 5, Aug. 1-4)

The Sierra Nevada mountains of Spain support a wealth of dwarf herbaceous species, many of horticultural merit. Except for groves of poplars and willows in the deepest valleys, few trees grow on these essentially desert mountains. The Sierra Nevadas are the highest mountains of Spain. A passable road leads to the summit of the Pico Veleta, elevation 11,128 feet. Deep snow buries the upper slopes until May, and snow patches remain for most of the summer on the north side. Along this route a good cross section of the flora of the northern slopes occurs. The alpine flora does not appear until midsummer.

Subshrubs and herbaceous species predominate on the rocky slopes of the Sierra Nevada. Cushion species form the dominant plant association of middle elevations between 5,000 and 6,000 feet. In this zone two plants of the Leguminosae are very



Figure 70. --Cushion-plant habitat composed largely of Erinacea pungens (P. I. 242037) and Astragalus boissieri both of the Leguminosae.

common. Erinacea pungens (P.I. 242037) with bright blue pea-shaped flowers forms dense spiny cushions 2 to 3 feet across and 12 to 18 inches high (fig. 70). Astragalus boissieri, a shrubby species, 3 to 4 feet tall with vicious spines is associated with Erinacea. Ptilotrichum spinosum, a cushion shrub 1 to 2 feet tall of the Cruciferae is laden with pink flowers in early August.

Digitalis nevadensis is common on the open, rocky slopes at an elevation of about 6,500 feet. In habit, this Spanish foxglove closely resembles the woodland species D. purpureus, of northern Europe. Perhaps the latter well-known foxglove of gardens is only the northern European variant of a widely distributed polymorphic species. The rigorous habitat requirements of the Spanish species suggests that D. nevadensis

might prove adaptable to gardening conditions of Eastern United States. Unfortunately, the visit to the Sierra Nevada in August was too early for ripe seeds of D. nevadensis.

Introductions from the Sierra Nevada include a very small sampling of the species worthy of cultivation. Prunus prostratus (P.I. Nos. 241945 and 242041) usually a prostrate shrub, found growing on the face of rock cliffs would be suitable for covering banks and as a ground cover in an arid climate. The plants are mat-forming or sometimes erect. The fruit of this Spanish chokecherry turn bright red at first then black at maturity. The small, thick leaves one-quarter inch long, densely arranged on thick woody branches resemble those of Cotoneaster microphylla.

Helichrysum serotinum (P.I. 241940), a subshrub 2 to 3 feet tall with linear silvery leaves and yellow flower heads, is a species of considerable ornamental merit.

Marrubium supinum (P.I. 242039) is a herbaceous species 2 feet tall with handsome woolly leaves and purple flowers. Teucrium polium (P.I. 242044) is a densely tufted cushion plant 5 to 6 inches tall with yellowish woolly leaves and white flowers. Senecio tournefortii (P.I. 241839) is a bold herbaceous species 2 to 3 feet tall with bright yellow ray flowers. Chrysanthemum hispanicum (P.I. 241838) is a tufted rock graden species with light yellow ray flowers and finely divided grayish foliage. Phlomis crinita (P.I. 241844), 3 to 4 feet tall is a suffrutescent herb with beautiful white-woolly leaves and yellow flowers. Daphne gnidium (P.I. 242033) is a somewhat sprawly 4-to 6-foot shrub with fragrant white flowers in midsummer; the fleshy fruit is orange. A typical alpine plant of the Sierra Nevada often covering broad expanses of talus is Arenaria tetaquetra with masses of pure white flowers.

#### NARCISSUS FROM THE WILD

Of the 30 to 35 known species of <u>Narcissus</u>, the greatest number occur in Spain, Portugal, and adjoining North Africa. The remaining species occur in France, Italy, and central Europe. N. tazetta is the most widely distributed species. It occurs from the Atlantic coast of Portugal to Japan.

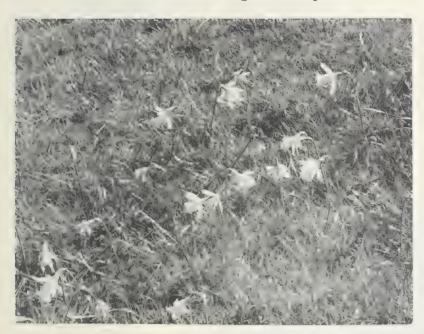


Figure 71. -- Narcissus pseudonarcissus spp. tortuosus (P. I. 238526), with twisted leaves and drooping light sulfur yellow flowers.

The growing of Narcissus in the United States is concentrated largely in the northern tier of States from material imported originally from northern Europe. Narcissus breeding developed in England, Holland, France, Belgium, and Germany under conditions which favored the selection of types suitable for the cool, moist conditions of western and northern Europe. The European types are not wholly adaptable in all parts of the United States.

A reservoir of new germ plasm of Narcissus from wild sources is calculated (1) to benefit breeders of narcissi in developing races more adaptable under the special climatic con-

ditions of the United States, and (2) to contribute genes useful in the control of disease. There is a demand for a race of trumpet daffodils more adaptable for wide use in southern United States where N. tazetta now is the species chiefly grown. Material should be collected of N. pseudonarcissus, the common trumpet daffodil, from its entire natural distribution (fig. 71). The development of narcissi resistant to Penicillum and Ramularia bulb rot and a "decline disease" caused by virus, conceivably would result from a reservoir of new germ plasm introduced from the wild.

Growers of narcissi gain little impression of the wide range of conditions under which species of Narcissus are found in the wild. The narcissi of Spain and Portugal for example, occur on neutral or acidic soils. In northern Portugal and adjoining western Spain, N. triandrus occurs on decomposed granite. N. rupicola, N. calcicola, and N. scaberulus usually occur in pockets of humus on decomposed granite boulders. N. pseudonarcissus and N. bulbocodium are meadow species often found growing in several inches of water at flowering time. N. tazetta is a seaside species. All the species observed prefer full sun.

# Introductions of Narcissus:

- 1. Species of rocky uplands, usually on decomposed granitic (acidic) soils, often found growing in humus in rock pockets.
  - N. calcicola (P.I. 238778).
  - N. rupicola (P.I. Nos. 238507 and 238704).
  - N. scaberulus (P.I. 238705).
  - N. serotinus (P.I. 243837), from Sicily flowers in October. With this species as a parent, conceivably a new race of late spring or autumn flowering narcissi could be produced.
  - N. triandrus (P.I. Nos. 238706, 238707, 238708, and 238741).
- 2. Species of grassy meadows, often flooded or very wet at flowering time but dry throughout the summer.
  - N. bulbocodium (P.I. Nos. 238777 and 238877). Rarely in bogs, occasionally in pine woods.
  - N. cyclamineus (P.I. 238701).
  - N. jonquilla (P.I. Nos. 238506 and 238702). Rocky river banks.
  - $\underline{N}$ , poeticus (P.I. Nos. 239333 and 239682). Usually moist meadows, rarely on dry rocky slopes (fig. 72).
  - N. pseudonarcissus (P.I. Nos. 238525 and 238526).



Figure 72. -- Narcissus poeticus var. recurvus (P. I. 239333) in moist meadow near St. Cannat, Aix-en-Provence, southern France, April 22, 1957.

### ENUMERATION OF THE INTRODUCTIONS

All materials were expedited to the Inspection House in Washington, D. C. by airmail or by commercial air transportation. After passing certain routine quarantine regulations, the material was transferred to the Plant Introduction Station, Glenn Dale, Maryland.

The enumeration to follow is arranged alphabetically by genus and species. The plant name is followed by the Plant Introduction (P.I.) number and the field number of the writer in parentheses. In most instances succinct descriptions give the salient details that identify the plant as a worthy ornamental.

Identifications of many of the plants enumerated are still tentative. Some of the collections are provided with names of garden origin that need further verification. Herbarium specimens were collected to supplement the living introductions whenever sufficient material was available at the source. In many instances this was not possible. Herbarium specimens often save years in the identification of trees and shrubs collected originally as seed.

A certain mortality is anticipated in all plant shipments. The present exploration was no exception with heavy losses in some groups. It is hoped subsequently to reintroduce some materials by improved techniques of importing plants under quarantine regulations.

Ornamental plant research workers and others interested in the availability of the plants enumerated should contact:

U. S. Plant Introduction Station Crops Research Division Agricultural Research Service U. S. Department of Agriculture Box 88, Glenn Dale, Maryland. Longwood Gardens of Longwood Foundation, Inc., Kennett Square Pennsylvania.

\* \* \* \* \*

or

ABELIA CHINENSIS R. Br. 242386 (5424) Caprifoliaceae. Shrub with drooping branches; leaves ovate, 1-12" long, acute, dark green above; flowers white; very floriferous. China. Cuttings from 1.6

ABELIA ENGLERIANA (Graebn.) Rehd.
242387 (5420) Shrub, 2-3' tall; leaves
ovate, 1-1½" long; flowers 1" long,
violet pink. China. Cuttings from 1.
ABELIA SPATHULATA Sieb. & Zucc.

ABELIA SPATHULATA Sieb. & Zucc.
242388 (5433) Shrub 4-6' tall; leaves
broadly ovate, lustrous green above;
flowers pinkish white. Japan. Cuttings
from 1.

ABELIA TRIFLORA R. Br.

Largest of the abelias. Deciduous shrub
of vigorous erect habit to 12' tall;
leaves to 3" long; flowers fragrant, pinkish white. Showy in flower, and the persistent calyces attractive in fruit.
Himalayas.
242389 (5429) Cuttings from 1.

ABELIA ZANDERI (Graebn.) Rehd. 242390 (5427) Deciduous shrub, 10-15' tall; leaves ovate, acuminate, 2-3" long. China. Cuttings from 1.

242921 (5842) Cuttings from 67.

ABIES BALSAMEA (L.) Mill. 'NANA'
244640 Pinaceae. Habit of var. hudsonia
but the leaves not straight, smaller, the
edges yellowish. Garden origin. Plant
from 80.

ABIES NEBRODENSIS (Lojac.) Mattei 237827 (3584) Evergreen tree. Sicily. Now rare. Cuttings from 10.

ABIES NUMIDICA De Lannoy 'PENDULA' 238008 (3606) Evergreen tree, the branches pendulous. Garden origin. Cuttings from 2.

ABIES PINSAPO Boiss. 'PYRAMIDATA'
238009 (3603) Distinguished by the pyramidal shape, the branches dense all
ascending. Garden origin. Cuttings from 2.

ABIES RECURVATA Masters
238010 (3591) Forms a noble pyramidal tree
to 50' tall, with lustrous dark green recurved needles. Western China. Grown under
Rock 15087. Cuttings from 2.

ABUTILON HYBRIDUM Voss 'GOLDEN FLEECE'
242060 (5182) Malvaceae. Shrub with grapelike leaves 4-5" long; flowers bellshaped, yellow. Garden origin. Cuttings
from 73.

ABUTILON INSIGNE Planch.
242307 (5399) Shrub 6-8' tall; leaves
cordate-acuminate, 4-6" long, wavytoothed, lustrous green above, pubescent.
Colombia. Cuttings from 1.

ABUTILON MEGAPOTAMICUM St. Hil. & Naud. 242308 (5394) Handsome, weak-stemmed small shrub, the branches drooping; leaves ovate, cordate, smooth, dentate, 2-3"

long; flowers to 2" long fuschialike, with yellow petals and a red calyx. Fine in hanging basket. Brazil. Cuttings from 1.

ABUTILON 'RED ASHFOLD'

242310 (5388) Large shrub, 8-15' tall;
leaves ovate, 3-lobed, acuminate; flowers
bell-shaped, pendulous on long pedicels,
orange-red. Very floriferous. Garden
origin. Cuttings from 1.

ABUTILON 'SOUVENIR DE BONN'
242309 (5409) Leaves deeply 5-lobed with
white margins; flowers orange-red, drooping on long lax pedicels. Garden origin.
Cuttings from 1.

ACACIA CARDIOPHYLLA A. Cunn.
241403 (5022) Leguminosae. Leaves twice
pinnate, the second pinnae very small;
small leaves extremely fernlike. New South
Wales, Australia. Cuttings from 3.

ACACIA CIBARIA F. v. Muell. 241874 (5007) Evergreen, much-branched shrub, 6' tall; leaves narrowly linear, silvery; flowers yellow. Australia. Seeds from 33.

ACACIA DEALBATA Link 'MIRANDOLE'
241208 (4797) Evergreen tree; grown for
the finely divided, dark green lustrous
leaves; tolerates only acid soil; selection by the French acacia growers and considered to be outstanding. Garden origin.
Cuttings from 3.

ACACIA HORRIDA Willd.
241873 (5006) Cape Gum Tree. Small spiny
tree, 20' tall; inflorescence ball-shaped,
bright yellow. South Africa. Seeds from
33.

ACACIA HOWITTII F. Muell.

Small tree to 20' tall; leaves 1-2" long, 1/4" wide; flowers yellow. Spring. Grown for the soft, fernlike foliage. Much grown on the French Riviera as a florist's foliage plant. Australia.

241349 (4975) 'CLAIR DE LUNE'. Selection grown by French growers for the reddish tinged foliage.

241850 (4992) Seeds of unselected form from 5.

ACACIA PENDULA A. Cunn. ex G. Don 241093 (4638) Branches pendulous; leaves and branches silvery. Often grown over iron framework in Riviera gardens. Australia. Cuttings and seeds from 27. 241207 (4801) Cuttings from 3. 241482 (4639) Seeds from 27.

ACANTHOPANAX HENRYI (Oliv.) Harms
240677 (4064) Araliaceae. Makes a robust
bush to 10' tall; leaflets 4-5" long.
The spherical clusters of persistent juicy
black fruit are striking. Central China.
Cuttings from 6.

ACANTHOPANAX TRIFOLIATUS (L.) Voss
239991 (3924) A sprawly somewhat scandent
shrub to 20' tall with lustrous trifoliate leaves and spiny stems; makes an

<sup>&</sup>lt;sup>6</sup> Origin of each collection cited by number. See list of collecting localities p. vii.

attractive scrambler for a sunny wall.
Himalayas, China, Philippines. Cuttings
from 7.

ACER SPP.

243232 (6015) Aceraceae. Deciduous tree, 30' tall. Probably one of George Forrest's introductions from China. Seeds from 9.

ACER ACUMINATUM Wall.

239674 (3895) Deciduous tree to 20' tall; leaves 3-lobed, 2-4" long. Himalayas. Cuttings from 8.

ACER CAESIUM Wall.

237918 (3588) Small deciduous tree, with smooth bark; an attractive large-leaved maple. Himalayas. Cuttings from 10.

maple. Himalayas. Cuttings from 10.

ACER DAVIDII Franch. 'ERNEST WILSON'
243236 (6006) Deciduous tree to 30' tall
with smooth, green bark; leaves unlobed,
5-6" long; an extremely variable and
handsome maple. China. Seeds from 9.

ACER FLABELLATUM Rehd.

243231 (6017) Closely allied to Acer campbellii of the Himalayas and should be considered a geographical variant of it. Deciduous tree to 30' tall; the twigs with smooth white-striped bark; leaves about 6" wide, usually 7-lobed, the veins prominent; a handsome and desirable maple with somewhat the aspect of A. palmatum but with leaves twice the size. Yunnan, China. Seeds from 9. 243233 (5954) Grown under Forrest 29011. China. Seeds from 11.

ACER GROSSERI Pax

243234 (5946) Closely allied to A. davidii, but differs in the lobed leaves. Leaves shallowly 5-7 lobed, about 6" long, long-petiolate; fruit on pendant racemes 4-5" long. Central China. Grown from a Kingdon-Ward introduction. Seeds from 11.

244985 Seeds from 11.

ACER GROSSERI var. HERSII (Rehd.) Rehd. 243235 (5969) Differs from the typical form of the species in having elongate-acuminate lateral lobes as long as the middle lobe. Honan, Hupeh, Anhwei and Chekiang, China. Grown under Kingdon-Ward 109. Seeds from 11.

ACER SIKKIMENSE Mig.

242266 (5328) Deciduous small tree; leaves ovate, shallowly dentate to sinuate, the petioles reddish, the bark smooth, white-striped; handsome. Himalayas. Cuttings from 1.

ACHIMENES COCCINEA (Scop.) Pers. (A. rubra)
241894 (5117) Gesneriaceae. Perennial
to 1' tall, with downy stems; leaves 1-2"
long, 1/2" wide, downy, green above,
red-veined below; flowers orange-red,
1/2" across. Summer. Handsome in baskets.
Guatemala. Plants from 13.

ACHIMENES LANATA Hanst.

241602 (5052) Attractive rhizomatous perennial 6" tall with white woolly leaves beneath; flowers light blue.
Mexico. Plants from 12.

ACRODON SUBULATUS (Haw.) N. E. Br. (4666) Aizoaceae. South Africa. Cuttings from 3.

ADENANDRA UMBELLATA Willd. (Diosma)
241229 (4803) Rutaceae. Low, evergreen
shrub; leaves small, heathlike, 1" long;
requires a peaty soil; handsome and
desirable. South Africa. Cuttings
from 3.

ADENIUM OBESUM Balf.

242545 (5573) Apocynaceae. Fleshystemmed shrub; leaves tufted at the ends of the branches; flowers pink; very attractive. Tanganyika. Cuttings from 28.

ADENOCARPUS ANAGYRIFOLIUS Coss. & Bal. 241350 (4977) Leguminosae. Deciduous shrub, 7' tall; leaves 3-foliate, glaucous; flowers yellow; floriferous. Midsummer. Morocco. Cuttings from 57.

ADENOCARPUS COMPLICATUS (L.) J. Gay
238759 (3779) Shrub 4-6' tall, muchbranched; leaves 3-foliate, small;
flowers yellow, streaked red; in open
rocky meadows near the summit of the
Serra do Caramulo, Alt. 2400', PORTUGAL.
April 6, 1957. Cuttings.

ADHATODA VASICA Nees

238876 (3751) Acanthaceae. Evergreen shrub, 6-8' tall; flowers white, redstriped; handsome. India. Cuttings from 13.

ADROMISCHUS

Crassulaceae. Low succulent herbs, usually not over 3-4" tall, much-branched and forming large mats; leaves often spathulate or wedge-shaped, undulate, often maculate or marbled in various patterns; flowers small greenish to reddish; related to Cotyledon. Desert plants of South Africa.

ADROMISCHUS CARYOPHYLLACEUS (Burm. f.) Lem. (4245) Cuttings from 75.

ADROMISCHUS CLAVIFOLIUS (Haw.) Lem. (4448, 4450) Cuttings from 3.

ADROMISCHUS FESTIVUS C. A. Sm. (4204, 4447) Cuttings from 3.

ADROMISCHUS HALESOWENSIS (Poelln.) Uitew. (4215) Cuttings from 75.

ADROMISCHUS HOERLEINIANUS (Dtr.) Poelln. (4195) Southwest Africa. Cuttings from 75.

ADROMISCHUS MAMMILLARIS (L.f.) Lem. (4211, 4438) Cuttings from 3.

ADROMISCHUS MARIANAE (Marlth.) Bgr. (4449) South Africa. Cuttings from 3.

ADROMISCHUS PACHYLOPHUS Sm. (4210) Cape Province, South Africa. Cuttings from 75.

ADROMISCHUS POELLNITZIANUS Werd.

(4446) Cuttings from 3.

(4446) Cuttings from 3.

ADROMISCHUS SCHAEFERIANUS (Dtr.) Bgr.
(4193) South Africa. Cuttings from 75.

ADROMISCHUS SCHOENIANDII (Phillips) Poelln.
(4196) South Africa. Cuttings from 75.

ADROMISCHUS SPHENOPHYLLUS (Bak.) Sm.

(4534) Cuttings from 3.

(4534) Cuttings from 3.

ADROMISCHUS SUBPETIOLATUS Poelln.

(4212) Cape Province, South Africa. Cuttings from 75.

Cuttings from 75.

ADROMISCHUS TRIFLORUS (Thunb.) Bgr.

(4214) Cuttings from 3.

(4437) Cuttings from 75.

ADROMISCHUS TRIGYNUS (Burch.) Poelln.

(4205) Cuttings from 75.

(4445) Cuttings from 3.

(4445) Cuttings from 3.

AEONIUM Webb & Berth.

Crassulaceae. Herbs or subshrubs with succulent foliage; leaves usually in rosettes, fleshy; flowers yellow, whitish, or pink; some of the larger sorts are very handsome in pots but all are tender. Related to Sempervivum. Canary Isls., Madeira, Cape Verde Isls., Morocco, and Abyssinia.

N. Mexico, Mexico. Plants from 15.

AICHRYSON DICHOTOMUM (DC.) Webb & Berth.

Crassulaceae. Plant about 14" tall; leaves succulent, densely hairy; flowers white.

241021 (4420) Cuttings from 33.
241022 (4420) Seeds of P.I. 241021.

ALLIUM NIGRUM L.
240525 (4013) Liliaceae. Handsome orman Abyssinia.
AEONIUM TORTUOSUM (Ait.) Bgr.
Canary Islands. Abyssinia.

(4391) Cuttings from 75. (4517) Cuttings from 3.

AEONIUM WEBBII C. Bolle

(4763) Cape Verde Islands. Cuttings from ALLOPLECTUS VITATTUM Lindl. & André

AERANGIS MODESTA (Hook. f.) Schltr. 242684 (5671) Orchidaceae. Ephiphyte.

Madagascar. Plants from 28.

AERANTHES SPP.

242783 (5716) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

AERANTHES RAMOSA Rolfe

242685 (5682) Epiphyte. Madagascar. Plants from 28.

AESCHYNANTHUS BRACTEATUM Wall. (Trichosporum) 241268 (4843) Gesneriaceae. Epiphyte. Assam. Cuttings from 3.

AESCULUS HIPPOCASTANUM L. 'LACINIATA' Hippocastanaceae. Deciduous tree, 30-40'; leaflets narrow, deeply incised. Ornamental form with fernlike foliage. Garden origin.

237919 (3589) Cuttings from 10. 240524 (4017) Cuttings from 17. AGAPANTHUS ORIENTALIS Leighton 'TRUDY' 242517 (5605) Liliaceae. Distinguished by the very dark blue, more or less pendulous flowers. Awarded a First Class Certificate flowers. Awarded a First Oldes of from the Royal Horticultural Society, London, August 1957. Very fine. Bulbs from 28.

AGAPETES SPP.

quite translucent, 3/4" long; berries deep red to maroon; attractive with interesting colorful frult; required cool moist climate. Grown under Forrest 26585. China. Cuttings from 9. 243321 (6020) Seeds of P.I. 24330 AGAPETES BUXIFOLIA Nutt. ex Hook. f. 243321 (6020) Seeds of P.I. 243308.

243953 (6163) Erect, evergreen shrub, about 5' tall: leaves small boxwoodlike, oval-oblong, bright green; flowers bright red, about 1" long, tubular, waxlike; beautiful shrub for a cool, moist climate. Acid soil. Bhutan. Cuttings from 14.

AGAVE PARRYI Engelm.

242661 (5643) Amaryllidaceae. Trunkless; leaves to 10' long and 4" wide, bloomy, prickly-margined; flower stalk to 16' long, the flowers creamy-yellow. Ariz long, the flowers creamy-yellow. Arizona, N. Mexico, Mexico. Plants from 15.

240525 (4013) Liliaceae, Handsome ornamental onion; leaves dark green, 6" long and 2" wide, more or less recurved; flowers umbellate, white, terminal on the tall scapes, 24-30" tall. Mediterranean. Bulbs sent from 16.

(4479) Gesneriaceae. Shrubby to 2' tall; leaves 6" long, 3" wide, rough-hairy above, silvery green along the midrib, the lower surface reddish; flowers redpurple; very showy. Peru. Cuttings from 3.

ALLUAUDIA Drake

Didiereaceae. Shrubs or trees to 30' tall. with succulent, usually with very spiny stems and branches; leaves small, often round, fleshy; flowers small. Deserts of southwestern Madagascar.

ALLUAUDIA SPP.

(4573) Cuttings from 3.

ALLUAUDIA COMOSA Drake

(4142) Cuttings from 3.

(4574) Cuttings from 75.

ALLUAUDIA DECARYI

(4565) Cuttings from 3.

(4601) Cuttings from 3.

ALLUAUDIA DUMOSA Drake

(4602) Cuttings from 3.

ALLUAUDIA HUMBERTII Choux

(4576) Cuttings from 3.

ALLUAUDIA PROCERA Drake

(4609) Cuttings from 3.

ALMEIDA RUBRA St. Hil.

240434 (4009) Rutaceae. Large evergreen shrub to 12' tall; leaves oblong acumi-243308 (6019) Ericaceae. Scrambling nate; flowers pink. Attractive. Brazil. evergreen shrub; flowers whitish pink, Cuttings from 17.

ALNUS ORIENTALIS Decne.

238011 (3598) Betulaceae. Lofty deciduous tree, 50'. Asia Minor. Cuttings from 2.

ALOCASIA CUCULLATA Schott

242013 (5175) Araceae. Handsome foliage plant with lustrous, deep green leaves 12-14" long. East Indies. Plants from 19.

ALOCASIA MACRORHIZA Schott 'VARIEGATA'
241446 (5039) A striking foliage plant
with leaves 4-5' long with the leafblades variously mottled and blotched
white. Stone-house. Ceylon to the East
Indies. Plants from 18.

ALOCASIA PORTEI (Schott) Engl. & Becc.

(Schizocasia)

242026 (5174) Giant perennial herb with deeply pinnatifid leaves 10-15' long, lustrous green. Very striking; requires open ground for best performance. Philippines. Plants from 19.

ALOCASIA WAVRINIANA Mast.

242014 (5173) Rhizomatous perennial with deeply dentate-auriculate metallic-green leaves. Stove-house. Celebes. Plants from 19.

ALOE AFRICANA Mill.

239471 (3887) Liliaceae. Stem sometimes to 20' tall; leaves sword-shape, about 20" long, bloomy, forming a dense rosette at the top of the stem, the margins prickly; flowers bright yellow, tipped with green, much recurved; handsome pot plant. South Africa. Seeds from 3.

ALOE ALBIFLORA Guill.

(4629) Stemless; leaves about 6" long. Madagascar. Cuttings from 3.

ALOE BAKERI Scott-Elliott

(4627) Mostly stemless; leaves in rosettes, 4-5" long. Madagascar. Cuttings from 3.

ALOE ECHLONIS Salm-Dyck (A. claviflora)
239472 (3886) Stem very short; leaves
1' long, blue-green, forming a rosette,
the margin with whitish, horny teeth;
flowers orange-red. South Africa. Seeds
from 3.

ALOE PIENAARII Pole-Evans

239473 (3885) South Africa. Seeds from 3.

ALOE SUZANNAE R. Decary

(4345a) Stems 10-12' high, usually unbranched; leaves subcylindric, brownish; unusual species Southwestern Madagascar. Cuttings 75.

ALOE THRASKII Bak.

239474 (3884) Stems unbranched, the leaves 2' long, smooth, brown-tipped, prickly on the margin; flowers yellow; a rare species. Orange Free State, South Africa. Seeds from 3.

ALTAMIRANOA Rose

Crassulaceae. Low, much-branched, perennial succulents, often shrubby at the base, usually intermediate in habit between <a href="Sedum">Sedum</a> and <a href="Echeveria">Echeveria</a>, but more sedum-like. <a href="Mexico">Mexico</a>.

ALTAMIRANOA ERICHOIDES (Rose) Jacobs Oaxaca, Mexico.

(4253) Cuttings from 75. (4463) Cuttings from 3.

ALTAMIRANOA LEVIS (Rose) E. Walth. (4700) Mexico. Cuttings from 3.

ALYXIA DAPHNOIDES A. Cunn.

242311 (5375) Apocynaceae. Evergreen shrub; leaves verticillate, 1/2-1" long, lustrous green above, mucronate; flowers white, fragrant, Norfolk Islands. Cuttings from 1.

AMARYLLIS BELLADONNA L.

238946 (3778) Amaryllidaceae. Escaped in moist woodland near Vouzela, Serra do Caramulo, PORTUGAL. April 6, 1957. Bulbs.

AMICIA ZYGOMERIS DC.

242922 (5847) Leguminosae. Shrub 6-8' tall; leaves divided, the leaflets obcordate, bright green; stipules reddish; flowers yellow with a dash of purplish. Attractive. Stands some frost. Mexico. Cuttings from 48.

AMPELOCISSUS LAZA

(4592) Vitaceae. Cuttings from 3.

ANACAMPSEROS

Portulacaceae. Low desert succulents from Southwest and South Africa; leaves small, fleshy, densely crowded, usually silvery; flowers relatively large, 1/2-1" across, white to red.

ANACAMPSEROS SPP.

(4201, 4243, 4244) Cuttings from 75.

ANACAMPSEROS BAESECKII Dtr.

(4435) Southwest Africa. Cuttings from 3.

ANACAMPSEROS CRINITA Dtr.

(4436) Southwest Africa. Cuttings from 3.

ANACAMPSEROS DEPAUPERATA (Bgr.) Poelln. (4202) Cape Province, South Africa. Cuttings from 75.

ANACAMPSEROS GRACILIS Poelln.

(4254) Cape Province, South Africa. Cuttings from 75.

ANACAMPSEROS HERREANA Poelln.

(4434) Cuttings from 3.

ANACAMPSEROS SCHMIDTII (Bgr.) Poelln.

(4433) Southwest Africa. Cuttings from 3.

ANACAMPSEROS TOMENTOSA var. MARGARETAE Dtr. (4432) Southwest Africa. Cuttings from 3.

ANAGYRIS FOETIDA L.

238760 (3763) Leguminosae. An ashy-grey deciduous bush, 4-5' tall; leaves 3-foliate; flowers pea-shaped, yellow; the whole plant with a musty odor; hardy only south. Mediterranean region. Cuttings from 13.

ANCHOMANES' HOOKERI Schott (Pythonium)
242313 (5366) Araceae. Tuberous-rooted;
leaves pinnately divided at the top of
the 3' scape, the stalk green with
purple spots; very handsome foliage;
stove plant. Tropical Africa. Tubers
from 1.

ANDROPOGON DISTACHYOS L.

240313 (3990) Gramineae. Tufted peren-

nial to 3' tall, the spiklets plumelike; an elegant ornamental grass. Mediterranean region. Seeds from 7.

ANEMONE 'CRAEGH CASTLE'

244578 Ranunculaceae. Rhizome tuberouslike; leaves much-divided; flowers pure white, 2-3" across; a fine strain and extremely floriferous. Rhizomes from 78.

ANEMONE NEMOROSA L.

238519 (3651) Rhizomatous perennial;
flowers white; steep, rocky, oak-beech
woodland, along road C. 615 between
Riaño and Guardo, Picos de Europa, Prov.
Leon. SPAIN. March 17, 1957. Plants.

ANGRAECUM CALCEOLUS Thour.

242686 (5658) Orchidaceae. Epiphyte. Madagascar. Collected by L. Maurice Mason. Plants from 28. 242687 (5712) Another collection from the wild by L. Maurice Mason. Flowers 1/2" long, spray-type, in flower for several weeks. Plants from 28.

ANGRAECUM COMPACTUM Schltr.

242688 (5680) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

ANGRAECUM FILICORNU Thour. 242689 (5618) Epiphyte. Col

242689 (5618) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

ANGRAECUM HUMBLOTII (Finet) Summerh. 242690 (5728) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28. ANGRAECUM OBESUM Perr.

242691 (5717) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plant from 28.

ANSELLIA GIGANTEA var. NILOTICA (Bak.) Summerh. 242778 (5685) Orchidaceae. Epiphyte. Tanganyika. This clone received an Award of Merit from the Royal Horticultural Society, London, August 1957. Plants from 28.

ANTHURIUM DIGITATUM G. Don
238867 (3744) Araceae. A handsome foliage
species, the leaves deep green, lustrous,
leathery, digitately divided, 6-8" wide,
the petioles 2-3' long. Peru. Plants
from 13.

ANTHURIUM RADICANS C. Koch & A. Haage
240497 (4032) Dwarf, creeping rhizomatous perennial. Leaves deep green,
lustrous, cordate, acuminate, 2-3" long.
Excellent for hanging baskets in stovehouse. Brazil. Cuttings from 21.

ANTHURIUM SCANDENS Engl.
240614 (4050) Erect perennial, the leaves oblong, 3-4" long. Flowers inconspicuous.
Brazil. Plants from 22.

ANTHYLLIS HERMANNIAE L.

238761 (3747) Leguminosae. Much-branched evergreen grayish downy shrub, 2-4' tall, the branches spine-tipped; leaves narrow, linear; flowers yellow. Spring. Corsica. Cuttings from 13.

ANTIRRHINUM CALYCINUM Jacq.

239442 Scrophulariaceae. Seeds from 13.

ANTIRRHINUM GLUTINOSUM Boiss. & Reut.
242030 (5070) Perennial, much-branched,
24-30" tall; leaves very viscid; flowers
1/2" long, white to yellowish. Walls along
roadway, 9 mi. north of Granada, on the
road to Jaen, Prov. Granada, SPAIN.
August 2, 1957. Seeds.

ANTIRRHINUM LATIFOLIUM Mill.

238762 (3768) Biennial, 14" tall; flowers pink. Serra do Sicó, alt. 1200', near Ramalhaes, west of Pombal, south of Coimbra, PORTUGAL. April 5, 1957. Cuttings.

239365 (3835) Biennial to 3' tall; flowers chartreuse, mixed white. Talus slopes above the River Vésubie near Lantosque, Alpes-Maritime, FRANCE. April 28, 1957. Cuttings.

ANTIRRHINUM MAJUS L.

239443 Seeds from 13.

ANTIRRHINUM PARVIFLORUM Jacq. 239444 Seeds from 13.

ANTIRRHINUM TORTUOSUM Bosc ex Lam.
239992 (3922) Shrub to 4' tall; leaves
linear; flowers large, lavender-pink.
Showy. Western Mediterranean. Cuttings
from 7.

239993 (3922) Seeds of P.I. 239992. 241851 (5014) Seeds from 23.

APHYLLANTHES MONSPELIENSIS L.
239357 (3841) Fibrous-rooted perennial
forming dense clumps; leaves rushlike to
l' long; flowers an inch across, azure
blue, terminal on the scapes. Rock garden
plant; on steep rocky slopes, alt. 3000',
above Lantosque, Alpes-Maritime, FRANCE.
April 28, 1957. Plants.

APOLLONIAS CANARIENSIS Nees
238868 (3750) Lauraceae. A handsome evergreen tree to 20' tall, much-branched and
forming a round crown; leaves 1-5" long,
aromatic; would be useful as a street
tree in frost-free climate. Canary
Islands. Cuttings from 13.
240115 (3966) Cuttings from 7.

APONOGETON KRAUSEANUS Engl. 243879 Aponogetonaceae. Aquatic. Flowers white. South Africa. Plants from 72.

ARAUJIA SERICIFERA Brot.

238498 (3661) Asclepiadaceae. Twining
pérennial, evergreen climber; leaves
elliptic to ovate, shining green above;
flowers white, fragrant, an inch across;
pods the size of a double egg; an attractive climber for a pergola or porch,
in nearly frost-free climates. Midsummer. Peru. Cuttings from 24.
241098 (4636) Cuttings from 27.

ARBUTUS ANDRACHNE L.
241319 (4968) Ericaceae. Small evergreen
tree. Eastern Mediterranean. Cuttings
from 57.

ARBUTUS GLANDULOSA Mart. & Gal. 241351 (4982) Evergreen tree; leaves 6-8" long, glandular hairy, handsome. Mexico. Outtings from 57. ARDISIA HUMILIS Vahl
240753 (4085) Myrsinaceae. Shrub to 10'
tall; leaves obovate, 6-8" long,
leathery, acute; flowers rose-pink in
umbels; fruit berrylike, black. East
Indies. Cuttings from 20.
241202 (4085a) Seeds of P.I. 240753.

ARGYREIA HIRSUTA Wight & Arn.

242314 (5363) Convolvulaceae. Rampant climber; leaves broadly cordate, ovate, hairy; flowers lavender, 3-4" across; showy flowering vine. Eastern India. Cuttings from 1.

ARGYRODERMA

Aizoaceae. Segregate of Mesembryanthemum; stemless succulent, forming clumps, each plant consists of 2 leaves, the upper side of which is flat, the back very convex. These are mimicry plants often much resembling the stones where the plants are growing. South Africa.

ARGYRODERMA LUCKHOFFII L. Bolus (4166, 4381) Cuttings from 75.

ARIDARIA DELA L. Bolus (Mesembryanthemum)
(4651) Aizoaceae. Cape Province, South
Africa. Cuttings from 3.

ARIDARIA NOCTIFLORA Schwant.
(Mesembryanthemum)

(4654) Cuttings from 3.

ARIDARIA UMBELLIFLORA Schwant.

(Mesembryanthemum)
(4781) Cuttings from 3.

ARISAEMA FARGESII Buchet
241138 (4856) Araceae. Rhizomatous
perennial; leaves deeply 3-lobed. Western
China. Rhizomes from 3.

ARISTEA CORMYBOSA Benth. & Hook. f. (Nivenia

cormybosa)

243983 (6162) Iridaceae. Shrubby; leaves flat, 6-8" long, 2-ranked; flowers bright blue. Attractive. South Africa. Cuttings from 14.

ARISTOLOCHIA ARGYRONEURA Gentil
242315 (5413) Aristolochiaceae. Rampant
tropical scrambler; leaves cordate, 3-4"
long, 3" wide, lustrous, the base of the
blade red at petiole attachment, the
veins whitish; stems green; the foliage
handsome. Garden origin. Described originally from the Bruxelles botanic garden.

Cuttings from 1

ARISTOLOCHIA ELEGANS × GRANDIFLORA
241404 (5017) Vigorous tropical vine;
flowers brownish, whitish reticulate,
opening quite flat, barely convave, 2-3"
across. Garden origin. Cuttings from 26.

ARISTOLOCHIA WESTLANDII Hemsl.

242316 (5384a) Vigorous tropical climber to 20' tall; leaves 6-8" long, 1-2" wide, somewhat leathery; flowers to 6" long, brown to greenish yellow. Tal-mo-Shan, China. Cuttings from 1.

ARISTOTELIA CHILENSIS (Mol.) Stuntz

(A. macqui)

238763 (3770) Elaeocarpaceae. Handsome

evergreen small tree to 15' tall; leaves 2-4" long, lustrous green; flowers small, white. Chile. Cuttings from 13.

ARTHROCEREUS CAMPOS-PORTOI (Werd.) Backbg. (4306) Cactaceae. Segregate of Trichocereus. Brazil. Cuttings from 75.

ARUNDINARIA SPP.

240615 (4061) Gramineae (Bambusae). Rank-growing bamboo to 8' tall with yellowish variegate foliage. Plants from 22.

241895 (5127) Rhizomatous perennial; makes an interesting 12" tall pot plant with yellowish variegated foliage. Attractive. Plants from 13.

ASCLEPIADACEAE (undetermined)
240768 (4087) Evergreen subshrub; leaves
elliptic, shiny green above. Cuttings

from 20.

(4613) African succulent. Cuttings from 30. ASPHODELUS ALBUS Mill.

238745 (3641) Liliaceae. Tuberous-rooted perennial; flowers on 2-3' scapes, white; leaves tufted, basal, 1-1/2" wide; steep barren slopes on hills above Pesajes de San Juan, near San Sebastian, Prov. Guipuzcoa, SPAIN. March 14, 1957. Roots.

ASPHODELUS CERASIFERUS J. Gay, (A. ramosus)
239372 (3838) Asphodel. Tuberous-rooted
perennial 4-5' tall; leaves mostly basal,
sword-shaped; flowers white; on open
rocky, south-facing mountain slopes.
Peira Cava, alt. 4800', above Menton,
Alpes-Maritime, FRANCE. April 28, 1957.
Plants.

ASPLENIUM ONOPTERIS L.

238681 (3694) Polypodiaceae. Black Spleenwort. Densely tufted, the fronds to 10" long, evergreen, much-divided; abundant on moist north-facing wooded slopes above roadside, alt. 1800', between Covilha and Manteigas, PORTUGAL. March 25, 1957. Plants.

ASTER SPP.

Compositae. Plants purchased from John Waterer, Sons & Crisp, Ltd., The Floral Mile, Twyford, Berks., England. New English introductions. Dwarf hybrid asters. Parentage unknown. 243939 'AUTUMN PRINCESS' - pale lavender blue. 243946 'LADY IN BLUE' - semi-double, clear blue; 10". 243950 'ROSE BONNET' - double, mass of misty pink flowers.

of misty pink flowers. ASTER NOVI-BELGII L.

Plants purchased from John Waterer, Sons & Crisp, Ltd., The Floral Mile, Twyford, Berks., England. Collection of Michaelmas Daisies. New English introductions of outstanding merit. 243938 'ANGELA PEEL' - double shell pink; 2-1/2'. 243940 'BLANDIE' - large trusses, purest

white; 4'.

243941 'CHEQUERS' - rich violet purple;

243942 'CHORISTER' - glistening white flowers, good habit; 2-1/2-3'.

243943 'CRIMSON BROCADE' - intense red, fully double flowers.

243944 'FESTIVAL' - soft orchid purple, very attractive color and habit; 3-1/2'. 243945 'GAYBORDER ROYAL' - bright rosy

crimson, semi-double; 3'. 243947 'MARIE BALLARD' - with powdery blue, double flowers; plant of great

merit; 3'.

243948 'MISTRESS QUICKLY' - deep purpleblue flowers; 3-1/2'.

243949 'PICTURE' - semi-double, rich reddish carmine, with golden center; plant of great attraction; 4'.

243951 'TWINKLE' - semi-double, cyclamenpurple; erect bushy habit, 3'.

243952 'WINSTON CHURCHILL' - compact bushy habit, masses of ruby red flowers; 2-1/2'.

ASTROLOBA CONGESTA (Salm.) Uitew.

(4659) Liliaceae. Closely related to

Haworthia but the stems more elongated.

Cape Province, South Africa. Cuttings
from 3.

ATHYRIUM FELIX-FEMINA (L.) Roth
238682 (3695) Polypodiaceae. Lady Fern.
Deciduous, densely tufted rhizomatous
perennial with fronds 12-15" long, muchbranched and dissected; abundant on moist
north-facing wooded slopes above roadside
alt. 1800', between Covilha and Mateigas,
PORTUGAL. March 25, 1957. Plants.

AYLOSTERA PSEUDODEMINUTA (Backbg.) Backbg. (4314a) Cactaceae. Argentina. Cuttings from 75.

AYLOSTERA PSEUDODEMINUTA var. ALBISETA Backbg.

(4491) Argentina. Plants from 3.
AZARA INTEGRIFOLIA R. & P. 'VARIEGATA'
242391 (5418) Flacourtiaceae. Evergreen
shrub, 2-3' tall; leaves ovate, 1-2"
long with yellowish margins tinged pink;
handsome variegated shrub. Garden origin.
Cuttings from 1.

AZARA MICROPHYLLA Hook. f. 'VARIEGATA'
242846 (5771) Evergreen shrub, 6-8'
tall; leaves 1/2 -1" long, broadly
ovate, 1/2" wide, green with yellowish
variegation. Garden origin. Cuttings
from 36.

AZARA (Arechavaletaia) URUGUAYENSIS (Speg.)
Sleumer
240304 (4000) Flacourtiaceae. Evergreen
shrub to 6' tall; leaves 2" long, 1"
wide, elliptic. Uruguay. Cuttings from 25.

В

BACCHARIS ROSMARINIFOLIA Hook. & Arn. 240109 (3967) Compositae. Small evergreen shrub. Foliage with the aspect of rose-mary. Chili. Cuttings from 7.

BALLOTA ACETABULOSA Benth.
239364 (3832) and 241024 (4424) Labiatae.
White-woolly herbaceous perennial to 2'
tall; flowers white; good foliage plant.
Greece. Cuttings from 33.

BANKSIA GRANDIS Willd.

241928 (5152) and 247802 Proteaceae. Large shrub to tree; leaves 1' or more long; flowers yellowish in conelike spikes 8-12" long. Handsome and unusual. Australia. Cuttings and plants from 30.

BANKSIA INTEGRIFOLIA L. f.

241310 (4949) Small evergreen tree; leaves
3" long, silvery beneath, green above, the
juvenile leaves strongly serrate, the matures ones entire. Cuttings from 33.

241914 (5112) Evergreen tree, 50' tall;
leaves oblong, green above, white below;
inflorescence conelike, about 3-4" long;
flowers yellow. Grows especially well at
Sintra, near Lisbon where it naturalizes
in the decomposed granitic soils. Aus-

BANKSIA LATIFOLIA R. Br. 241094 (4640) Evergreen much-branched shrub to 8' tall; leaves tough and leathery, 3-6" long; flowers creamy white on a thick conelike axis 5-6" long; handsome and curious plant. Native of eastern Australia. Cuttings from 27.

tralia. Cuttings from 37.

BANKSIA VERTICILLATA R. Br. 240754 (4076) Evergreen shrub, 8-10' tall; leaves green above, silvery-white beneath; inflorescence conelike, the flowers mauve. Western Australia. Cuttings from 20.

BARNARDESIA SPINOSA L. f. 241209 (4783) Compositae. Spiny, evergreen shrub; leaves dark green, lustrous and somewhat fleshy. Tropical America. Cuttings from 3.

BEAUFORTIA SPARSA R. Br. 243885 (6125) Myrtaceae. Heathlike evergreen shrub, 6' tall; flowers scarlet. W. Australia. Showy. Cuttings from 47.

BEGONIA SPP. Begoniaceae. 242574 (5559) Rhizomatous, 12-14" tall; leaves 2-3" long, serrate, glaucous above, the petioles reddish. Grown under L. Maurice Mason 74. British Guiana. Cuttings from 28. 242575 (5570) Rhizomatous; stems 14-16" tall, bronzish; leaves 2-3" long, the veins strongly impressed above, flowers pinkish. Collected by L. Maurice Mason, British Guinea. Cuttings from 28. 242576 (5556) Rhizomatous; leaves nearly orbicular 8-10" long, fleshy, deep green, hairy above, red velvety-hairy below; foliage striking. San Salvador. Cuttings 242577 (5513) Rhizomatous; low plant, 3-4" tall; leaves deep lustrous green,

reddish on the petioles. Plants from 28.

242578 (5550) Rhizomatous; leaves a foot or more long, oblique, lustrous dark green above. Sent originally from Costa Rica by Mr. Lankester. Cuttings from 28.

BEGONIA ACETOSA Vell.

241210 (4835) Brazil. Cuttings from 3.

BEGONIA AUGUSTAE Irmscher

242546 (5558) Perennial; leaves 4-6" long, bronze green above, lustrous, reddish below. Grown under L. Maurice Mason 145.
New Guinea. Cuttings from 28.

BEGONIA BARKERI Knowl. & Westc.

241211 (4832) Rank growing, stems erect, thickish, little-branched; leaves peltate, oblique, shallowly dentate-lobed, dull green above. Mexico. Cuttings from 3. 242547 (5572) Cuttings from 28.

BEGONIA 'C. P. RAFFILL'

242580 (5540) Leaves very oblique, 4-5" long, sinuate-dentate, silvery in patches between the veins, green along the veins, uniformly red below. Garden origin. Handsome. Cuttings from 28.

BEGONIA CAROLINIAEFOLIA Regel 242548 (5557) Stem thick, trunklike; leaves digitately divided into about 7leaflets; flowers deep pink. Winter. Mexico. Cuttings from 28.

BEGONIA CATHAYANA Hemsl.

252549 (5542) Fibrous-rooted perennial, velvety-hairy throughout, 2-3' tall; leaves oblique 4-6" long, dark green above, with red veins, blood red below; flowers vermilion, Autumn. Elegant foliage plant. China. Plant from 28.

BEGONIA CATHAYANA x B. IMPERIALIS
241212 (4820) Garden origin. Cuttings
from 3.

BEGONIA CONVOLVULACEA A. DC.

241213 (4835) Bushy or of scandent habit, 5-6' long with aerial roots; leaves unevenly lobed, 5-6" wide, dark green; flowers white. Spring. Brazil. Useful for hanging baskets. Cuttings from 3. 242551 (5571) Cuttings from 28.

BEGONIA COOPERI C. DC.

242550 (5511) Fibrous-rooted perennial to 2' tall; leaves strongly oblique, 2-3" long, heavily veined. An erect, rank growing plant with elm-shaped leaves. Costa Rica. Cuttings from 28.

BEGONIA CRISPULA Brade

242662 (5638) Leaves nearly orbicular, 3-4" long, strongly plaited above, lustrous green; dwarfish plant with handsome leaves. Espirito Santo, Brazil. Cuttings from 15.

BEGONIA DAEDALEA Lem.

242552 (5553) Rhizomatous; 18-24" tall, much-branched; leaves strongly maculate, red and green, ciliate. Mexico. Cuttings from 28.

BEGONIA DREGEI Otto & Dietr.

242553 (5539) Perennial with more or less furrowed and angled stems; leaves strongly

oblique, 3-4" long, sinuate-dentate, with a lustrous metallic sheen, dark green above, reddish beneath. South Africa. Cuttings from 28.

BEGONIA EPIPSILA Brade

242554 (5579) 12-14" tall; leaves 4-5" long, lustrous green above, reddish below with rusty indument. Rio de Janeiro, Brazil. Cuttings from 28.

BEGONIA ERYTHROPHYLLA Neuman

240616 (4053) Rhizomatous; leaves kidneyshaped, thick, lustrous green above, reddish on the underside. Reputably of garden origin. Rhizomes from 22.

BEGONIA FAGIFOLIA Fisch.

242555 (5541) Fibrous-rooted, about 15" tall with creeping, more or less scrambling stems; leaves 2-3" long, oblique, lustrous green above and hairy; petioles and stems reddish; a good foliage begonia with beechlike leaves. Brazil. Cuttings from 28.

BEGONIA FERNANDO-COSTAE Irmscher 242581 (5563) Leaves reddish, velvety below, bronze green, hairy above; flowers white, the peduncles reddish; very attractive. Brazil. Cuttings from 28.

BEGONIA 'FIREFLUSH'

242582 (5576) Rhizomatous; leaves 12-18" long, the petioles reddish, pubescent, the blades oblique, dentate-sinuate, the margin bronze-green towards the periphery then bronze on the petiole attachment; flowers pink. Attractive leaves. Garden origin. Plants from 28.

BEGONIA FUSCA Klotzsch 'MACULATA'
241139 (4857) Garden origin. Cuttings from

BEGONIA 'GENERAL JACQUES'

241220 (4834) Garden origin. Cuttings from

BEGONIA GIGANTEA Wall.

241214 (4823) Rhizomatous; stems robust, 18-24" tall; leaves strongly oblique, acuminate, 8-10" long, deep green above. Himalayas. Cuttings from 3. 242556 (5567) Cuttings from 28.

BEGONIA GOEGOENISIS N.E. Br.

238723 (3734) and 241976 (5194) Rhizomatous; leaves peltate, more or less oblique, the upper surface light green, the veinlets depressed with ridges between, reddish. A handsome and unusual species. Sumatra. Plants from 30.

BEGONIA HERBACEA Vell.

241215 (4844) Brazil. Cuttings from 3.

BEGONIA INFLATA C. B. Clark

242557 (5555) Rhizomatous; stems succulent, erect, sparsely branched, reddish; leaves oblique, 6-10" long, deep green above; good foliage plant. Himalayas. Plants from 28.

BEGONIA × INGRAMII (B. fuchsioides × B. nitida) 242558 (5566) 18-25" tall, erect; leaves 2-3" long, serrate and wavy-margined, lustrous green above; flowers pink. Winter. Garden origin. Cuttings from 28.

BEGONIA 'LEMINSHI'

242559 (5562) Climbing. Garden origin. Cuttings from 28.

BEGONIA LUXURIANS Scheidw.

242317 (5378) Fibrous-rooted; 10-15' tall; leaves digitately compound, the petioles and base of leaflets reddish, deep green above, serrate. Grows best below 70° F. in summer. Magnificent plant when well-grown. Chile. Cuttings from 1. 242560 (5544) Cuttings from 28.

BEGONIA 'MADAM MONEYRON'

241141 (4853) Apparently a 'rex' type, or perhaps a hybrid of B. imperialis. Garden origin. Cuttings from 3.

BEGONIA MALABARICA Lam.

242561 (5547) Erect perennial; leaves oblique, 4-6" long, serrate-dentate, roughish, bright green above; veins reddish. India. Cuttings from 28.

BEGONIA MANICATA Cels ex Vis. 'VARIEGATA' 241293 (4867) Rhizomatous; leaves spottedwhite. Garden origin. Handsome. Cuttings from 3.

BEGONIA MANNII Hook. f.

242562 (5510) Fibrous-rooted; 2-3' tall; flowers coral pink, the stigmas very large, unusual. Tropical Africa. Cuttings from 28.

BEGONIA MAXIMA Klotsch

238947 (3786) Robust somewhat woody, about 4-5' tall, the stems deeply angled; flowers pink. Good bedding plant. Garden origin. Cuttings from 29.

BEGONIA MEXICANA Karst. & C. Cheval 241216 (4830) Mexico., Cuttings from 3.

BEGONIA 'MONSIEUR MONEYRON'

241142 (4863) Garden origin. Cuttings from 3.

BEGONIA NATALENSIS Hook.

242563 (5554) Perennial, much-branched; leaves dentate, oblique, 1-2" long, green above, reddish below; flowers white in great profusion. Natal. Cuttings from 28.

BEGONIA PHYLLOMANIACA Mart.

241140 (4854) Strong growing, thickstemmed perennial, 30" tall; leaves grapelike, more or less 3-lobed and dentate, white hairy, with viviparous leaflets along the main veins above, flowers white. A curious species. Brazil. Cuttings from 3.

242573 (5551) Cuttings from 28.

BEGONIA PRISMATOCARPA Hook.

242318 (5391) Rhizomatous, 3-4" tall; leaves ovate-acuminate; flowers deep yellow; pretty, diminutive species; needs almost pure leaf-mold to succeed; stovehouse species. Fernando Po, Africa. Plants from 1.

BEGONIA QUADRILOCULARIS Brade

242564 (5546) Rhizomatous, very robust, 30" tall; leaves 8-12" long, roughened,

serrate and dark green above, the veins raised below. Rio de Janeiro, Brazil. Cuttings from 28.

BEGONIA RAJAH Ridl.

Rhizomatous; leaves somewhat oblique, undulate-margined, plaited, the plaits reddish, the veins green, the petiole 6-8" long; flowers pink; striking plant for stove-house. Malaya.

242319 (5392) Cuttings from 1. 242565 (5533) Cuttings from 28.

BEGONPA REX Putz.

240527 (4014) Leaves blackish red, slightly mottled with a metallic sheen. A fine form. Garden origin. Plants from 16.

BEGONIA REX Putz. 'IRON CROSS'

241217 (4816) Leaves pustulate hairy, light green, blackish along the main veins; handsome and unlike other rex begonias, if really a rex. Introduced from the Botanical Gardens, Singapore by L. Maurice Mason. Comes true from seed. Rhizomes from 3.

BEGONIA RIGIDA Regel

242566 (5561) Form of the species. 242567 (5564) Typical form of the species. Rhizomatous perennial, 2' tall; leaves 4-5" long, lustrous green above. Brazil. Cuttings from 28.

BEGONIA 'RIPPLE ROSEA'

242583 (5552) Erect perennial, littlebranched; leaves oblique, 4-6" long, bright green and lustrous above; flowers deep pink, terminal; a good floriferous type. Garden origin. Cuttings from 28.

BEGONIA ROTUNDIFOLIA Lam.

242568 (5523) Rhizomatous; leaves 4-8" long, orbicular-cordate, wavy-margined, the petiole reddish; flowers white, pinktinged. West Indies. Cuttings from 28.

BEGONIA ROXBURGHII A. DC.

242569 (5569) Rhizomatous; leaves basal, the petioles 8-10" long, the blades 6-8" long, lustrous green above; flowers white, fragrant. Himalayas. Cuttings from 28.

BEGONIA RUBRO-VENIA Hook.

242570 (5565) Rhizomatous; stem erect, little-branched above; leaves long-petiolate, silvery maculate, shield-shaped; flowers white and pink. An attractive species. Bhutan. Cuttings from 28.

BEGONIA SERRATIPETALA Irmscher

241218 (4826) Fibrous-rooted perennial, much-branched from the base; leaves 3-4" long, undulate, crispate, deep bronze green above, reddish below. Collected by L. Maurice Mason. New Guinea. Cuttings from 3.

242571 (5560) Cuttings from 28.

BEGONIA ULMIFOLIA Willd.

242572 (5568) Fibrous-rooted; stems erect, little-branched; leaves elm-shaped, 3-4" long, lustrous green above. Colombia. Cuttings from 28.

BEGONIA VENUSTA King

241219 (4806) Malaya. Cuttings from 3.

BENCOMIA CAUDATA Webb & Berth.
238869 (3749) Rosacea. Small shrub, 4'
tall, very woolly, leaves of 7-13 leaflets,
1-2" long; flowers inconspicuous, attractive for the grayish, feathery foliage.
Canary Islands. Cuttings from 13.

BERBERIS SPP. (Collected as B. rugidicans.)
238640 (3629) Berberidaceae. Fine shrub
with red foliage in autumn. Seeds originally from China. Cuttings from 35.

BERBERIS × BRISTOLENSIS (possibly a hybrid of B. verruculosa 242663 (5600) Evergreen shrub, 3-4' tall; leaves ½-1¼" long, mostly ovate, lustrous green above, glaucous below, spiny-margined. Garden origin. Cuttings from 28.

BERBERIS × CHENAULTII Chen. (B. gagnepainii × B. verruculosa 238209 (3625) Evergreen shrub 4-5' tall. Cuttings from the original plant, 35.

BERBERIS GAGNEPAINII C. Schneid. 'TOTTENHAM'
242267 (5335) Evergreen shrub, 2-3' tall,
much-branched; stems spiny; leaves narrowly lanceolate, lustrous green above.
Garden origin. Good dwarf. Cuttings
from 1.

BERBERIS aff. JULIANAE
238210 (3618) Evergreen shrub, 6' tall;
leaves exceptionally thick. If actually
a form of <u>B. julianae</u>, it deserves wide
distribution in gardens. Cuttings from 35.

BERBERIS LEPIDIFOLIA Ahrendt
243806 (6081) Evergreen shrub, 4-5' tall;
branches arching; leaves linear, 1" long,
green above, glaucous below. Grown-under
Forrest 23614. Yunnan, China. Cuttings
from 14.

BERBERIS VALDIVIANA Phil.

242584 (5577) Evergreen shrub, 4-6' tall, spiny; leaves 2-3" long, elliptic, lustrous green above, mostly entire. Handsome. Chile. Cuttings from 28.

BERBERIS VEITCHII C. Schneid.

238641 (3615) Evergreen shrub with an arching habit. China. Cuttings from 35. BERGERANTHUS SPP.

(4186) Aizoaceae. South Africa. Cuttings from 75.

BERNARDIA GRANDIFOLIA Muell.-Arg. 240678 (4068) Euphorbiaceae. Guiana. Cuttings from 6.

× BERTONERILA 'HOUTTEANA'

242320 (5371) Melastomataceae. Thought to be a bigeneric hybrid of Bertolonia x Sonerila. Rhizomatous; leaves ovate to nearly round, glandular hairy above, strongly veined and suffused coral-pink throughout. Elegant foliage plant thriving best in almost pure leaf mold. Stove-house. Cuttings from 1.

BETULA MEDWEDIEWII Regel

238012 (3595) Betulaceae. Small deciduous tree, 20', the branches spreading. Caucasus. Cuttings from 2.

BIGNONIACEAE (undetermined)
241361 (4979) Deciduous tree, 40' tall;
leaves twice pinnate, fernlike; flowers
tubular, cream-yellow. Cuttings from 57.

BINCHAMIA (Haageocereus)

Cactaceae. With the habit of Trichocereus but the plant and flowers smaller, flowers nocturnal. Peru. Plants from 75.

BINGHAMIA ACANTHURA Vaup.

(4312)

BINGHAMIA TALARENSIS

(4220)

BINGHAMIA VERSICOLOR J. West (4303)

BINGHAMIA VERSICOLOR var. FLAVISPINA (4298)

BLECHNUM CHILENSE (Kaulf.) Mett.
243980 (6152) Polypodiaceae. Coarse rhizomatous perennial; fronds leathery, deep
green, to 3' long, pinnate; a fine ornamental fern. Plants from 31.

BOEHMERIA BILOBA Wedd.

239076 (3813) Urticaceae. Rather coarse perennial, 15-30" tall; leaves 3-6" long, bright green, roughened, often 2-3 lobed; of interest for the deeply lobed bright green leaves. Japan. Cuttings from 32.

BOEHMERIA MACROPHYLLA Don. 240752 (4086) Shrub, 2-3' tall, the stems, petioles, and leaf veins reddish. Flowers red, nearly 2" long. Mexico. Cuttings from 20.

BOLTONIA LATISQUAMA Gray
241952 (5137) Compositae. Rhizomatous
perennial, 5-6' tall, stiff and robust,
much-branched; leaves narrowly lanceolate,
2-4" long, glaucous; rays white. Cent.
United States. Autumn. Roots from 32.

BORZICACTUS

Cactaceae. Plants procumbent, cylindric; flowers orange or scarlet.

BORZICACTUS ROEZLII (Haage f.) Backbg. (4222) Cuttings from 75.

BORZICACTUS WEBSTERIANUS Backbg.

(4311) Ecuador. Cuttings from 75.

BOSEA AMHERSTIANA Hook. 'VARIEGATA'
240810 (4106) and 241397 (4989) Amaranthaceae. Shrub, more or less scrambling
unless cut back; leaves small, whitevariegated; quite handsome. Garden origin.
Cuttings from 5.

BOUGAINVILLEA GLABRA Choisy 'MAUD CHETTLEBOURG' 238764 (3766) and 241896 (5126) Bracts very large, magenta. Garden origin. Cuttings from 13.

BOURRERIA SUCCULENTA Jacq.

240028 (3938) Boraginaceae. Large shrub evergreen; leaves leathery; flowers greenish. West Indies. Cuttings from 7.

BOUVARDIA LONGIFLORA H.B.K. 243886 (6118) Rubiaceae. Perennial; flowers white, 2-3" long. Mexico. Cuttings from 47.

BOUVARDIA 'PINK GIANT'
243887 (6120) Inflorescence 4-5" across;

flowers deep pink, 3/4" wide; elegant for pot culture. Dutch origin. Cuttings from 47.

BOUVARDIA 'ROSALINDA'

243888 (6119) Flowers light salmon pink; elegant for pot culture. Dutch origin. Cuttings from 47.

BOWKERIA GERRARDIANA Harv.

241095 (4637a) Scrophulariaceae. Large evergreen shrub, 10-12' tall; leaves 2-6" long, 1-1½" wide; flowers white, pouch-like, the calyx viscid; attractive. South Africa. Cuttings from 27.

BREDIA TUBERCULATA (Guill.) Diels
242335 (5389) Melastemataceae. Perennial,
6-8" tall, spreading to form large clumps;
leaves ovate, acuminate, shiny green
above, purplish beneath; flowers pink.
Very attractive flowers. Baskets. Cool
house. W. China. Cuttings from 1.

BREXIA MADAGASCARENSIS Thour.

240029 (3949) Saxifragaceae. Large evergreen shrub 10-20' tall; leaves 6-8" long, leathery; flowers greenish white. Handsome foliage. Madagascar. Cuttings from 7.

BRUNFELSIA CALYCINA Benth.

242627 (5164) Solanaceae. Yesterday-Todayand Tomorrow Small much-branched evergreen tree or large shrub, 20' tall; flowers opening deep blue-violet the first day, changing lighter the second, and nearly white the third day. A fine ornamental for pot culture. Stands an occasional frost. Brazil. Seeds from 32.

BRUNFELSIA CALYCINA Benth. 'MACRANTHA'
243954 (6169) Perhaps the finest form in
cultivation; leaves to 8" long; flowers
2-3" across, lavender-blue with white eye.
Garden origin. Cuttings from 14.

BUDDLEIA COLVILEI Hook. f. (Howth Castle form) 239675 (3901) Loganiaceae. Large shrub (the species becomes a large tree to 50' tall); flowers rose. This form reputably hardier than the type; the largest of all Buddleias. Himalayas. Cuttings from 8.

BUDDLEIA CORDATA H.B.K.

238765 (3764) Evergreen shrub, 10' tall. Mexico. Cuttings from 13.

BUDDLEIA CRISPA var. FARRERI (Balf. f. & W.W. Sm.) Hand.-Mazz.

239332 (3834) Deciduous shrub, 8' tall; leaves densely white tomentose; flowers pale rose-lilac with yellow eye; plant very handsome but the flowers less so. NW. China. Cuttings from 33.

241018 (4421) Seeds of P.I. 239332.

BUDDLEIA FALLOWIANA Balf. f. & W.W. Sm.
241221 (4789) Shrub, 4-5' tall; leaves
lanceolate, 3-4" long, green above, white
tomentose below; flowers rose-purple,
with an orange eye; fragrant; fine plant,
free-flowering late in season, as hardy
as B. davidii. Yunnan, China. Cuttings
from 3.
242268 (5530) Cuttings from 1.

BUDDLEIA GRANDIFLORA Cham. & Scnlecht.

(B. macrantha).
240030 (3944) Shrub to 10' tall. Brazil.
Cuttings from 7.

BUDDLEIA NAPPII Lorenz

242269 (5307) Shrub 4-5' tall; leaves green above, silvery pubescent below, lanceolate, 3-4' long; grown under Comber 214. Chile. Cuttings from 1.

BULBOPHYLLUM SPP.

Orchidaceae. Collected in the wild by L. Maurice' Mason. Introduced as plants from 28.

242710 (5660) New Guinea.

242711 (5721) New Guinea. Mason 187. (Sect.

Coelochilus).

242766 (5646) New Guinea. Mason 50.

242768 (5652) Madagascar.

242771 (5665) New Guinea.

242773 (5669) Madagascar.

242775 (5674) Madagascar.

242784 (5718) Madagascar.

242786 (5724) Madagascar.

242788 (5732) Madagascar.

242789 (5734) Madagascar.

BULBOPHYLLUM AURIFLORUM H. Perr. 242693 (5625), 242694 (5670), 242695

(5707), and 242696 (5719) Epiphyte. Collected in the wild by L. Maurice Mason. Madagascar. Plants from 28.

BULBOPHYLLUM DENDROCHILOIDES Schltr. 242697 (5704) Epiphyte. Grown under L. Maurice Mason 32. New Guinea. Plants from 28.

BULBOPHYLLUM HABROPUS Schltr. 242698 (5644) Epiphyte. Collected by L. Maurice Mason. New Guinea. Plants

from 28.

BULBOPHYLLUM LEUCOTHYRSUS Schltr.
242699 (5692) Epiphyte. Grown under
L. Maurice Mason 169. Madagascar. Plants
from 28.

BULBOPHYLLUM MINUTIPETALUM Schltr.

242700 (5693) Epiphyte. Plants from 28. BULBOPHYLLUM MONOSEPALUM Rodrig.

242701 (5722) Epiphyte. Grown under

L. Maurice Mason 173. New Guinea. Plants
from 28.

BULBOPHYLLUM MULTIFORUM Ridl.

242702 (5675), 242703 (5708), and 242704 (5711) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

BULBOPHYLLUM OCCLUSUM Ridl.

242705 (5679) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

BULBOPHYLLUM SERRATUM H. Perr.

242706 (5709) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

BULBOPHYLLUM SPARSIFOLIUM Schltr. 242707 (5668) and 242708 (5703) Epiphyte. Grown under L. Maurice Mason 76. New Guinea. Plants from 28.

BULBOPHYLLUM UROSEPALUM Schltr.

242709 (5645) Epiphyte. Grown under L. Maurice Mason 55. New Guinea. Plants from 28.

BUNCHOSIA ARGENTHA DC.

242321 (5349) Malpighiaceae. Evergreen, scrambling shrub; leaves mostly elliptic, 4-6" long, lustrous green above, silvery tomentose below. Venezuela. Cuttings from 42.

BUXUS BALAERICA Lam.

240340 (3998) Buxaceae. Evergreen shrub or small tree to 30' tall; leaves roundish 3/4-2" long, thickish, deep lustrous green. The leaves are larger than in B. sempervirens and the plant grows taller but is less hardy. Balearic Islands, southern most Spain, and North Africa. Makes an excellent hedge plant. Cuttings from 34.

BUXUS MICROPHYLLA Sieb. & Zucc. 240756 (4081) Evergreen shrub, 8' tall; leaves 1/2-1" long; a fine form. Japan. Cuttings from 20.

BUXUS MICROPHYLLA var. JAPONICA (Muell. Arg.) Rehd.

240755 (4083) Evergreen shrub with spreading and somewhat drooping branches; leaves 1/2-1" long. Cuttings from 20.

BUXUS SEMPERVIRENS L.

240923 (4118) Evergreen shrub, 6-8' tall. Abundant on steep rocky mountain slopes, alt. 3000-4000', near Turini, 40 mi. north of Nice, Alpes-Maritime, FRANCE. In this region whole mountain sides, especially on south slopes are covered with thickets of boxwood. June 16, 1957. Cuttings.

BUXUS SEMPERVIRENS L. 'ANGUSTIFOLIA'

('Salicifolia')

242525 (5598) Willow-Leaved-Box. Densely
branched and compact, branches upright;
leaves 1/2-1" long, 1/2" wide, mostly
ovate, widest at the middle, the upper
surface sometimes wrinkled, dark green.

Garden origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'ARGENTEO-VARIEGATA'
238013 (3623) Large evergreen shrub, 10-12'
tall. Distinguished by the white-margined
leaves or sometimes the whole leaf nearly
silvery. A fine variegated boxwood. Garden
origin. Cuttings from 35.

BUXUS SEMPERVIRENS L. 'AUREA-PENDULA'
242518 (5592) Golden-Weeping-Box. Yellowish variegated weeping boxwood. Leaves
ovate, 1-1½" long, 1/2" wide, mostly
deep green but somewhat pendulous. Garden
origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'BULLATA' ('Latifolia macrophylla')

242521 (5591) One of the broad-leaved types. Leaves broadly ovate to sub-orbicular, 1-1½" long, 1" wide, deep green and puckered (bullate); stiff-

growing and of formal aspect. Garden origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'FASTIGIATA' 242847 (5768) Evergreen shrub, 4-5' tall,

the branches all ascending, rarely branched; leaves broadly ovate, 1/2-1" long and nearly as wide, crowded at the ends of the branches, often somewhat recurved. Very distinct form. Garden origin. Cuttings from 36.

BUXUS SEMPERVIRENS L. 'MYOSOTIFOLIA'
242522 (5590) Forget-Me-Not-Leaved-Box.
A dwarf, very slow growing cultivar of
dense, compact habit; leaves elliptic,
3/4-14" long, 1/2" wide, widest at the
middle, deep green; good form for low
hedges. Garden origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'PENDULA'
242523 (5593) The true weeping boxwood.
Leaves deep green, lustrous, 1/2-3/4"
long, 1/4-1/2" wide. The plant forms a
distinct trunk but the lateral branches
are pendulous. A fine vigorous form. Garden origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'PROSTRATA'

242524 (5595) Prostrate boxwood. Distinguished by the low horizontal growth of the branches, the whole plant never becoming more than two feet tall; branches nearly pure white, showing through the very dark green lustrous foliage. Of vigorous, stiff-growing habit; useful for covering a bank or trailing over a wall. Garden origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'ROSMARINIFOLIA'
240528 (4016) Rosemary-Leaved-Box; leaves
narrowly linear; unlike other forms of
boxwood on account of the small, rosemarylike leaves. Cuttings from 17.

BUXUS SEMPERVIRENS L. 'ROTUNDIFOLIA'

('Latifolia')

242519 (5582) Stiff-growing, with the branches mostly ascending; leaves relatively large 3/4-1" long, very dark green. Less freely branched and of more formal habit than some other sorts. Garden origin. Cuttings from 28.

BUXUS SEMPERVIRENS L. 'ROTUNDIFOLIA MACULATA'

('Latifolia Maculata')

242520 (5594) Distinguished by the relatively large nearly oval leaves, 1-1-1/4" long and 1" wide, some of them streaked with yellow. The plant is of stiff-growing formal habit. Well adapted for use in tubs. Garden origin. Cuttings from 28.

C

CADETIA CHIONANTHA (Schltr.) Schltr.
242712 (5609) Orchidaceae. Epiphyte; 3-4"
tall; flowers white. Grown under L.
Maurice Mason 126. New Guinea. Plants from
28.

CALADIUM × HORTULANUM Birdsey 'IRENE ALPE'
240500 (4034) Araceae. Low-growing form,
10-12" tall; leaves blotched-red in the
center, mottled-white and with green
margins. Distinguished by the dwarf habit.

Vigorous and with good color. Garden hybrid probably of French origin. Plants from 21.

CALAMOPHYLLUM CYLINDRICUM Schwant. (4744) Aizoaceae. South Africa. Cuttings

CALATHEA FASCIATA Regel & Koern.
242392 (5426) Marantaceae. Very showy
rhizomatous perennial, 2-3' tall; leaves
broadly elliptic, up to 8" long and 6"
wide, dark green above, transversely
barred with silvery-white, uniformly grayish green below. Bahia, Brazil. Plant
from 1.

CALATHEA FLAVESCENS Lindl.
242393 (5439) Rhizomatous; 4-5' tall;
leaves long-petiolate, blade elliptic,
8-10" long, 3-4" wide, flat, green; flowers
yellow. Brazil. Plants from 1.

CALATHEA GRANDIFOLIA Lindl. (C. flavescens)
242393 (5439) Rhizomatous perennial, 4-5'
tall, the leaves long-petiolate, the
blades elliptic, 8-10" long, 3-4" wide,
flat, green; flowers yellow. A vigorous
grower, good for tropical effect and quite
floriferous. Brazil. Plants from 1.

CALATHEA NIGRICANS Rusby
242322 (5374) Rhizomatous perennial, 3-5'
tall; leaves lanceolate, 12-14" long,
lustrous green above, reddish below, tufted
at the top of the long naked petioles. A
good foliage plant requiring stove-house
conditions. Bolivia. Plants from 1:

CALATHEA RUFIBARBA Fenzl
242394 (5442) Rhizomatous, 18-24" tall,
the petioles 8-10" long, the blade 10-12"
long, wavy-margined, lustrous green above,
hairy, reddish below; flowers yellow with
violet bracts. Distinguished by the redhairy leaves. Brazil. Stove-house plant.
Plant from 1.

CALEOCEPHALOCEREUS FLUMINENSIS (Miq.) Backbg. (4310) Cactaceae. Cuttings from 75.

CALLICARPA MACROPHYLLA Vahl
240796 (4111) Loganiaceae. Semi-deciduous, tomentose shrub, 8' tall; leaves
elliptic, serrate; berries pure white, in
dense clusters. South China. A subtropical
species. Cuttings from 5.

CALLITRIS CUPRESSIFORMIS Vent.
242031 (5116) Cupressaceae. Cypress-Pine.
Evergreen tree to 50' tall with rattaillike drooping branches; leaves scalelike,
deep green. A handsome cupressuslike
conifer with pendulous branches. Australia.
Seeds from 37.

CALVOA ORIENTALIS Taub.
238510 (3667) Melastomataceae. Perennial
12-14" tall; leaves 3-4" long, 1" wide,
wavy-margined, light green, shining;
flowers mauve; very floriferous. Wellgrown pot specimens are quite showy. Selections for better color forms should be
attempted. Tropical East Africa. Seeds
from 24.

CAMELLIA CUSPIDATA × C. SALUENENSIS 'CORNISH SNOW'

243247 (5982) Theaceae. Single, white with a central cluster of yellow stamens; leaves dark green, narrow, ovate, finely serrate. Very floriferous. Other forms of the hybrid have flowers tinged pink. Originated at 9. Cuttings.

CAMELLIA JAPONICA L. (unnamed cultivar)
238870 (3740) Form with very dark green
and unusually thick leaves; flowers pure
white, formal in type (resembles 'Alba
Plena'). Very floriferous. Cuttings from 38.

CAMELLIA JAPONICA L. 'ALBO-VARIEGATA'
243237 (5950) Evergreen shrub, 6' tall;
leaves white-margined. An excellent variegated sort. Garden origin. Cuttings from 11.

CAMELLIA JAPONICA L. 'AUGUSTO LEAL GOUVEIA PINTO'
238500 (3670) Flowers 4-5" across, double, convex, the petals more or less erect, salmon-pink. Decorative type. Portuguese origin. Cuttings from 24.
238726 (3722) Cuttings from 39.
241932 (5146) Cuttings from 39.

CAMELLIA JAPONICA L. 'CAMURCA'
238733 (3733) and 241929 (5138) Known also
as 'Lady Hume's Blush', 'Buff', 'Carnea',
'Kewblush', and 'Flavescens'. Large growing bush; flowers pure white, very faint
blush pink at first. Not striking but very
floriferous and excellent for bouquets.
Reputably introduced from China 150 years
ago. Cuttings from 32.

CAMELLIA JAPONICA L. 'DONA HERZILIA DE FREITAS MAGALHAES'

238729 (3727) and 241933 (5147) Flowers vary considerably in color on the same plant from bright crimson to deep violet, the general appearance often combines these colors. Origin in a garden near Oporto, Portugal, 1948. Cuttings from 30.

CAMELLIA JAPONICA L. 'DONA JANE ANDRESEN'
238728 (3726) Flowers rose-colored. Garden
origin. Portugal. Cuttings from 39.
241978 (5144) Cuttings from 30.

CAMELLIA JAPONICA L. 'DR. BALTAZAR DE MELO'
238731 (3730) Flowers 3-4" across, red and
white-striped. Decorative type. Portuguese
origin. Cuttings from 30.
241930 (5142) Cuttings from 39.

CAMELLIA JAPONICA L. 'DUARTE DE OLIVEIRA' 238730 (3729) Flowers scarlet, whitespotted and blotched. Formal type. Portuguese origin. Cuttings from 30.

CAMELLIA JAPONICA L. 'MATHOTIANA'
238499 (3669) Flowers opening flat to
somewhat reflexed, 4-5" across, sanguine,
suffused metallic blue at the tips of the
petals. A very fine formal type of immense
size and good quality. This cultivar is
used for hedges in Oporto. The plant under
this name in Portugal needs to be judged
against others grown elsewhere under the
same name. Cuttings from 24.

CAMELLIA JAPONICA L. 'PORTUENSE'
238724 (3720) and 241931 (5143) Cultivar
with yellowish variegated leaves, 2-2½"
long, 1" wide; flowers paeony-flowered,
red, 2-3" across. Virtuous mainly for the
variegated foliage. Portuguese origin.
Cuttings from 39.

CAMELLIA JAPONICA L. 'PRINCEZA REAL'
238727 (3724) and 241977 (5139) Flowers
2-2½" across, pink; formal type with good
form; floriferous and good for bouquets.
Portuguese origin. Cuttings from 32.

CAMELLIA JAPONICA I. 'RAINHA SANTA ISABEL' 238732 (3731) and 241934 (5148) Flowers pure white, formal type. Portuguese origin. Cuttings from 39.

CAMELLIA JAPONICA L. 'SAUDADE DE MARTINS BRANCO'

238725 (3721) and 241979 (5145) Flowers 4-5" across, semi-formal paeony-flowered type, the petals sanguine. Portuguese cultivar. Cuttings from 39.

CAMELLIA RETICULATA Lindl. (Wild form)
243238 (5958) Evergreen shrub to 20' tall;
leaves about 4" long, serrate, acuminate,
dull green, the veins quite prominent;
flowers deep rose, 3-6" in diameter.
Yunnan, China. Grown under Forrest 27165.
Cuttings from 11.

243239 (5990), 243240 (5996), and 243241 (5997) Unnamed first generation seedlings from Forrest's original introduction from Yunnan. Cuttings from 9.

243955 (6151) Selection from the original Forrest introduction; flowers deep pink. Holds an Award of Merit from Royal Horticultural Society, London. Cuttings from 31.

243861 (6096) and 244721 Plants grown from original Forrest introductions from Yunnan, China. Seeds from open pollinated plants growing in association with  $\underline{C}$ . saluenesis. Seeds from 9.

CAMELLIA RETICULATA Lindl. 'MARY WILLIAMS' 243242 (6012) A selection of the wild form with outstanding single pink flowers. Cuttings from 31.

CAMELLIA SALUENENSIS Stapf
243862 (6093) Evergreen shrub to 15' tall;
leaves oblong, 1½-2½" long, ½-1" wide,
shining dark green; flowers white, rose,
or carmine, about 3" wide. A fine species
and of value as a parent for hybrids.
SW. China. Less hardy than C. japonica
and C. sasanqua. Seeds from 9.
243956 (6149) A selected color form with
pink flowers. Cuttings from 31.

CAMELLIA SASANQUA Thunb. 'BARONESA DE SOUTE-LINHO'

A pink-flowered cultivar of Portuguese origin.

238734 (3725) Cuttings from 30. 241936 (5141) Cuttings from 39.

CAMELLIA SASANQUA Thunb. 'JAUNE'
(3723) and 241935 (5140) The so-called
'Fortune's Yellow' camellia, but yellow

only by virtue of the greatly increased number of stamens, which allude to doubleness. Origin in nursery of Companhia Horticola, Oporto, Portugal. Cuttings from 31.

CAMELLIA × WILLIAMSII W.W. Sm.

Hybrid of <u>C</u>. japonica × <u>C</u>. saluenensis.

Cuttings from 9.

243243 (5995) 'CHARLES MICHAEL' Selected form with fine deep pink flowers. Origin at Caerhays Castle.

243322 (6034) 'J. C. WILLIAMS' The first named cultivar of the hybrid, by J. C. Williams of Caerhays Castle. Flowers single, flattish, pale blush pink with central yellow stamens. A fine upright rather open free flowering shrub. Drops the dead flowers. Spring.

243345 (5973) Cuttings from 9 and 243323 (6042) Cuttings from 45. 'MARY CHRISTIAN' Resembles 'J. C. WILLIAMS', but the flowers are darker pink. Origin at Caerhays Castle.

243246 (5989) 'NOVEMBER PINK' A fine, dark pink form, flowering in November. Origin at Caerhays Castle.
243244 (6004) 'ST. EWE' Flowers single

to semi-double, broadly cup-shaped, rose-madder with a central cluster of bright yellow stamens. Good growing and freely branched. Origin at Caerhays Castle.

CAMPSIS RADICANS (L.) Seem. 'GOLDEN TRUMPET' 240741 (4070) Bignoniaceae. Rank-growing deciduous climber, the flowers golden yellow. Cultivar allegedly of French origin. Plant from 40.

CANARINA CAMPANULATA L.

241852 (5024) Campanulaceae. Herbaceous rampant climbing perennial from a tuber; flowers bell-shaped about 2" long, yellowish, brick red or purplish brown. Showy. Canary Islands. Seeds from 26.

CANTUA BUXIFOLIA Lam.

239475 (3861) Polemoniaceae. Sacred-Flower-of-the-Incas. Very showy small-leaved shrub to 6' tall, with arching branches; leaves about 3/4" long; flowers long-tubular, drooping, purplish red, the tube striped yellow. Peru, Bolivia, and Chile. Cuttings from 3. 241083 (4642) Cuttings from 27. 241353 (4985) Seeds from 27.

CAPPARIS CYNOPHALLOPHORA L.

240435 (4012) Capparidaceae. Small evergreen shrub; leaves 4-5" long, shiny above, silvery beneath. W. Indies. Cuttings from 17.

CARALLUMA

Asclepiadaceae. Stems succulent, usually 4-sided, branched chiefly from the base; flowers 1/2-5" across, brownish. Related to Stapelia. Africa and southern Asia in the drier parts.

CARALLUMA EUROPAEA var. MAROCCANA (Hook f.)
Bgr.

(4148) Morocco. Cuttings from 75.

CARALLUMA JOANNIS Maire (4147) SW. Morocco. Cuttings from 75.

CAREX SPP.

244022 Cyperaceae. Plants from 79.

CAREX MORROWII Boott 'VARIEGATA'
241143 (4852) Densely tufted perennial
with grasslike white-margined leaves about
a foot long; graceful and decorative sedge
with soft, lax, variegated foliage. Does
well in pots. Japan. Plants from 3.
241937 (5151) Plants from 30.

CARPINUS FARGESIANA Winkler 238014 (3607) Betulaceae. Small deciduous tree. China. Cuttings from 2.

CARRIERREA CALYCINA Franch. 242270 (5319) Flacourtiaceae. Small deciduous tree; leaves 4-6" long, elliptic, acuminate, shallowly serrate, the veins reddish. Central China. Cuttings from 1.

CARYOPTERIS × CLANDONENSIS A. Simmonds (C. incana × C. mongholica)

242873 (5820) Verbenaceae. Flowers indigo blue. Very good unnamed form of the hybrid. Garden origin. Cuttings from 14.

CARYOPTERIS × CLANDONENSIS A. Simmonds 'KEW BLUE'

242872 (5805) Suffrutescent perennial, 18-30" tall, much-branched; flowers very dark azure blue. Garden origin. Cuttings from 14.

CASTANEA SATIVA Mill. 'ASPLENIIFOLIA'
237920 (3579) Fagaceae. Tree to 30' tall.
A very interesting chimera with irregularly shaped and variously white-variegated leaves. Garden origin. Cuttings from 10.

CAVENDISHIA ACUMINATA (Hook.) Hemsl.
239676 (3891) Ericaceae. Evergreen shrub
to 10' tall with pendulous branches;
leaves lanceolate to ovate, 2-3" long;
flowers bright red, tubular, the lobes
green. A striking plant in flower. Andes
of Colombia and Ecuador. Cuttings from 8.

CEDRUS DEODARA (Roxb.) Loud. 'PENDULA'
238015 (3596) Pinaceae. The branches
pendulous; makes a dense spreading ground
cover on its own roots; when grafted on a
standard the branches become long-weeping.
Garden origin. Cuttings from 2.

CELASTRUS DIVERSIFOLIUS Hemsl. (Gymnosporia) 240031 (3935) Celastraceae. Evergreen tree to 30' tall; leaves leathery, shiny. China. Cuttings from 7.

CELASTRUS PYRACANTHUS L.

240679 (4069) Evergreen, spiny shrub; flowers white. South Africa. Cuttings from 6.

CENTAUREA VERBASCIFOLIA Vahl
240073 and 240110 (3956) Compositae. Halfwoody subshrub to 4' tall, the leaves 6-8"
long, 3-4" wide, green above, whitetomentose beneath; flower heads lavender;
striking plant, probably hardy only in
frostless regions. Southern Arabian peninsula. Cuttings and seeds from 7.

CENTRADENIA GRANDIFOLIA Endl. ex Walp.
241222 (4837) Melastomataceae. Tropical
evergreen subshrub, about 2' tall, the
branches 4-angled; leaves bright red beneath; flowers rose-pink. Handsome foliage
and flowering plant. Stove-house. Mexico.
Cuttings from 3.

CEPHALOCEREUS ROYENII (L.) Britt. & Rose (4678a) Cactaceae. Cuttings from 3.

CERATOSTYLIS PLATYCHILA Schltr.
242714 (5611) Orchidaceae. Epiphyte. Plant
equisetumlike; flowers minute. Grown under
L. Maurice Mason 31. New Guinea. Plants
from 28.

CERCIS SILIQUASTRUM L. 'ALBA'
238016 (3616) Leguminosae. White-flowered
form of the European Judas tree. Garden
origin. Cuttings from 35.

CEREUS SERPENS DC. (4296) Cactaceae. Ecuador. Cuttings from 75.

CEROPEGIA BALLYANA Bullock
241419 (5023) Asclepiadaceae. Rampant
scrambler, the stems green, succulent, the
leaves 3-4" long; flowers purple, maculate;
whole plant brownish metallic. Originally
from P. R. O. Bally, Nairobi, Kenya.
Cuttings from 3.

CEROPEGIA SANDERSONII Decne. (4411) Natal. Cuttings from 75.

CEROPEGIA SANDERSONII × C. SIMILIS (4396 and 4397) Garden origin. Cuttings from 75.

CEROPEGIA SERPENTINA E. A. Bruce 240010 (3877) Succulent with long whiplike brownish branches. Transvaal. Cuttings from 3.

CESTRUM ELEGANS (Brongn.) Schlecht.
239476 (3846) Solanaceae. Large shrub to
8' tall; flowers rose-lilac. Mexico.
Cuttings from 3.

CESTRUM FASCICULATUM Miers
241915 (5100) Evergreen shrub, 6-8' tall,
the branches more or less pendulous;
flowers carmen, pendulous; handsome and
very floriferous; fine form of the
species. Mexico. Cuttings from 63.

CESTRUM 'NEWELLII'
243889 (6116) Cultivar of C. fasciculatum or C. purpureum. Large evergreen
pubescent shrub; flowers bright crimson.
Perhaps the best of the cultivated
cestrums. Cuttings from 47.

CESTRUM PURPUREUM (Lindl.) Standl.
238766 (3775) Evergreen shrub, 4-6' tall,
with arching branches, the shoots downy;
flowers reddish purple in pendulous
clusters; very floriferous and showy.
Mexico. Cuttings from 13.

CHAENORRHINUM CRASSIFOLIUM var. GLAREOSUM
Boiss. (Linaria crassifolium).
242032 (5068) Scrophulariaceae. Densely
tufted rhizomatous perennial forming small
mats; leaves about 1/2" long, ovate, thickish; flowers bluish purple, the throat

reddish. Talus slopes, alt. 8550', along Granada-Vasares de Veleta road, Sierra Nevada Mts., Spain. Seeds.

CHAMAECEREUS KLABACHII × SILVESTRI

(4671) Cactaceae. Garden hybrid. Plants from 3.

CHAMAECEREUS × PRAGENGIS

(4669) Garden hybrid. Plants from 3.

CHAMAECEREUS × SILVESTRI Britt. & Rose

(4672) Garden hybrid. Cuttings from 3.

CHAMAECEREUS SILVESTRI X STEARNII

(4200) Garden hybrid. Cuttings from 75. (4670) Cuttings from 3.

CHAMAECEREUS X STERNBACHII

(4686) Garden hybrid. Plants from 3.

CHAMAECYPARIS LAWSONIANA (Murr.) Parl.
244643 and 247772 Pinaceae 'ELLWOODII'
Compact, slow-growing, the branches erect,
the foliage feathery, glaucous. Garden
origin. Plants from 70 and 80.
247779 'FORSTEKENSIS GLAUCA' Dwarf, globu-

lar form, the foliage with the appearance of silvery green moss. Garden origin. Plants from 70.

244644 'GIMBORNEI' Garden origin. Plants from 80.

247773 'GLAUCA SPEK' Foliage very glaucous. Garden origin. Plants from 70.

247780 'LANE' 9-15' tall. Garden origin.

Plants from 70.

242090 (5192) and 242091 (5194)

'MINIMA ROGERSII AUREA' Dwarf densely fastigiate; twig ends yellow. Garden origin. Cuttings from 64.

CHAMAECYPARIS OBTUSA (Sieb. & Zucc.) Endl. 244645 'JUNIPEROIDES COMPACTA' Minute form growing only a few inches tall. Garden origin. Plants from 80.

244646 'KOSTERI' Garden origin. Plants from 80.

CHAMAECYPARIS PISIFERA (Sieb. & Zucc.) Endl. 247775 'ARGENTEA PYGMAEA' Dwarf; foliage silvery. Plants from 70. 244647 'COMPACTA' Garden origin. Plants

247776 'COMPRESSA' Garden origin. Plants

from 70. 247778 'NANA' Dwarf; foliage green. Garden

247778 'NANA' Dwarf; foliage green. Garden origin. Plants from 70

247777 'NANA AUREO-VARIEGATA' Dwarf; foliage yellowish. Garden origin. Plants from 70.

244648 'PLUMOSA AUREA NANA' Dense, low cushionlike plant; leaves golden. Garden origin. Plants from 80.

245333 'PLUMOSA CYANEA VIRIDIS' Garden

origin. Plants from 81.

245334 'PLUMOSA NANA COMPACTA' Dwarf, very densely branched, featherylike foliage. Garden origin. Plants from 81.

244649 'ROGERSII' Garden origin. Plants from 80.

244650 'SQUARROSA ARGENTEA' Dense bush; leaves juvenile, silvery. Garden origin. Plants from 80.

247781 'SQUARROSA NANA AUREA' Dwarf; foliage yellowish. Garden origin. Plants from 70.

CHAMAERANTHEMUM BEYRICHII Hook. (Eranthemum beyrichii)

240538 (4037) Acanthaceae. Rhizomatous creeping perennial; leaves mottled, the veins light colored. A showy ground creeper. Brazil. Cuttings from 17.

CHASMANTHE AETHIOPICA (L.) N. E. Br.

(Antholyza aethiopica)
241026 (4113) Iridaceae. Cormous with
gladioluslike leaves, 12-18" long;
flowers reddish yellow, tubular, 1-2"
long, the spikes sometimes 25-flowered.
With the aspect of Crocosmia, the garden
montbretias, less showy but with finer
foliage. Thought of as a potentially good
parent for hybrids with related genera.
South Africa. Corms from 41.
241483 (4648) Seeds from 27.

CHEIRANTHODENDRON PENTADACTYLON Larr.
239995 (3926) Sterculiaceae. Chicken-foot
tree. Small evergreen subtropical tree to
20' tall; leaves sycamorelike, downy above,
rusty beneath. The common name illudes to
the 5 stamens whose filaments are united
at the base and recurved at the top, giving them the appearance of chicken feet.
Mexico. Cuttings from 7.

CHEIRIDOPSIS

Aizoaceae. Dwarf desert succulents forming clumps; each plant consists of 1 or 2 pairs of fleshy leaves, the lower pair usually free to the base, the upper pair united and drying to form a sheath around the younger pair within; flowers yellow. Great and Little Namaqualand, South Africa.

CHEIRIDOPSIS BIBRACTRATA (Haw.) N. E. Br. (4273) Cuttings from 75.

CHEIRIDOPSIS BIFIDA (Haw.) N. E. Br. (4176) Cuttings from 75.

CHEIRIDOPSIS MIRABILIS Schwant. (4180) Cuttings from 75.

CHEIRIDOPSIS NOCTIFLORA L. Bolus (4178) Cuttings from 75.

CHEIRIDOPSIS PURPUREA (Steud.) L. Bolus (4179) Cuttings from 75.

CHEIRIDOPSIS ROSTRATA (L.) N. E. Br. (4701) Cuttings from 3.

CHEIRIDOPSIS SPLENDENS L. Bolus (4177) Cuttings from 75.

CHILIANTHUS OLEACEUS Burch. (Nuxia saligna) 240379 (3979) Loganiaceae. Large much-branched shrub or small tree, 15-20' tall; leaves 3-4" long, 1/4-1/2" wide; flowers yellowish white, fragrant, very small and numerous, in panicles 4-6" across. South Africa. Cuttings from 7.

CHILOTRICHUM ROSMARINIFOLIUM Less.
242271 (5308) Compositae. Shrub, 4-5'
tall, much-branched; leaves linear, 2-3"
long; ray flowers white; bold and attractive. Grown under Comber 348. Chile. Cuttings from 1.

CHIMONANTHUS PRAECOX Lindl.

241484 (4646) Calycanthaceae. Wintersweet. Deciduous shrub to 10' tall; leaves 3-7" long, lustrous green, roughened, fragrant when injured; flowers about an inch across, yellow with a reddish eye, very fragrant. November through the winter. China. One of the best winter flowering shrubs. Hardy north. Seeds from 27.

CHIRITA SINENSIS Lindl.

242664 (5637) Gesneriaceae. Perennial; leaves elliptic, 4-5" long, green-maculate and silvery; flowers lilac, gloxinialike. A showy stove-house plant to be grown like gloxinia. China. Leaf cuttings from 15.

CHLORANTHUS SPP.

242323 (5348) Chloranthaceae. Perennial, 2-3' tall, the leaves ovate or elliptic, 3-6" long, more or less puckered above and shining green, the stems swollen at the nodes. Largely a curiosity and of botanical interest. Cuttings from 42.

CHLOROPHYTUM BOWKERI Baker

243807 (6090) Liliaceae. Rhizomatous, the leaves all basal, 2-3' long, 1-2" wide; flowering scapes 4-5' long, the flowers white, late summer. South Africa. Rhizomes from 36.

CHLOROPHYTUM COMOSUM (Thunb.) Bak. 'MANDAIA-NUM'

238501 (3671) Tuberous-rooted, densely tufted perennial; leaves a foot long, strap-shaped, white-margined; flowers white; foliage broader and the plant generally more robust than in the more commonly grown <u>C</u>. <u>elatum</u>. South Africa. Plants from 39.

CHLOROPHYTUM LAXUM R. Br. 'VARIEGATUM'
242608 (5517) Liliaceae. Tuberous-rooted,
densely tufted perennial, 5-6" high;
leaves grasslike, white-streaked. Garden
origin. Plants from 28.

CHRYSANTHEMUM SPP.

240819 (4109) Compositae. Much-branched suffrutescent perennial, 2-3' tall, with finely divided glaucous leaves; ray flowers white. Very floriferous and attractive. Cuttings from 5.

CHRYSANTHEMUM HISPANICUM (Willk.) Dorf. 241838 (5069) Rhizomatous perennial, forming small matted clumps; ray flowers lemon-yellow. Talus slopes, alt. 7500', along Granada-Vasares de Veleta road, Sierra Nevada Mts., SPAIN, August 1, 1957. Plants sent.

CHUSQUEA CULEOU E. Desv.

242395 (5417) Gramineae (Bambuseae). Rhizomes an inch thick, very stout; culms 6-8' tall, solid, I" in diameter, require 2 yrs. to mature; leaves linear, 1-2" long, 1/2" wide, densely crowded at the nodes, with the aspect of a broom. Clump bamboo from southern Chile and adjacent Argentina. Grown at Edinburgh under Comber

425 & 466. Should be tried in lower Gulf States and Far West. Rhizomes from 1.

CIRRHOPETALUM SPP.

242781 (5705) and 242782 (5710) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

CIRRHOPETALUM UMBELLATUM (Forst. f.) Frapp. 242692 (5730) and 242713 (5725) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

CISSUS SPP.

(4145 and 4146) Vitaceae. Kenya. Cuttings from 3. (4443) Cuttings from 3.

CISSUS CACTIFORMIS Gilg

(4633) Somaliland to Transvaal. Cuttings from 3.

CISSUS CIRRHOSA (Thunb.) Pers.

241144 (4782) Rampant climber with tendrils; leaves rather fleshy, usually 3-foliolate; flowers very small in muchbranched corymbs. The foliage handsome. South Africa. Cuttings from 3.

CISSUS LANIGERA Harv. (Vitis lanigera)
242376 (5376) Rampant evergreen climber;
leaves digitately compound, dark green
above, lighter and covered with calcium
oxalate crystals below. Handsome. South
Africa. Cuttings from 1.

CISSUS QUADRANGULARIS L.

(4632) Natal, Arabia to India. Cuttings from 3.

CISSUS ROTUNDIFOLIA (Forsk.) Vahl (4595) Vigorous climber; leaves nearly oval, 3-4" across, thick; handsome. Tanganyika. Cuttings from 3.

CISSUS STRIATA R. & P.

240820 (4108) Rampant evergreen climber with tendrils; leaves digitately 5-lobed, the leaflets 1-2" long, dark reddish green; a handsome small-leaved climber for pillars or walls. Peru, Chile, S. Brazil. Plants from 5.

CISTUS SPP.

241380 (4987) Cistaceae. Viscid evergreen shrub, 3-4' tall; flowers 2-3" across, deep pink with dark eye. Handsome. Cuttings from 27.

CISTUS ALBIDUS L.

241853 (4986) Evergreen, white-tomentose erect shrub, 3-4' tall; leaves about 2" long, 1/2 - 3/4" wide, sessile; flowers about 2-1/2" across, lilac or rose. In sparse pine woodland, about 6 mi. inland from Cannes, Alpes-Maritime, FRANCE. July 13, 1957. Seeds.

CISTUS MONSPELIENSIS L.

242634 (5159) Low evergreen shrub to 2' tall forming a spreading much-branched bush. Open pine forest near Viseu, PORTUGAL. August 17, 1957. Seeds.

CISTUS VILLOSUS L. 'NANUS'

241320 (4966) Evergreen shrub, to 3' tall; leaves pubescent, 1-2" long; flowers in terminal clusters, about 2-1/2" across,

rose-purple, early summer. Showy, excellent form. Mediterranean region. Cuttings from 43.

CITHAREXYLUM LIGUSTRINUM Van Houtte 241352 (4976) Verbenaceae. Evergreen shrub, 10-15' tall; leaves lustrous, privetlike; flowers racemose on the twig ends, lavender. Nice foliage but the flowers meagre. Brazil. Cuttings from 57. CITHAREXYLUM PEOPPIGII Walp.

240757 (4075) Evergreen shrub 6' tall; leaves lanceolate, shining above; flowers in racemes, small, bluish. A neat attractive shrub. Brazil. Cuttings from 20.

CITRUS AURANTIUM L. 'MYRTIFOLIA' Rutaceae. Small evergreen tree to 20' tall or large shrub; leaves densely crowded, about 2" long, somewhat undulate-margined. An unusual, small-leaved form. Desirable as a pot plant.

240004 (3925) Cuttings from 7. 240539 (4043) Cuttings from 17.

CLEISTOCACTUS ANGUINEUS Britt. & Rose (4283) Cactaceae. Southern South America. Cuttings from 75.

CLEISTOCACTUS TOMINENSIS (Weing.) Backbg. (4295) Cuttings from 75.

CLERODENDRON TOMENTOSUM R. Br. 239996 (3921) Verbenaceae. Large shrub; leaves ovate-lanceolate, soft pubsecent; flowers white, scented. Australia. Cuttings from 7.

CLETHRA DELAVAYI Franch. 242272 (5312) Clethraceae. Deciduous shrub, 6-8' tall; leaves 3-4" long, elliptic, green above, glaucous below; flowers white. China. Cuttings from 1.

CLEYERA SPP. 243248 (5993) Theaceae. Evergreen shrub, 20-35' tall; leaves leathery; flowers somewhat fleshy, fragrant, waxy-white. Grown under Forrest 24578 from the Shweli-Salwin divide, alt. 9000', Yunnan, China. Cuttings from 9.

CLINOGYNE GRANDIS (Mig.) Benth. & Hook. f. (Actoplanes canniformis)

242324 (5364) Marantaceae. Rhizomatous, rank-growing robust perennial, the leaves 3-4" long; handsome foliage plant. Malaya. Stove-house. Plants from 1.

CLUSIA FLAVA Jacq.

239997 (3919) Guttiferae. Evergreen tree; leaves thick, lustrous, leathery. Handsome. Jamaica. Cuttings from 7.

CLUSIA GRANDIFLORA Splitg.

244011 (6167) Evergreen, leathery-leaved small tree, 20' tall, (epiphytic in the wild); leaves large, 6-12" long, 3-6" wide, entire, dark green above; flowers white, pinkish near the base, about 2" across; a striking foliage plant. Guiana. Cuttings from 14.

CLYTOSTOMA BINATUM (Thunb.) Sandwith 242325 (5410) Bignoniaceae. Rank evergreen climber with tendrils; leaves dark green; flowers bright orchid. Showy. Brazil. Cuttings from 1.

CNEORUM TRICOCCON L.

Cneoraceae. Spurge-Olive. Evergreen, densely-branched shrub, 2-3' tall; leaves boxwoodlike, about an inch long, lustrous; flowers yellow, small; fruit bright red, turning black when ripe. Fine broadleaved evergreen with attractive fruit. 239066 (3804) Open rocky slopes above the Mediterranean, West of Motril, Prov. Malaga, SPAIN. April 14, 1957. Cuttings. 241467 (5044) Seeds from 44.

COCCOLOBA FAGIFOLIA Jacq.

240501 (4024) Polygonaceae. Large evergreen shrub, the new leaves reddish beneath, green above. Tropical foliage plant. South America. Cuttings from 17.

COCCOLOBA VENOSA L. (C. excoriata) 240594 (4028) Small evergreen tree with large obovate, thin leaves, 10-12" long. Tropical foliage plant. West Indies. Cuttings from 17.

COCHLIOSTEMA JACOBIANUM K. Koch & Linden 242326 (5362) Commelinaceae. Coarse, stemless epiphytic herb; leaves closely imbricate from the base, spathulate, 2' long; flowers dark blue, long pedunculate. With the aspect of Billbergia. A fine plant for a stove-house. Ecuador. Plant from 1. (cf. Nat. Hort. Magazine, January 1958).

COELOGYNE FRAGRANS Schltr. 242715 (5654) Orchidaceae. Epiphyte. Grown under L. Maurice Mason 54. New Guinea. Plants from 28.

COLCHICUM CILICICUM Hayek & Siehe 243808 (6091) Liliaceae. Vernal leaves to 6" long, dark green; flowers rose-lilac with yellowish keel, up to 25 per sheath, the floral tube 6-10" long, the anthers deep yellow; October. Cilician Taurus Mts., Turkey. Fine floriferous species, deserving wider attention in gardens. Corms from

COLCHICUM SPECIOSUM Stev. 'RUBRUM' 243809 (6086) Corm large, 2" in diameter; vernal leaves 12-16" long or larger, 1-3" wide; flowers deep reddish purple, the tube 5-6" long, the lobes 1-2" long, August-September. Asia Minor. Probably not too hardy north. A magnificent form. Corms from 36.

COLEUS ARABICUS Benth. (4496) Labiatae. Perennial; leaves white pubescent. Arabia. Botanical interest. Cuttings from 3.

COLEUS PENZIGII Bak.

240758 (4082) Perennial soft white hairy herb, 12-18" tall; leaves 2-3" long; flowers bright violet, late summer. Ethiopia. Cuttings from 20.

COLLETIA INFAUSTA N.E. Br. 242227 (5294) Rhamnaceae. Much-branched shrub with very stiff branches and long round spines 2-3" long; leafless; branches all green; flowers white. Curious plant handsome in flower. Chile. Cuttings from 1.

COMBRETUM COCCINEUM (Sonner.) Lam.
242327 (5379) Combretaceae. Evergreen vine,
20' tall; leaves elliptic, 3-4" long;
flowers scarlet. Madagascar. Cuttings from

COMPOSITAE (undetermined)

239363 (3831) Perhaps <u>Eupatorium</u>. Evergreen shrub, 3' tall; flowers not seen. Of horticultural merit. Cuttings from 33.

CONIOGRAMME JAPONICA Hayata

241203 (4084) Polypodiaceae. Fronds leathery, bipinnate, shiny above. Japan. Spores from 20.

CONOPHYLLUM NIVEUM

(4185) Aizoaceae. South Africa. Cuttings from 75.

CONOPHYTUM

Aizoaceae. Plants with very thick leaves fused together except for a small indentation on the upper surface; flowers white, yellow, pink, or purple. One of the mimicry plants resembling <u>Lithops</u>. Namaqualand, S. Africa.

CONOPHYTUM ELISHAE (N. E. Br.) N. E. Br.

(4168) Plants from 75.

CONOPHYTUM FICIFORME N. E. Br.

(4170) Plants from 75.

CONOPHYTUM FRAMESII L. Bolus

(4169) Cuttings from 75.

CONOPHYTUM NELIANUM Schwant. (4167) Plants from 75.

CONVOLVULUS MAURITANICUS Boiss.

241855 (4995) Convolvulaceae. Prostrate, twining perennial, white-silvery throughout; flowers deep blue, about 1" across; showy, very floriferous. North Africa. Excellent for baskets or sunny banks. Seeds from 5.

CONVOLVULUS MAURITANICUS var. SABATIUS
241854 (4994) Very much like the typical
form of the species, but the whole plant
less vigorous and more dwarf. Native along
the Mediterranean coast near Savona, Italy.
Seeds from 5.

COPIAPOA FIEDLERIANA (K. Sch.)Backbg.
Cactaceae. Plant solitary, round, ribbed,
woolly at the top; flowers yellow. Chile.
(4165) Plants from 3.
(4213) Plants from 75.

COPIAPOA MARGINATA (Salm-Dyck) Britt. & Rose (4209) Chile. Cuttings from 75.

COPIAPOA MEGARHIZA Britt. & Rose

(4208) Chile. Cuttings from 75.

CORDIA FRANCISCII Tenore
240032 (3939) Boraginaceae. Evergreen tree,
60' tall, somewhat buttressed, roundheaded; flowers white. Known only from
horticulture. Cuttings from 7.
240305 (4003) Cuttings from 25.

CORDYLINE SPP.

241224 (4792) Liliaceae. Small evergreen tree with uniformly reddish leaves. Striking. Cuttings from 3.

CORDYLINE STRICTA Endl.

241225 (4791) Evergreen, sometimes branched shrub to 12' tall; leaves to 2' long and 1 1/4" wide; flowers lilac to blue. Queensland, New South Wales. Cuttings from 3.

CORDYLINE TERMINALIS Kunth 'CANNIFOLIA'
241020 (4422) Evergreen shrub, about 8'
tall, erect, the leaves 1-2' long, about
3-4" wide, deep green, canna-shaped. A
wide-leaved form of the species. Australia.
Cuttings from 33.

CORIARIA MYRTIFOLIA L.

241321 (4941) Coriariaceae. Sprawling deciduous shrub, 5-6' tall; leaves myrtlelike, 2-3" long, deep green; flowers inconspicuous; fruit berrylike, black, fleshy; showy in fruit, the foliage handsome; on shaded mountain slopes near Col de Castillon, alt. 1800', above Menton, Alpes-Maritime, FRANCE. July 7, 1957. Seeds.

CORNUS ALTERNIFOLIA L. f. 'ARGENTEA'
242526 (5584) Cornaceae. Deciduous shrub,
4-6' tall; leaves streaked with white.
Garden origin. Cuttings from 28.

CORNUS CAPITATA Wall.

243863 (6092) Himalayan Dogwood. Partially evergreen tree, 30' tall with a single trunk; floral bracts white, June; fruit fleshy, globular, 1-2" in diameter, strawberrylike, crimson. Himalayas. Hardy only south or far west. Seeds from 45.

CORNUS HESSEI Koehne

242429 (5490) Dwarf deciduous shrub; leaves elliptic, reddish purple above, glaucous beneath; flowers white; very slow growing (plants 30 yrs. old at Edinburgh 2' tall). Origin uncertain. Reputably from NE. Asia, but more likely of garden orgin. Excellent dwarf shrub. Cuttings from 1.

CORYLUS AVELLANA L. 'HETEROPHYLLA' ('Querci-folia')

239929 (3910) Betulaceae. Much-branched deciduous shrub with oaklike cut leaves. Garden origin. Cuttings from 46.

CORYPHANTHA CLAVA (Pfeiff.) Lem. 'LONGISETA' Cactaceae.

(4721) Mexico. Plants from 3.

CORYPHANTHA VILLARENSIS Backbg.

(4705 and (4719) Mexico. Plants from 3 CORYPHANTHA RAPHIDACANTHA Lem. 'CRISTATA' (4730) Garden origin. Cuttings from 3.

COSTUS MALORTIEANUS H. Wendl

242585 (5575) Zingiberaceae. Stepladder plant. Rhizomatous perennial, 3' tall; leaves broadly ovate to 14" long and 7" wide, short pubescent above; flowers in dense heads, yellow and the lip marked with red; an elegant foliage and flowering stove-house plant. Costa Rica. Plants from 28.

COSTUS MOSIACUS Bull.

242586 (5545) Rhizomatous; leaves elliptic, 3-4" long, sessile, the midrib prominent, the whole plant with more or less translucent, succulent foliage. Congo. Plant from 28.

COSTUS TAPPENBECKIANUS J. Braun & K. Schum. 242328 (5365) Rhizomatous perennial, 3-4' tall with succulent stems; leaves broadly ovate to nearly oval; attractive stovehouse foliage plant. Camerooms. Plants from 1.

COTONEASTER CONGESTA Bak.

247769 Rosaceae. Dwarf evergreen shrub; leaves small 1/4" long; fruit red. Himalayas. Plants from 70.

COTONEASTER X 'CORNUBIA'

243957 (6140) Hybrid derived in part probably from <u>C</u>. <u>frigida</u>; evergreen, very vigorous shrub, <u>15'</u> tall, much-branched; fruit 1/2" across, scarlet, in large clusters. Cuttings from the original plant awarded a First Class Certificate from the Royal Horticultural Society, London. Cuttings from 31.

COTONEASTER × 'EXBURIENSIS'

243958 (6137) Evergreen shrub, 15' tall, the branches spreading and arching; berries yellow, in large clusters. Extremely fine yellow-fruited hybrid. Cuttings from the original plant at 31.

COTONEASTER × 'ROTHSCHILDIANA'

243959 (6142) Evergreen shrub, 10-15' tall; fruit yellow. Garden origin. Cuttings from 31.

COTONEASTER SALICIFOLIA Franch. 'PROSTRATA' 240529 (4015) Semi-evergreen prostrate shrub; leaves lanceolate, ½-1" long, lustrous, white-felted below; berries bright red. Fine form for banks. Garden origin. Cuttings from 16.

COTYLEDON Crassulaceae.

The genus as presently understood occurs almost exclusively in South Africa (1 in Eritrea and Arabia). They are either shrubby or large fleshy herbs for dry essentially frost-free climates. Most sorts make excellent pot plants.

COTYLEDON SPP.

(4707) Cuttings from 3.

COTYLEDON BUCHOLZIANA Stephan & Schuldt (4151) Cape Province, South Africa. Cuttings from 75.

COTYLEDON CORUSCANS Haw.

(4353) South Africa. Cuttings from 3. (4431) South Africa. Cuttings from 75.

COTYLEDON DECUSSATA Sims

(4427) and (4428) South Africa. Cuttings from 3.

COTYLEDON ERYTHREA

(4429) Cuttings from 3.

COTYLEDON JACOBESIANA Poelln.

(4536) Cuttings from 3.

COTYLEDON PANICULATA L. f.

(4150) Up to 5' tall. Cuttings from 75.

COTYLEDON UNGUICULARIS

(4149) Cuttings from 75.

CRASSULA

Crassulaceae. Large genus of desert succulents, either shrubs or herbs, occurring largely in South Africa, but also into tropical Africa and Madagascar.

CRASSULA SPP.

(4251) Cuttings from 75.

241023 (4426) Succulent perennial to 10" tall; flowers white; viviparous propagules appearing at the nodes throughout the inflorescence. Cuttings from 33.

(4521) Cuttings from 3.

(4722) 'VARIEGATA' Cuttings from 3.

(4741) Peru, alt. 6000'. Cuttings from 3.

CRASSULA ARCHERI Compt.

(4238) Cape Province. Cuttings from 75.

CRASSULA ARTA Schoenl.

(4236) Cape Province. Cuttings from 75. (4470) Cuttings from 3.

CRASSULA BARBATA Thunb.

(4468) South Africa. Cuttings from 3.

CRASSULA BREVIFOLIA Harv.

(4255) Cape Province. Cuttings from 75.

CRASSULA CELTIS

(4480) Cuttings from 3.

CRASSULA COMPTONII Hutchins. & Pill.

(4467) Cape Province. Cuttings from 3.

CRASSULA CONJUNCTA N. E. Br.

(4247) Eastern Cape Province. Cuttings from 3.

CRASSULA CRENULATA Thunb.

(4248) South Africa. Cuttings from 75.

(4473) Cuttings from 3. CRASSULA DIVARICATA E. & Z.

(4385) SW. Cape Province. Cuttings from 75.

CRASSULA DUBIA Schoenl'.

(4720) South Africa. Cuttings from 3.

CRASSULA ELEGANS Schoenl. & Bak. f.

(4237) Cuttings from 75. (4474) Cuttings from 3.

CRASSULA ERICOIDES Haw.

(4760) South Africa. Cuttings from 3.

CRASSULA GRISEA Schoenl.

(4191) and (4192) Cape Province. Cuttings from 75.

CRASSULA HETEROPHYLLA

(4718) Cuttings from 3.

CRASSULA HYSTRIX Schoenl.

(4241) Cape Province. Cuttings from 75.

CRASSULA JUSTI-CORDEROYI Jacob. & Poelln.

(4535) SW. Africa. Cuttings from 3.

CRASSULA LANUGINOSA Harv.

(4711) Karroo, South Africa. Cuttings from 3.

CRASSULA LICOIFOLIA

(4476) Cuttings from 3.

CRASSULA LOGANIANA

(4464) Cuttings from 3.

CRASSULA LYCOPODIOIDES Lam. 'MONSTRUOSA' Crested form. Garden origin.

(4231) Cuttings from 3.

(4731) Cuttings from 75.

CRASSULA LYCOPODIOIDES Lam. 'PURPUSII' (4256) Garden origin. Cuttings from 75.

CRASSULA LYCOPODIOIDES Lam. 'VARIEGATA' (4235a) Garden origin. Cuttings from 75.

(4712) Cuttings from 3.

CRASSULA MACOWANII S. Elliot (4465) South Africa. Cuttings from 3.

CRASSULA MARNIERIANA Huber & Jacobs.

(4242) South Africa. Cuttings from 3.

CRASSULA MAXIMA

(4768) Cuttings from 3.

CRASSULA MONTIS-DRACONIS Dtr.

(4246) SW. Africa. Cuttings from 75.

CRASSULA NODULOSA Schoenl.

Orange Free State, Transvaal, Mozambique.

(4235) and (4381a) Cuttings from 75.

(4475) and (4477) Cuttings from 3.

CRASSULA OBLIQUA Sol.

(4767) Cape Province. Cuttings from 3.

CRASSULA OBLIQUA Sol. 'VARIEGATA'

(4232) Garden origin. Cuttings from 75.

(4537) and (4710) Cuttings from 3.

CRASSULA PHYTURUS Mildbr.

(4472) Cuttings from 3.

CRASSULA PICTURATA Boom

(4382) Cape Province, South Africa. Cuttings from 75.

(4472) Cuttings from 3.

CRASSULA PLATYSEPALA

(4684) Cuttings from 3.

CRASSULA REHMANNII Bak.

(4518) Cape Province, South Africa.

Cuttings from 3.

CRASSULA REMOTA Schoenl.

(4252) Cape Province, South Africa. Cuttings from 75.

CRASSULA RETROPILOSA Bitter

(4230) Cape Province. Cuttings from 75.

(4520) Cuttings from, 3.

CRASSULA ROTUNDIFOLIA Haw.

(4745) Cape Province. Cuttings from 3.

GRASSULA RUPESTRIS Thunb. 'MINOR'

(4478) Garden origin. Cuttings from 3.

CRASSULA SARCOCAULIS E. & Z.

(4533) Cuttings from 3.

CRASSULA SEDIFOLIA

(4469) Cuttings from 3.

CRASSULA SIMIANA Schoenl.

(4234) and (4383) Cape Province, South Africa. Cuttings from 75.

(4471) Cuttings from 3.

CRATAEGUS OXYACANTHA L. 'HORIZONTALIS'

238017 (3624) Rosaceae. Small tree with horizontally spreading branches, becoming more or less flat-topped; flowers white. A distinctive form of the species orginating at the Chenault Nursery, Orleans, France. Scions for grafting from 35.

CREMNOPHILA NUTANS Rose (Sedum cremnophila)
(4545) Crassulaceae. Mexico. Cuttings

from 3.

CREPIS RUBRA L.

(3767) Compositae. Annual, the rays red through white. Attractive. South Europe. Seeds from 13.

CROCUS CARPETANUS Boiss. & Reut.

238683 (3678) Iridaceae. Flower tube about 3" long, the throat white, the segments pale lilac with bluish veins. February to April. On open heather covered mountain slopes, alt. 3000'; Serra da Marão, between São Goncalo and Vila Real, PORTUGAL. March

23, 1957. Corms. CROCUS CLUSII J. Gay

238502 (3659) Floral tube 3-4" long, the throat white within, the segments light purple, darker towards the base; winter flowering. W. Spain and Portugal. Corms from 24.

CROSSANDRA NILOTICA Oliv.

240811 (4096) Acanthaceae. Perennial 1-2' tall; leaves ovate-acuminate, about 4" long, pubescent; flowers in dense spikes, salmon-red. Pinched back this makes a good compact floriferous pot plant. East Africa, Mozambique. Cuttings from 5. 241381 (4991) Plant from 5.

241382 (4991) Seeds from 5.

CRUCIFERAE (undetermined)

241088 (4498) Annual. Grown in the Palace Gardens, Monaco. Seeds from 56.

CRYPTOMERIA JAPONICA

242091 (5191), 242093 (5193) and 247770 'GLOBOSA' Pinaceae. Specimen 30 years old, 2 1/2" tall, of dense globose habit, the twigs more or less pendulous. Garden origin. Cuttings from 70.

247771 'JINDAI-SUGI' Dwarf. Garden origin.

Plants from 70.

244641 'KNAPTONENSIS' Plants from 80.

244642 'NANA ALBA SPICATA' Garden origin. Plants from 80.

245335 'PYGMAEA' Dwarf, about 3' tall.

Garden origin. Plants from 81.

242869 (5508) var. SINENSIS Sieb. & Zucc. Differs from the Japanese form in the more slender, pendulous branches. Central China. The Edinburgh plants were grown from seeds collected allegedly from wild plants near Kuling, Kingiang, China in 1949. Cuttings from 1.

242396 (5445) 'SPIRALIS' Distinguished by the spirally twisted and somewhat pendulous branches. The cultivar 'Spiralis' as usually grown makes a small, somewhat stunted specimen, arising no doubt as plants propagated from lateral rather than terminal shoots. Our material originates from the garden of Mrs. Bertram Bell, Fota Island, Carrigtwohill, Co. Cork, Ireland from a specimen planted in 1870, now 60' tall. Cuttings via 1.

238018 (3617) 'VILMORINIANA' Dwarf very densely branched form. Material from plant 30 years old, 14" tall. Origin at Vilmorin Arboretum, Verrieres, near Paris from a witches-broom on a normal plant. Cuttings from 35.

CUCUMEROPSIS SPP.

(4614) Cucurbitaceae. Tropical Africa. Cuttings from 3.

CUCURBITACEAE (undetermined)

Succulent, white-tomentose, slender, muchbranched. Tulear, Madagascar.

(4143) Cuttings from 75.

(4611) Cuttings from 3. CULCASIA SCANDENS Beauv.

241226 (4829) Araceae. Very large scrambling vine reaching 50 or more feet long in the wild; leaves evergreen, 4-10" long. West Africa. Cuttings from 3.

CUNONIA CAPENSIS L.

240436 (4008) Cunoniaceae. Evergreen tree, 20' tall; leaves pinnately divided, shiny above. South Africa. Handsome foliage. Cuttings from 17.

CUPHEA LANCEOLATA Ait.

242897 (5764) Lythraceae. Sticky annual, 14-18" tall; leaves oblong-lanceolate, hairy; flowers violet-purple, an inch long, showy. A good pot plant or summer annual. Mexico. Seeds from 15.

CUPRESSUS LUSITANICA Mill.

247802 'PENDULA' Evergreen tree, 40' tall; branches weeping; particularly fine selected form. Garden origin. Plants from 30. 247803 'MARIA MENDIA' Plants from 30.

CUPRESSUS MACROCARPA Gord. 'LUTEA'

247774 Growth compact; foliage bright yellow. Garden origin. Plants from 70.

CURTISIA FAGINEA Ait.

240759 (4077) Cornaceae. Evergreen tree, 20-40' tall; leaves sharply serrate, shiny above, downy beneath. South Africa. Cuttings from 20.

CUSSONIA SPICATA Thunb. (C. triptera)
240306 (3982) Araliaceae. Evergreen tree
to 20' tall; leaves digitately then pinnately divided. Interesting foliage plant.
South Africa. Cuttings from 7.

CUSSONIA THYRSIFLORA Thunb.

240760 (4073) Large evergreen shrub or small tree, 6-12' tall; leaves digitately 5-lobed, deep green, lustrous; flowers small, white, in spikes. Handsome foliage plant. South Africa. Cuttings from 20.

CYANASTRUM CORDIFOLIUM Oliv.

242665.(5639) Tecophilaeaceae (Haemadoraceae). Perennial from a tuberouslike base; leaves basal, dioscorealike, 5-6" long; flowers blue; an ornamental species. Tropical West Africa. Plants from 15.

CYANOTIS BARBATA D. Don

243890 (6114) Commelinaceae. Perennial with spreading succulent stems; leaves lanceolate, 1-2" long, acuminate; flowers blue. Himalayas. Good house plant for hanging baskets. Cuttings from 47.

CYANOTIS CRISTATA Schult. f.

238684 (3708)

Perennial, 6-18" tall with slender stems; leaves 2-4" long, 1/2-1" wide, hairy; flowers blue; tropical plant adaptable for pots or hanging baskets. Southeastern Asia. Cuttings from 24.

CYANOTIS KEWENSIS C. B. Clarke

240536 (4041) Creeping perennial with pendulous branches 6-10" long; leaves 1-2" long, hairy, green above, red beneath; flowers rose-purple, the filaments bearded with blue hairs; Travancore, India. A useful ornamental species for a basket and pots. Cuttings from 17.

CYCLAMEN GRAECUM Link

243810 (6087) Primulaceae. Flowers rose or deep carmine. Autumn. Leaves obcordate, irregularly dentate. A fine species, but hardy only in nearly frostless districts. Greece. Corms from 36.

CYCLAMEN REPANDUM Sibth. & Sm.

240033 (3934) Corms 1/2-3" in diameter; leaves white-marbeled or uniformly green; flowers rose-purple, slightly fragrant. Growing in very stiff soil, the corms 6" below soil level, but in well-drained sites, along brushy canyon and in pine woods, village of San Martino, 5 mi. west of Palermo, SICILY. May 17, 1957. Corms.

CYCLAMEN ROHLFSIANUM Ascher.
243811 (6089) A distinctive species with
dark green, nearly orbicular mottled
leaves; flowers fragrant, deep crimson.
Autumn. North Africa, Cyrenaica. Corms

from 48.

CYNANCHUM COMPACTUM Choux

(4600) Asclepiadaceae. Much-branched, leafless, succulent shrub. Madagascar. Cuttings from 3.

CYNANCHUM MESSERI (Fr. Buch.) Junelle & P. de la Bath

(4634) Scrambling, much-branched, succulent shrub; flowers terminal, yellowish.
Madagascar. Cuttings. from 3.

CYNANCHUM PERRIERI Choux

240011 (3874) and (4612) Green nakedstemmed succulent, more or less scrambling. Madagascar. Cuttings from 3.

CYNORCHIS UNCINATA H. Perr.

242527 (5616) Orchidaceae. Terrestrial. Madagascar. Plant from 28.

CYPERUS ALTERNIFOLIUS L. 'GRACILIS' 241294 (4872) Cyperaceae. Dwarf with narrower leaves than in the typical form. Cuttings from 3.

CYPERUS ALTERNIFOLIUS L. 'VARIEGATUS'
240530 (4020) Leaves and culms occasionally striped-white; the variegation
appears only when the plant is grown potbound. Cuttings from 17.

CYRTOSPERMA JOHNSTONII N. E. Br.

242015 (5176) Araceae. Leaves 2-3' long, the blade deeply sagittate, triangular in outline, the veins red, the petiole fringed; a showy foliage plant for stovehouse. Solomon Islands. Plant from 19.

CYTISUS SPP.
238520 (3648) Shrub with bright green
branches and spreading habit, 6' tall;

common on open slopes in the vicinity of Riaño, alt. 3000', Prov. Léon, Picos de Europa, SPAIN. March 17, 1957. Cuttings. 238686 (3685) and 238918 Mostly leafless shrub, 6-8' tall; flowers yellow. Along rocky sandy banks of the Rio Douro at Barca d'Alva on the Spanish border, PORTUGAL. March 25, 1957. Cuttings and seeds.

CYTISUS ALBUS Link

238503 (3662) Shrub to 6' tall, muchbranched, gracefully arching, with downy branches; leaflets white-silky; flowers white; a very fine floriferous shrub. Spain, Portugal, and NW. Africa. Cuttings from 24.

CYTISUS ARDOINII Fourn. (C. hirsutus var. ardoinii)
239366 (3837) Prostrate woody shrub, 6-8"
tall; flowers yellow with red stripes; open grassy banks in stony soil. Peira Cava, alt. 48000', above Menton, Alpes-Maritime, FRANCE. April 28, 1957. Plants. 244651 Plants from 80.

CYTISUS BATTANDIERI Maire
242628 (5169) Deciduous shrub, 8' tall,
with silky tomentose leaves; flowers
lemon yellow; a fine ornamental shrub for
mild areas. Atlas Mts., NW. Africa.
Seeds from 10.

CYTISUS GRANDIFLORUS (Brot.) DC.
238767 (3781) Evergreen shrub, 6-10' tall,
the branches arching; flowers deep yellow;
open rocky mountain slopes, Serra do
Caramulo, alt. 2400', PORTUGAL. April 6,
1957. Cuttings.

CYTISUS LINIFOLIUS Lam.
241468 (5047 Nearly evergreen shrub, 3-4'
tall; leaves 3-foliate, silvery; flowers
bright yellow. Western Mediterranean.
Seeds from 49.

CYTISUS PURPUREUS Scop.
242666 (5631) Deciduous shrub, 2' tall;
leaves trifoliate, very deep green;
flowers purple. Cuttings from 15.

CYTISUS SCOPARIUS (L.) Link
239078 (3809) Much-branched shrub, 2-3'
tall, flowers deep yellow. Along river
bank, 6 mi. north of Jaen, along road N.
323, Prov. Jaen, SPAIN. April 17, 1957.
Roots and cuttings.

#### D

DALECHAMPIA SPATHULATA (Scheidw.)
Baill. (D. roezliana)
242329 (5347) Euphorbiaceae. Perennial,
1-2' tall; leaves oblanceolate, 4-8" long;
flowers subtended by rose colored bracts.
Attractive. Mexico. Cuttings from 42.
DAPHNE ARBUSCULA Celak.
244652 Thymelaeaceae. Evergreen dwarf
shrub; flowers rose-pink. Resembles D.

cneorum. Hungary. Plants from 80.

DAPHNE GNIDIUM L.

242033 (5076) Evergreen shrub to 5' tall, much-branched; flowers at the ends of the branches, creamy white, fragrant; fruit fleshy, orange-red, summer. Open rocky slopes, alt. 300' along Granada-Vasares de Veleta road to Sierra Nevada Mts., SPAIN. August 4, 1957. Seeds.

DAPHNE LAUREOLA L.

238521 (3652) Evergreen shrub, 3'tall; leaves shining; flowers greenish yellow. Rocky ledges in beech woods, Picos de Europa, alt. 3500', on road C.615 between Riaño and Guardo, Prov. Léon, SPAIN. March 17, 1957. Cuttings.

DAPHNE OLEOIDES Schreb.

242034 (5072) Much-branched evergreen shrub, 3-4' tall; leaves about an inch long; flowers in terminal clusters, white to purplish; fruit red; open rocky slopes alt. 3000', along Granada-Vasares de Veleta road to the Sierra Nevada Mts., SPAIN. August 1, 1957. Seeds.

DEBREGESIA HYPOLEUCA Wedd.
240761 (4088) Urticaceae. Herb 18" tall
with narrowly elliptic, rugose leaves and
strongly raised veins beneath, impressed
above. E. Indies. Cuttings from 20.

DECANEMA BOJERIANA Decne.

Asclepiadaceae. Much-branched succulent leafless shrub, resembling Sarcostemma.

W. Madagascar.

(4140) Cuttings from 75. (4610) Cuttings from 3.

DECARYIA MADAGASCARIENSIS Choux (4575) Didiereaceae. Desert succulent. Madagascar. Cuttings from 3.

DECUMARIA SINENSIS Oliv.
239246 (3821) and 241311 (4950) Hydrangeaceae. Scrambling climber, 15' tall, semievergreen; leaves to 3 1/2" long, lustrous
green; flowers white in dense corymbs,
fragrant; very outstanding. Central China.
Cuttings from 33.

DELOSPERMA COOPERI (Hook. f.) L. Bolus (4189) Aizoaceae. Desert succulent, muchbranched, and forming mats only a few inches high; flowers small, showy. South Africa. Cuttings from 75.

DELOSPERMA LEHMANNII (E. & Z.) Schwant. (4776) Cape Province, South Africa. Cuttings from 3.

DELOSPERMA TAYLORI Schwant.

(4188) South Africa. Cuttings from 75. DENDROBIUM SPP.

Orchidaceae. Epiphytic. Collected by L. Maurice Mason. New Guinea. Plants from 28.

242725 (5686) and 242729 (5664) Grown under Mason 205.

242731 (5623) Grown under Mason 152. 242732 (5720) Grown under Mason 75. Section Ruizobium.

DENDROBIUM CHRYSOTROPIS Schltr.

Epiphyte. Collected by L. Maurice Mason.

239452 giganteus 242718 (5624) Grown under Mason 95. 239453 lusitanus Brot. 242719 (5648) Grown under Mason 174. (D. attenuatus) 242730 (5619) Grown under Mason 124. 239454 DENDROBIUM CYANOCENTRUM Schltr. monspessulanus L. 239455 plumarius L. Epiphyte. Collected by L. Maurice Mason. DICHOTOMANTHES TRISTANIAECARPA Kurz New Guinea. 242874 (5817) Rosaceae. Large shrub: 242720 (5620) Grown under Mason 124. 242721 (5650) Grown under Mason 103. leaves oblong, 2-3" long; twigs pubescent. With the appearance of a Cotoneaster. 242722 (5647) Grown under Mason 124. Yunnan, China. Cuttings from 14. 242723 (5698) Grown under Mason (unnum-DIEFFENBACHIA × MEMORIA-CORSII Fenzi (Dieffenbered). bachia picta x D. sequine) DENDROBIUM DICHROMA Schltr. 241228 (4834) Araceae. Leaves grayish with 242724 (5714) Epiphyte. Grown under L. Maurice Mason 61. New Guinea. Plant dark veining and spotted whitish. Cuttings from 3. from 28. DIEFFENBACHIA PICTA var. BARAQUINIANA Verschf. DENDROBIUM FLAMMULA Schltr. & Lem.) Engl. 242726 (5690) Epiphyte. Grown under 240537 (4033) Leaves green, occasionally L. Maurice Mason 195. New Guinea. Plant mottled-white, the petioles and midveins from 28. pure white. Striking. Brazil. Plant from DENDROBIUM JADUNAE Schltr. 242729 (5664) Epiphyte. Grown under 21. DIERAMA PULCHERRIMA Bak. L. Maurice Mason 205. New Guinea. Plants 239677 (3900) Iridaceae. 4-5' tall; leaves from 28. basal, to 20" long, stiff flowers at the DENDROBIUM LEUCORHODUM Schltr. ends of pendulous peduncles, white or pink Epiphyte. Collected by L. Maurice Mason. New Guinea. Plants from 28. to purple. Transvaal to the Cape Province. 242727 (5691) Grown under Mason 193. Related to Sparaxis. Corms from 8. 242728 (5695) Grown under Mason 181. DIGITALIS LUTEA L. DENDROCHILUM BARTONII (Ridl.) Schltr. Scrophulariaceae. Foxglove. Smooth peren-Orchidaceae. Epiphyte. Collected by nial 2-3' tall; leaves oblong to lanceolate, toothed; flowers many, yellow. In L. Maurice Mason. New Guinea. 242716 (5657) Grown under Mason 73. Abies alba and Pinus sylvestris woods, Peira Cava, alt. 4200', above Menton, 242717 (5687) Grown under Mason 7. 242733 (5684) Grown under Mason 7. Alpes-Maritime, FRANCE. April 28, 1957. 238267 (3836) Plants. DIANDROLYRA BICOLOR Stapf 239368 Seeds of P.I. 238267. 242587 (5509) Gramineae. Rhizomatous DIGITALIS OBSCURA L. perennial, 6-8" tall, the blades 3-5" long, acute, 1/2-1" wide, purplish at 242036 (5075) Shrub 2-3' tall, muchfirst then becoming green; a colorful branched; leaves linear-lanceolate, entire, ornamental grass; native habitat unknown; smooth; flowers nodding, reddish yellow. warm climate species. Plants from 1. Along road from Granada to Vasares de DIANTHUS BRACHYANTHUS Boiss. Veleta, alt. 3000', Sierra Nevada Mts., 242035 (5063) Caryophyllaceae. Densely SPAIN. August 4, 1957. Seeds. tufted perennial, 4-6" tall with glaucous DIGITALIS THAPSI L. leaves; flowers 1/2" wide, rose. Rock-242630 (5160) Perennial to 18" tall: garden. Open rocky slopes behind Penones leaves somewhat hairy. Open rocky granitic de San Francisco (Hotel), alt. 7500', slopes and fields, 10 mi. east of Guarda Granada-Vasares de Veleta (summit) road, on the main road to the Spanish frontier. Sierra Nevada Mts., SPAIN. August 1, 1957. August 18, 1957. PORTUGAL. Seeds. DIPLOCAULOBIUM FARINIFERUM (Schltr.) Carr. DIANTHUS BROTERI Boiss. & Reut. 242734 (5726) Orchidaceae. Epiphyte. Col-241938 (5077) Suffrutescent perennial to lected by L. Maurice Mason. New Guinea. 18" tall, much-branched; flowers lavender-Plant from 28. pink. Open rocky slopes along Mediter-DIPLOCAULOBIUM MISCHOBULBUM (Schltr.) ranean coast near Nerja, Prov. Malaga, A. D. Hawles. SPAIN. August 5, 1957. Seeds. 242735 (5661) Epiphyte. Grown under DIANTHUS, Collection of L. Maurice Mason 209. New Guinea. Plant Seeds from 13. from 28. 239445 Dianthus armeria L. DISCHIDIA ALBIDA Griff. 239446 barbatus 1. 242330 (5353) Asclepiadaceae. Epiphyte; . 11 239447 caesius J. E. Sm. succulent, more or less creeping or - 11 239448 carthusianorum L. scrambling; leaves 1 1-1/2" long, freshy. 27 caryophyllus L. 239449 Of botanical interest. Malacca. Cuttings

11

deltoides L.

239451

New Guinea.

239450

chinensis L.

from 1.

DISCHIDIA BENGALENSIS Colebr. 240822 (4102) Epiphyte, succulent-leaved: leaves oblong-lanceolate, flat; flowers inconspicuous. Of botanical interest. Tropical India to Malaya. Cuttings from 5. 241230 (4819) Cuttings from 3. 242736 (5608) Plants from 28.

DISCHIDIA SAGITTATA (Bl.) Decne.

241231 (4835) and 241232 (4835a) Epiphyte; succulent-leaved weak-stemmed climber; leaves about an inch long, more or less sagittate; flowers inconspicuous. Java. Cuttings from 3.

DISTYLIUM RACEMOSUM Sieb. & Zucc. 243812 (6079) Hamamelidaceae. Evergreen shrub to tree; leaves 1-3" long, shining green, the buds brownish; excellent broadleaved evergreen, Japan. Cuttings from 14.

DOMBEYA BURGESSIAE Gerr. 238948 (3788) Sterculiaceae. Large subtropical evergreen shrub, to 12' tall; leaves 6-8" wide, hairy; flowers pink, in long-peduncled terminal pendulous clusters; handsome. Mozambique. Cuttings from 50.

DOMBEYA × CAYEUXII André (D. masterii × D. wallichii) 243891 (6115) Small tree; flowers pink. The first known hybrid Dombeya in cultivation. Garden origin. Cuttings from 47.

DOMBEYA WALLICHII (Lindl.) Benth. & Hook. f. 240499 (4022) Deciduous tree to 30' ,tall; leaves ovate, cordate, 12" wide; flowers scarlet in globose heads on a pendulous peduncle. Fine ornamental for subtropical climate or large greenhouse. Madagascar. Plants from 17.

DORITIS PULCHERRIAM Lindl. 242737 (5678) Orchidaceae. Epiphyte. Eastern India. Plants from 28.

DRACAENA GOLDIEANA Hook. 241939 (5155) Liliaceae. Rhizomatous

perennial; leaves 7-8" long, the midrib yellowish green, the blade glossy green with alternate transverse bands of silvery green; very handsome. W. Tropical Africa. Plant from 30.

DRACAENA REFLEXA Lam. 239998 (3923) Large evergreen, muchbranched dense-headed shrub; leaves lanceolate, shiny. Narrow-leaved species of considerable ornamental merit. Madagascar.

Cuttings from 7.

DRACAENA THALIOIDES Makoy ex E. Morr. 241856 (5093) Perennial, 2-3' tall; leaves long-petiolate, spathulate, 2-ranked. Origin unknown. Cuttings from 50.

DRIMIOPSIS KIRKII Bak. 242588 (5528) Liliaceae. Bulbous; leaves 2-4" long, pale green with dark green blotches above; flowers white, on 12" scapes. July. Zanzibar. Bulbs from 28.

DRIMYS LANCEOLATA (Poir.) Baill. Winteraceae. Evergreen shrub; leaves 1-2" long, elliptic to oblanceolate, dark green, the petioles and twigs red.

Australia, Tasmania. 242331 (5380) Cuttings from 1. 243249 (6005) Cuttings from 9.

DROSANTHEMUM TAYLORI (4384) Aizoaceae. Much-branched, spreading succulent; leaves glistening; floriferous

and showy. South Africa. Cuttings from 75. DROSOPHYLLUM LUSITANICUM Link

241897 (5130) Droseraceae. Suffrutescent perennial to 12" tall; leaves densely tufted, covered with stalked glutinous glands for catching insects; flowers yellow. On open gravelly, well-drained slopes in acidic soil, associated with Erica umbellata. Habitat rarely gets rain during the summer, but night dews are frequent; 3 mi. west of Coimbra, PORTUGAL. August 13, 1957. Seeds.

DRYANDRA SPP.

238871 (3735) Proteaceae. Small evergreen tree; leaves green above, white below. Handsome foliage. Australia. Cuttings from 30.

## E

X ECHEPHYTUM PARADOXUM (Gossot) Jacob.

(Echeveria × Pachyphytum)

(4548) Crassulaceae. Garden origin. Cuttings from 3.

ECHEVERIA BACKERBERGII Poelln.

(4523) Crassulaceae. Peru. Cuttings from 3.

ECHEVERIA BARCLAYI

(4392) Cuttings from 75.

ECHEVERIA × CORYMBOSA Gossot

(4750) Garden origin. Cuttings from 3.

ECHEVERIA × 'DORIS TAYLOR'

(4740) Garden origin. Cuttings from 3.

ECHEVERIA ELEGANS var. KESSELRINGIANA Poelln. (4366) Mexico. Cuttings from 75.

ECHEVERIA ELEGANS X E. FULGENS

(4554) Garden origin. Cuttings from 3.

ECHEVERIA ELEGANS × E. WEINBERGII

(4761) Cuttings from 3.

ECHEVERIA × FALLAX Gossot

(4762) Garden origin. Cuttings from 3.

ECHEVERIA GILVA E. Walth.

(4742) Country of origin unknown. Cuttings from 3.

ECHEVERIA GLAUCA Bak. 'CRISTATA'

Garden origin.

(4368) Cuttings from 75.

(4544) Cuttings from 3.

ECHEVERIA GRUSONII var. MALLONII

(4751) Cuttings from 3.

ECHEVERIA × KIRCHERIANA

(4559) Garden origin. Cuttings from 3.

ECHEVERIA LINGUAEFOLIA Lem.

(4541) Mexico. Plants from 3.

ECHEVERIA MUCRONATA (Bak.) Schltr.

(4430) Mexico. Cuttings from 3.

ECHEVERIA OPALINA

(4774) Cuttings from 3.

ECHEVERIA PATENS

(4759) Cuttings from 3.

ECHEVERIA PILOSA J. A. Purp.

(4546) Mexico. Cuttings from 3.

ECHEVERIA PLUMOSA

(4539 Cuttings from 3.

ECHEVERIA × PSEUDOAGAVOIDES Gossot

(4563) Garden origin. Cuttings from 3.

ECHEVERIA PULCHELLA Bgr.

(4758) Mexico. Cuttings from 3.

ECHEVERIA  $\times$  PULVICOX (E. coccinea  $\times$ 

E. pulvinata)

(4538) Garden origin, V. Reiter, San

Francisco. Cuttings from 3.

ECHEVERIA PULVINATA Rose 'PLUMOSA'

(4539) Cuttings from 3.

ECHEVERIA PULVINATA Rose var. RUBRA

(4757) Cuttings from 3.

ECHEVERIA PURPOSORUM Bgr.

(4406 Mexico. Cuttings from 75.

ECHEVERIA SETOSA Rose & Purpus 'CRISTATA' (4549) Garden origin. Cuttings from 3.

ECHEVERIA × SET-OLIVER E. Walth.

 $(\underline{E}. \underline{harmsii} \times \underline{E}. \underline{setosa})$ 

(4522) and (4560) Garden origin. Cuttings

ECHEVERIA × TITUBANE

(4738) Garden origin. Cuttings from 3.

**ECHINOCEREUS** 

Cactaceae. Plants from 3.

(4677) ECHINOCEREUS CEREIFORMIS

(4676) ECHINOCEREUS FLORESII Schwarz

(4749) ECHINOCEREUS HEMPELII F. Fabe

Mexico.

(4643) ECHINOCEREUS MELANOCENTRUS

(4716) ECHINOCEREUS SCHAWARZII

Mexico.

(4717) ECHINOCEREUS TAMAULIPENSIS Fric

Mexico.

ECHINOFOSSULOCACTUS DICHROACANTHUS Brit. &

Rose

(4699) Cactaceae. Plants from 3.

ECHINOPSIS × DECAISNEANA Lem.

(4678) Cactaceae. Garden hybrid. Plant from 3.

ECHINOPSIS ROJASII Cárdenas

(4696) Bolivia. Cuttings from 3.

ECHITES RUBRO-VENOSA Lindl.

242332 (5369) Apocynaceae. Rank growing evergreen climber; leaves lanceolate, 3-4" long, green with white veins, especially the midrib. Brazil. Cuttings from 1.

EHRETIA TINIFOLIA L.

240034 (3951) Boraginaceae. Small evergreen tree with leathery leaves. West Indies. Cuttings from 7.

ELAEAGNUS PUNGENS Thunb.

241389 (5012) Elaeagnaceae. Evergreen shrub; leaves 4-5" long, 2-3" wide; leaves larger than in most cultivated forms of the species. Japan. Cuttings from 33.

ELAEAGNUS x REFLEXA Morr. & Decne.

239477 (3855) Hybrid of E. glabra × E. pungens. Very strong growing evergreen scrambler, 20 or more feet long, rarely armed with spines; leaves ovate-lanceolate, shining green above, reddish brown

beneath. Garden hybrid. Cuttings from 3. ELAEODENRON ETHIOPICA Oliv.

241019 (4425) and 241388 (5009) Celastraceae. Evergreen shrub to 3' tall, the branches often pendulous; leaves nearly oval, sharp-toothed, leathery, shiny above. Very interesting broad-leaved evergreen. Ethiopia. Cuttings from 33.

ELAEODENDRON GLAUCUM Pers.

240503 (4029) Evergreen tree to 20' tall; leaves lustrous. Ceylon. Cuttings from 17.

ELAEODENDRON ILICIFOLIA Tenore

240645 (3976) Evergreen tree, 20' tall, with hollylike leaves. Described originally from cultivated material. Seed from 7.

EMMENOPTERYS SPP. (Grown as E. forestii)
243250 (5953) Rubiaceae. Deciduous tree,
20' tall; leaves 6-8' long, lustrous green
above, the petioles and buds reddish.
China. Cuttings from 11.

EMMENOPTERYS HENRYI Oliv.

239678 (3890) Deciduous tree; leaves about 8" long, 4" wide, oval or ovate. Described by several collectors of Chinese plants as one of the most beautiful of flowering trees; it has not yet flowered in cultivation. China. Cuttings from 8.

ENSETE 'MAURELLII'

237923 (3590) Musaceae. An ornamental species with dark red leaves. Probably Ethiopia. Plant from 51.

EPACRIS LONGIFLORA Cav.

243960 (6164) Epacridaceae. Evergreen shrub, 4-5' tall, heathlike; leaves 1/4-1/2" long; flowers crimson and white. Tasmania. Cuttings from 14.

EPACRIS PULCHELLA Cav.

243961 (6144) Small evergreen shrub with heathlike leaves; flowers white or reddish. The culture the same as for Erica. New South Wales. Cuttings from 14.

EPHEDRA SPP.

243296 (6043) Ephedraceae. Plants from 15. EPHEDRA ALTISSIMA Desf.

239478 (3851) Vigorous woody scrambler to 20' long with naked green, horsetaillike stems; fruit red with juicy flesh. Handsome in fruit; probably hardy only far south or west. North Africa; would become a fine greenhouse climber. Cuttings from 3.

EPHEDRA AMERICANA var. ANDINA (Poepp. & Endl.)
Stapf
243292 (6045) Low spreading evergreen

shrub to 3' tall with naked branches. Suitable for rock-garden. Chile. Plants from 15.

EPHEDRA FRAGILIS Desf.

240404 (3989) Much-branched erect shrub with naked green stems, 5-6' tall. Sandy banks along the coastal road at Cinisi, west of Palermo, SICILY. May 19, 1957. Cuttings.

EPHEDRA GERARDIANA Wall.

243294 (6047) Low shrub to 2' tall with

green naked stems and branches. Himalayas. Plants from 15.

EPHEDRA MAJOR Host.

243295 (6046) Upright shrub to 6' tall, densely branched, the stems naked, dark green. A robust and large-growing species. Mediterranean to India. Plants from 15.

EPHEDRA MONOSTACHYA L.

242293 (6044) Prostrate. Siberia. Cuttings from 15.

EPIBLASTUS AURICULATUS Schltr.

242738 (5697) and 242739 (5701) Orchidaceae. Epiphyte. Grown under L. Maurice Mason 42. New Guinea. Plants from 28.

EPIBLASTUS ORNITHIDIOIDES Schltr.

242740 (5699) Epiphyte. Grown under L. Maurice Mason 41. Plants from 28.

EPIPHYLLUM SPP.

242589 (5516) Cactaceae. Stems flat, 2-3" wide, green; flowers white, long-tubular, 4-5" long. Cuttings from 28.

EPISCIA LILICINA Hanst.

242590 (5537) Gesneriaceae. Rhizomatous perennial with long-creeping rootstalks, rooting at the nodes; leaves broadly ovate, 2-3" long, serrate-dentate, deep green above, more or less rugose, uniformly short pubescent above and below; flowers lavender, the petals fringed. Hanging basket plant of much beauty. Costa Rica. Cuttings from 28.

EPISCIA PUNCTATA Hanst.

242591 (5536) Rhizomatous perennial, stoloniferous; leaves more or less tufted at the tips of the branches, ovate to elliptic, 3-4" long, 1 1-1/2" wide, serrate; flowers yellow with purple dots. Guatemala. Cuttings from 28.

ERANTHEMUM CINNABARINUM Wall.

242592 (5524) Acanthaceae. Perennial to 12" tall; leaves about 8" long, 2" wide; flowers often fascicled, orange-red; very decorative. India, Burma. Cuttings from 28.

ERANTHEMUM WATTII Stapf.

242593 (5515) Perennial to 2' tall; flowers deep lavender-violet, 1 1-1/2" across; very decorative. India. Cuttings from 28.

ERCILLA VOLUBILIS A. Juss.

242273 (5342) Phytolaccaeceae. Evergreen, rampant climber; leaves ovate, 1-2" long. Peru. Cuttings from 1.

ERDISIA MAXIMA Backbg.

(4199) Cactaceae. Stems much-branched at base; flowers often brightly colored. Peru. Plant from 75.

ERIA SPP.

242741 (5731) Orchidaceae. Epiphyte. Grown under L. Maurice Mason 190. New Guinea. Plants from 28.

ERICA AUSTRALIS L.

238687 (3689) Ericaceae. Spanish Heather. Evergreen shrub, 4-6' tall, much-branched; leaves linear, about 1/4" long; flowers

lavender; one of the many color forms of the species; on open rocky banks near Covilha on road towards Manteigas, alt. 1,500', foothills of Serra da Estrella, PORTUGAL. March 25, 1957. Cuttings. 238688 (3690) Color form; flowers light rosy purple; same locality as P. I. 238687. Cuttings.

238689 (3691) Color form; flowers dark rose-purple; same locality as P.I. 238687. Cuttings.

241898 (5131) In pine woods along the Rio Mondego, 2 mi. east of Coimbra, PORTUGAL. August 13, 1957. Seeds.

ERICA LUSITANICA Rudolph

238690 (3696) Portuguese Heather. Evergreen shrub, 4-6' tall, much-branched; leaves linear, 1/4" long; flowers white, clustered; along stream banks near Covilha on road to Monteigas, PORTUGAL. March 25, 1957. Cuttings.

ERICA UMBELLATA L.

241899 (5133) Evergreen shrub, 12-20" tall; leaves very small, linear; flowers deep lavender-purple. Spring. Dry, open gravelly slopes 2 mi. west of Coimbra, PORTUGAL. August 13, 1957. Seeds.

ERIGERON SPP.

Compositae. Collection of summer-flowering hybrids. Plants from 66.

243962 'FELICITY' - clear deep pink; 1-1/2-2'.

243963 'FESTIVITY' - lilac; 2'.

243964 'MESA GRANDE' - blue.

243965 'SINCERITY' - light mauve blue, yellow center.

243966 'UNITY' - bright pink; 1-1/2-2'.

ERINACEA PUNGENS Boiss.

242037 (5059) Leguminosae. Hedgehog Broom. Densely tufted cushion plant, 12-18" high and as much across, the branches naked and spine-tipped, yellowish green; flowers blue, about 1' long. Open slopes, alt. 6000' along road to the summit of the Sierra Nevada Mts., SPAIN. August 1, 1957. Seeds.

ERIOCACTUS LENINGHAUSII (K. Sch.) Schoff. (4224) Cactaceae. Plants from 75.

ERIOCACTUS LENINGHAUSII K. Sch. 'CRISTATA' (4675) Garden origin. Cuttings from 3.

ERYNGIUM PANDANIFOLIUM Cham. & Schlecht. 240617 (4048) Umbelliferae. Rank, robust perennial, 10-15' tall; leaves strapshaped, 4-6' long, spine-tipped; flowers purplish, in small round heads. One of the largest species of the genus. Uruguay. Plants from 22.

ERYTHRINA SPP.

Leguminosae

239541 (3857) Seedling from 3. 241322 (4946) Small tree with arching branches; flowers scarlet. Very showy. Cuttings from 33.

ERYTHRINA CORALLODENDRON L.

238949 (3791) Tree 20' tall, the old

branches unarmed, the new ones spiny; flowers scarlet, terminal on the ends of the leafless branches; handsome small flowering tree. Spring. Tropical America. Plants from 50.

ERYTHROXYLON COCA Lam.

242333 (5403) Erythroxylaceae. Evergreen, tropical shrub to 10' tall or more; leaves narrowly oval, 2-3" long; flowers greenish white or yellowish. Source of 'cocaine.' Tropical South America. Cuttings from 1.

ESCALLONIA MACRANTHA Hook. & Arn. 242094 (5187) Saxifragaceae. Evergreen shrub; flowers pink. Selected form by Donard Nursery, Newcastle, Ireland. Cuttings from 64.

ESCALLONIA MACRANTHA Hook & Arn. 'PRIDE OF DONARD'

242095 (5188) Flowers a good clear light red. Garden origin by Donard Nursery. Cuttings from 64.

ESCALLONIA 'PEACH BLOSSOM'
242097 (5189) Flowers uniformly peachpink. Garden origin by Donard Nursery.
Cuttings from 64.

ESCALLONIA 'WILLIAM WATSON'
242096 (5185) Flowers crimson, borne profusely at the branch ends. Blooms over a
longer period than most sorts; one of the
hardier types. Garden origin by Donard
Nursery. Cuttings from 64.

EUCOMMIA ULMOIDES Oliv. 240797 (4099) Eucommiaceae. Deciduous tree, 30' tall; leaves elm-like. Hupeh, China. Cuttings from 5.

EUCRYPHIA × NYMANSENSIS Bausch 'NYMANSAY'

(E. cordifolia × E. glutinosa)

242923 (5841) Eucryphiaceae. Small evergreen tree, 30' tall; leaves 1-3 1/2"

long, 1/2-1 1/4" wide, oblong, uniformly serrate-toothed; flowers white, 2" wide.

Garden hybrid. Distinctive for the foliage and showy white flowers. Cuttings from 67.

EUGENIA MAGNIFICA Mart.

240437 (4006) Myrtaceae. Evergreen tree;
leaves 6-10" long, bullate, shiny above.
Beautiful foliage plant. Brazil. Cuttings
from 17.

EUGENIA MYRIOPHYLLA Casaretti
234334 (5386) Evergreen shrub, 3-4' tall,
much-branched; leaves linear, 1-1 1/4"
long, 1/4" wide, dark green, needle-like,
soft. Brazil. Cuttings from 1.

EUGENIA PUNGENS Berg.
241295 (4938) Evergreen round-headed small
tree with very attractive shiny ovate
leaves. N. Argentina. Cuttings from 3.

EULOPHIA RAMOSA Ridl. 242742 (5681) Orchidaceae. Epiphytic. Collected by L. Maurice Mason. Madagascar. Plant from 28.

EULYCHNIA ACIDA Phil. (4299) Cactaceae. Chile. Plant from 75.

EUONYMUS SPP.

243324 (6022) Celastraceae. Small evergreen tree, 20' tall. Cuttings from 9. EUONYMUS PENDULUS Wall.

240341 (3995) Evergreen tree to 50' tall; leaves to 4" long, abruptly pointed, dark green, finely serrate; flowers greenish or yellowish. Makes a fine specimen tree in a mild nearly frostless climate. Himalayas. Cutting from 34. 240618 (4051) Cuttings from 22.

243251 (6002) Cuttings from 9.
EUONYMUS WILSONII Sprag.
242274 (5321) Small evergreen tree;
leaves mostly oblanceolate, 2-3" long,
acuminate, dark green above, whitish below.
W. China. Cuttings from 1.

EUPATORIUM OMPHALIAEFOLIUM Kunth 241916 (5103) Compositae. Large evergreen shrub, 12' tall; leaves somewhat fleshy, lustrous above. Mexico. Cuttings from 63. EUPATORIUM SORDIDUM Less.

242668 (5642) Rank-growing shrub, 6' tall; young leaves bronze-green, the petioles reddish, the older leaves 6-8" long; flower heads violet. Good pot plant while Young. Mexico. Cuttings from 15.

EUPHORBIA SPP. (Collected as E. robbiae)
242875 (5807) Euphorbiaceae.
Rhizomatous perennial, 10-12" tall; stems
limber, green; leaves mostly terminal,
deep green. With the aspect of Pachysandra.
Plants from 14.

EUPHORBIA BARNARDII W., D., S. (4299) Transvaal. Plants from 75 EUPHORBIA BEAUMIERANA Hook. f. & Coss. 240012 (3871) and (4626) Morocco. Plants from 3.

EUPHORBIA BIGLANDULOSA Desf. ssp. BROTERI Samp. 238691 (3683) Perennial, 12-18" tall; inflorescence bracts chartreuse. Rocky open slopes, Serra do Mogadouro, alt. 1800', between Mogadouro and Costelo Branco, PORTUGAL. March 24, 1957. Plants.

EURHORBIA BOTHAE Lotsy & Godd. (4625) Cape Province, South Africa Cuttings from 3.

EUPHORBIA BRACHIATA E. Mey. (4133) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA CAERULESCENS Haw. 240013 (3869) Spiny fleshy succulent. South Africa. Plants from 3.

EUPHORBIA CALLICULINA
(4130) Cuttings from 75
EUPHORBIA CAPUT-MEDUSAE L.

(4131) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA CAPUT-MEDUSAE L. 'CRISTATA'

(4136) Garden origin. Cutting from 75.

EUPHORBIA CAPUT-MEDUSAE L. 'MISSION ZIGUDA'

(4132) Dwarf sprawling shrub. Garden ori-

gin. Cuttings from 75.

EUPHORBIA CHARACIAS L.

238768 (3769) Much-branched perennial with succulent stems, 3' tall. Along roadside and fields, near Venda do Brasil and near Penela, southeast of Codiexa, PORTUGAL. April 5, 1957. Cuttings.

EUPHORBIA DECARYI A. Guill

(4619) SW. Madagascar. Cuttings from 3.

EUPHORBIA DELPHINENSIS

241420 (5031) Dwarf, spiny-stemmed perennial; leaves obovate, mucronate; flowers white. Cuttings from 3.

EUPHORBIA DREGEANA E. Mey.

(4608) Cape Province, South Africa. Cuttings from 3.

EUPHORBIA FRANCOISII Leandr.

(4622) Madagascar. Cuttings from 3.

EUPHORBIA FRUTICOSA Forsk.

240014 (3870) Plant from 3.

EUPHORBIA FUNIFERA

240020 (3881) and (4564) Cuttings from 3.

EUPHORBIA GOSSYSPINA Pax

240015 (3879) and (4607) Erect muchbranched leafless green-stemmed succulent. Cuttings from 3.

EUPHORBIA HAMATA (Haw.) Sweet

(4320) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA HORRIDA Boiss.

(4127) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA INFESTA Pax

(4125) Eritrea. Cuttings from 75.

EUPHORBIA INTISY Drake

240017 (3878) and (4581) Much-branched, sprawly leafless shrub with round branches. Has been exploited as a source of rubber. Madagascar. Cuttings from 3.

EUPHORBIA INTISY MAINTYI (Decorse) E. H. Poiss. 240016 (3875 and (4583) Madascar. Cuttings from 3.

EUPHORBIA ISALOENSIS Drake

(4620) SW. Madagascar. Cuttings from 3.

EUPHORBIA JANSENVILLENSIS Nel

(4128) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA LARO Drake

240018 (3882) and (4586) Much-branched, terete, green-stemmed succulent. Madagascar. Cuttings from 3.

EUPHORBIA LEUCODENDRON Drake

(4589) Madagascar. Cuttings from 3.

EUPHORBIA LOPHOGONA Lam.

(4440) and (4571) Madagascar. Cuttings from 3.

EUPHORBIA MELOFORMIS Ait.

(4125) Dwarf, spineless barrel-shaped succulent. Cape Province, South Africa. Plant from 75.

EUPHORBIA × MILLII Desm. (E. splendens × E. splendens var. bojeri)

(4617) Stems more erect; involucral bracts somewhat larger and deeper scarlet than in E. splendens. Cuttings from 3.

EUPHORBIA MISERA Benth.

(4590) California. Cuttings from 3.

EUPHORBIA OBTUSIFOLIA Poir.

(4604) Canary Islands. Cuttings from 3.

EUPHORBIA ONCOCLADA Drake

Madagascar.

(4137) Cuttings from 3.

(4591) Cuttings from 75.

EUPHORBIA ORABENSIS Dtr.

(4319) SW. Africa. Cuttings from 75.

EUPHORBIA ORTHOCLADA Bak.

(4623) Madagascar. Cuttings from 3.

EUPHORBIA PERPEÀ N.E.Br.

(4129) Cape Province, South Africa.

Cuttings from 75.

EUPHORBIA PHILLIPSIAE N.E. Br.

240021 (3872) Strongly ribbed, fleshy perennial. Plant from 3.

EUPHORBIA PHOSPHOREA Mart.

(4606) Brazil. Cuttings from 3.

EUPHORBIA PLAGIANTHA Drake

(4587) Madagascar Cuttings from 3.

EUPHORBIA PLUMERIOIDES Teijsm. ex Hassk.

(4603) Java. Cuttings from 3.

EUPHORBIA PSEUDOGLOBOSA Marl.

(4135) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA PTERONEURA A. Berg.

240022 (3880) Succulent with angled pinkish-green stems. Cuttings from 3.

EUPHORBIA PULVINATA Marl.

(4126) Cape Province, South Africa. Cuttings from 75.

EUPHORBIA SCHAEFERI Dtr.

(4605) SW. Africa. Cuttings from 3.

EUPHORBIA SCHIMPERI Presl

(4134) S. Arabia, Aden. Cuttings from 75.

EUPHORBIA SIKKIMENSIS Boiss.

243967 (6176) Robust perennial, 4-5' tall; involucral leaves yellow. Himalayas. Divisions from 14.

EUPHORBIA SIPOLISII N. E. Br.

240023 (3873) Succulent often with reddish terete stems, branched from the base. Brazil. Plant from 3.

EUPHORBIA SPLENDENS var. BOJERI (Hook.)

Leandri

240019 (3888) and (4618) Prickly-stemmed perénnial subshrub with leaves 4" long. Scarlet flowers. Flowers superior to those of E. splendens. Madagascar.

EUPHORBIA SPLENDENS var. HISLOPII (N. E. Br.) Leandri

(4621) Madagascar. Cuttings from 3.

EUPHORBIA STENOCLADA H. Bn.

(4630) Madagascar. Cuttings from 3.

EUPHORBIA TIRUCALLII L.

(4586) Tropical to South Africa. Cuttings from 3.

EUPHORBIA TRANSVAALENSIS Schltr.

(4572) Transvaal. Cuttings from 3.

EUPHORBÍA TUBEROSA L.

(4588) Cuttings from 3.

EUPHORBIA WULFENII Hoppe

Evergreen succulent-stemmed perennial, 3' tall: leaves silvery gray. Handsome. Dalmatia.

243968 (6170) Plants from 14. 243969 (6153) Plants from 48.

EURYA JAPONICA Thunb.

Theaceae. Large evergreen shrub, 10' tall; leaves lustrous: fruit bright crimson. Grown under Forrest 26156 from NW. of Tengyueh, Mid W. Yunnan, alt. 8000', China. Introductions from 9. 243287 (5970) Cuttings. 243333 (6025) Seeds.

FACHEIROA BLOSSFELDIORUM (Werd.) Marshall (4307) Cactaceae. Brazil. Cuttings from 75.

FAGUS SYLVATICA L. 'TORTUOSA' 238019 (3605) Fagaceae. The branches tortuous and pendulous. Garden origin. Cuttings from 2.

FAUCARIA

Aizoaceae. Tiger's Chaps, Cat's Chaps. Dwarf mat-forming essentially stemless succulents; leaves flat above, very convex on the underside or keeled, spathulate; slender-toothed; flowers yellow, showy. Karroo, South Africa.

FAUCARIA ACUTIPETALA L. Bolus

(4327) Cuttings from 75.

(4500) Cuttings from 3.

FAUCARIA ARMSTRONGII L. Bolus (4501) Cuttings from 3.

FAUCARIA BOSSCHEANA Schwant.

(4280) Cuttings from 75.

FAUCARIA BRITTENIAE L. Bolus

(4499) Cuttings from 3.

FAUCARIA CORONATA L. Bolus

(4463a) Cuttings from 3. FAUCARIA CRADOCKENSIS L. Bolus

(4331) Cuttings from 75.

(4461) and (4502) Cuttings from 3.

FAUCARIA DUNCANII L. Bolus

(4282) Cuttings from 3.

(4462) Cuttings from 75.

FAUCARIA FELINA var. JAMESII L. Bolus Cape Province, South Africa.

(4328) Cuttings from 75.

(4460) Cuttings from 3.

FAUCARIA GRANDIFLORA

(4456) Cuttings from 3.

FAUCARIA HOOLEAE L. Bolus

(4458) Cuttings from 3.

FAUCARIA LONGIDENS L. Bolus

(4329) Cuttings from 75. (4459) Cuttings from 3.

FAUCARIA LONGIFOLIA L. Bolus

(4332) Cuttings from 75. (4455) Cuttings from 3.

FAUCARIA LUPINA (Haw.) Schwant. (4457) Cuttings from 3.

FAUCARIA PAUCIDENS N. E. Br. (4271) Cuttings from 75.

FAUCARIA RYNEVELDIAE L. Bolus (4288) Cuttings from 75.

FAUCARIA SMITHII L. Bolus

(4454) Cuttings from 3. FAUCARIA SPECIOSA L. Bolus

(4451) Cuttings from 3.

FAUCARIA SUBINDURATA L. Bolus (4326) Cuttings from 75.

(4453) Cuttings from 3.

FAUCARIA UNIONDALENSIS L. Bolus (4452) Cuttings from 3.

FERN (Undet.)

241087 (4635) Fronds strap-shaped, 3-4' long, leathery. A tropical species. Spores from 56.

FICUS ALTISSIMA Bl. var. LACCIFERA 240074 (3964) Moraceae. Large evergreen tree, 40-50' tall. Malaya. Cuttings from 13.

FICUS ARBUTIFOLIA Link 'VARIEGATA' 240762 (4074) Evergreen shrub; leaves 3-4" long, ovate, variegated. Garden origin. Cuttings from 20.

FICUS AURICULATA Lour.

240504 (4023) Deciduous tree, 30' tall; leaves shiny above, pubescent below. Indo China. Cuttings from 17.

FICUS BELLENGERI C. Moore

240126 (3977) Evergreen tree to 50' tall; leaves 6-8" long. Australia. Cuttings from 7.

FICUS BIBRACTEATA Miq.

240002 (3916) Evergreen tree to 60' tall; trunk diameter 3-4'; E. India. Cuttings from 7.

FICUS CANNONII (Bull.) N. E. Br. 242870 (5507) Tree; leaves 8-10" long, purplish red throughout. Elegant foliage. Society Islands. Cuttings from 1.

FICUS CAPENSIS Thunb.

240111 (3968) Deciduous tree, 30' tall. South Africa. Cuttings from 7.

FICUS GIGANTEA H. B. K.

240000 (3917) Large tree, 40'. Venezuela. Cuttings from 7.

FICUS GLABELLA BL.

238769 (3772) and 241900 (5128) Evergreen tree, 20' tall; leaves 4-5" long, coriaceous, lustrous. Java. Cuttings from 13.

FICUS HETEROPHYLLA L. f.

240001 (3920) Small evergreen tree; leaves linear-lanceolate. Indonesia. Cuttings from 7.

FICUS MAGNIFOLIA F. Muell.

240405 (3980) Evergreen tree, 40' tall; leaves large, 6-8" long, 4-5" wide. Australia. Cuttings from 7.

FICUS MAGNOLIOLDES Borzi

238950 (3789) Large evergreen tree 60' tall, with stilt-roots; leaves 6-8" long, lustrous, deep green. A fine ornamental fig, originally described from plants in the Botanical Garden, Palermo, Sicily.

Habitat unknown. Cuttings from 13. 240075 (3960) Cuttings from 7.

FICUS PRINCEPS Kunth & Bouché
240619 (4052) Leave ovate, dentate,
acuminate. Plant seen only about 2' tall
but perhaps stunted, with somewhat
pendulous branches. Brazil.
Cuttings from 22.

FICUS PUMILA L. (Mature form)
238770 (3759) Creeping Fig. Leaves dimorphic,
the mature foliage with leaves 3-4" long.
China. Japan. Cuttings from 13.

FICUS PUMILA L. 'VARIEGATA' (Juvenile form) 241233 (4784) Creeping evergreen shrub with white-variegated foliage. Garden origin. Cuttings from 3.

FICUS RUBIGINOSA Desf. 'VARIEGATA'
242016 (5166) Evergreen tree; leaves
4-5" long, mottled white-variegated.
Australia. Cuttings from 10.

FICUS VOGELII Miq. 240505 (4027) Evergreen tree, 30' tall; leaves lustrous above, white tomentose beneath. Nigeria. Cuttings from 17.

FOKIENIA HODGINSII A. Henry & H. H. Thomas Small evergreen tree to 20' tall. Very handsome in spots. Fokien Prov., China. 243970 (6154) Cuttings from 14. 243971 (6143) Cuttings from 31.

FORTUNEARIA SINENSIS Rehd. & Wils. 239679 (3894) Hamamelidaceae. Deciduous shrub, 10-15' tall. China. Cuttings from 8.

FRAGARIA 'SONJANA'
242397 (5183) Rosaceae. Climbing Strawberry. Originated by Hummel in Germany.
An everbearing type with fruit produced
on the stolons. Plants from 65.

FRAILEA PSEUDOGRAHLIANA Fric ex Backbg. & F. M. Knuth

(4482) Cactaceae. Plant from 3.

FRAXINUS EXCELSIOR L. 'PENDULA'
239079 (3807) Oleaceae. Deciduous tree
with pendulous branches. Usually grafted
on a standard. Garden origin. Scions
from 54.

FREYLINIA CESTROIDES Colla 238735 (3732) Scrophulariaceae. Large evergreen shrub with willow-like leaves. South Africa. Cuttings from 30.

FUSCHIA INTEGRIFOLIA Cambess. (F. affinis) 240506 (4026) Evergreen shrub, 6' tall. Very vigorous. Brazil. Cuttings from 17.

#### G

GARCINIA TINCTORIA (DC.) Wight (G. xanthochy-rum) Guttiferae. Evergreen scrambling shrub, the trunk woody, the upper branches pendulous; leaves 6-8" long. India. Seeds from 42.

GARDENIA ROTHMANNIA L. f. 239680 (3892) Rubiaceae. Small evergreen tree or large shrub to 15' tall; leaves 2-3" long, hairy; flowers white, fragrant. South Africa. Plant from 8.

GARRYA FADYENII Hook.

240342 (3999) Garryaceae. Small evergreen tree, 20' tall. Jamaica. Cuttings from 34.

GARRYA × THURETII Carr. (G. elliptica × G. fadyenii) Small evergreen tree, 15' tall. Originated at Villa Thuret, Cap d'Antibes, Alpes-Maritime, France about 1862. 241323 (4971) Cuttings from 57. 242398 (5419) Cuttings from 1.

GASTERIA BICOLOR Haw.

(4729) Liliaceae. Cape Province, South Africa. Cuttings from 3.

GASTERIA GRACILIS Bak.

(4402) Natal. Cuttings from 75.

GASTERIA GRANDIPUNCTATA (4683) Cuttings from 3.

GASTERIA MACULATA var. DREGIANA Bgr. (4403) Cape Province, South Africa. Cuttings from 75.

GAULTHERIA FORRESTII Diels

Ericaceae. Evergreen shrub, 5' tall, the branches arching; fruit medium blue. Extremely attractive in fruit. China. Grown under Forrest 26181 from around Tengyueh, Mid W. Yunnan, alt. 7-9000', China. Introductions from 9.

Introductions from 9. 243252 (5974) Cuttings. 243253 (5975) Seeds.

GAULTHERIA TRICHOPHYLLA Royle
243331 (6037) Low evergreen, spreading
shrub, 18-24" tall, much-branched; stems
reddish; flowers white; berries black. An
elegant low evergreen shrub. W. China,
Himalayas. Cuttings from 9.

XGAULTHETTYA WISLEYENSIS (March.) Rehd. (Gaultheria shallon × Pernettya mucronata) 243813 (6078) Ericaceae. Evergreen spreading shrub, 2' tall; leaves 2-4" long. Garden hybrid. Cuttings from 14.

GAZANIA (unnamed hybrids)
241296 (4871) Compositae. Leaves whitetomentose below, less so above; rays yellow with black eye. Cuttings from 3.
241297 (4871) Seeds of P.I. 241296.
241298 (4873) Rays good clear yellow. Cuttings from 3.
241299 Seeds of P.I. 241298.
241390 (5001) Rays white with black eye.
Cuttings from 23.

GAZANIA (Named hybrids) Collection from 68 unless otherwise noted.

242939 (5914) 'ARIEL' Rays yellow with green and black centers.

242940 (5848) 'AUDREY' Dwarf; leaves silvery; rays orange.

243301 (5875) 'BERNARDETTE' Rays pinkish, blackish green eye.

blackish green eye. 242941 (5859) 'BETTY' Very strong grower;

rays yellow, green-eyed. 242942 (5855) 'BRIDGET' 242943 (5894) 'BUFF' Rays buff-colored.

(5912) 'BURNT ORANGE' 242947 (5908) 'WISLEY DCX7' Like a paler 242944 (5853) 'CHRISTOPHER' Rays mauve-'Bridget'. 242966 (5911) 'WISLEY 509' pink with a dark eye. 243304 (5917) 'WISLEY 537' Rays mauve pink 242945 (5864) 'DAPHNE' Rays yellow, with with green eye. good green eye. 242946 (5861) 'DAVID' Rays red-brown, with 242967 (5896) 'WISLEY 679' Rays large orange, with black eye. green eye. 242948 (5869) 'FAITH' Rays clear yellow 243302 (5888) 'WISLEY 708' Rays yellow, with a green eye; foliage green. Vigorous the disk flowers blackish. sort, one of the best. 242968 (5863) 'WISLEY 718' Rays yellow 242949 (5872) 'FILIGREE' Excellent silvery with small dark eye. deeply cut leaves; rays orange-yellow with 243299 (5865) 'WISLEY 767' Rays glowing black eye. orange. 242950 (5892) 'FRANCES' Dwarf; rays yellow. 242970 (5867) 'WISLEY 770' Rays deep 242205 (5260) and 242951 (5852) 'FREDDIE' brown-red with dark eye. Leaves lustrous green above, white tomen-242971 (5898) 'WISLEY 772' Dwarf, not very tose below: rays burgundy-colored, an unvigorous; rays orange with well-marked usual color in Gazania, unlike all others. dark eye. Cuttings from 1 and 68. 242972 (5868) 'WISLEY 777' 242973 (5889) 'WISLEY 780' Rays whitish 242952 (5885) 'GEORGE' Rays red-brown with brown eye. to cream colored with dark eye. One of the best whites. 242953 (5849) 'GOLD' Gray foliage; rays solid orange. One of the best.

242974 (5905) 'WISLEY 782' Rays very large,

242954 (5913) 'HADDON'S GOLD' Very vigorous, trailing, with gray deeply cut
foliage; rays orange. Good one.

292955 (5860) 'HAZEL' Rays red-brown.

242976 (5909), 242976 (5902) and 243305

242956 (5884) and 243306 (5984) 'JOAN'

Yeary vigorous: rays light orange.

Cuttings from 69 242956 (5884) and 243306 (5984) 'JOAN'
Very vigorous; rays light orange. Cuttings from 68. 242992 (5886) 'KETURAH' Rays cream, fading to pure white with greenish eye. Good 243300 (5873) 'WISLEY 789' 243300 (5873) 'WISLEY 792' 243300 (5873) 'WISLEY 792' Silvery foliage; white. rays deep orange, black eye. 242957 (5857) 'LILAC PINK' 242979 (5874) 'WISLEY 793' Dark green foli-242958 (5901) 'LILIAN' Strong grower; age; rays burnt-orange with green eye. rays red-brown. 242980 (5876) 'WISLEY 795' Vigorous; rays 242959 (5893) 'MARGARET' Dwarf; rays medium brown-red. 242981 (5903) 'WISLEY 796' Vigorous; dark green foliage; rays clear yellow.
242982 (5877) 'WISLEY 797' Vigorous; green
foliage; rays large orange with black eye.
243302 (5878) 'WISLEY 798' Leaves gray. 242960 (5897) 'MAURICE' Rays orange and 242969 (5866) 'PATRICK' Rays glowing orange, good eye. One of the best. 243302 (5878) 'WISLEY 798' Leaves gray; rays light orange.
242983 (5879) 'WISLEY 799' Spreading habit, 242961 (5856) 'RED TORCH' 242937 (5910) 'REPENS' Pinnately divided green foliage; rays small, orange. vigorous; rays very large yellow with 242962 (5858) 'ROGER' finely marked green and black eye. 242963 (5850) 'ROSEMARY' Rays orange-yel-242984 (5880) 'WISLEY 800' Rays red-brown with brown eye. 242964 (5851) 'SILVER GILT' 242985 (5906) 'WISLEY 801' Rays flame yellow with a dark ring in center. 243298 (5862) 'SNUGGLEBUNNY' Rays light orange-yellow. Excellent. 242986 (5904) 'WISLEY 802' Dwarfish; rays × SPLENDENS Hends. Rays deep orange with orange with brown and black eye. black eye. Well-known old hybrid. orange with brown and black eye. 242987 (5900) 'WISLEY 804' Foliage muchblack eye. Well-known old hybrid. 241298 (4873) Cuttings from 3. divided; rays red-brown. 242988 (5881) 'WISLEY 805' Vigorous; rays 241299 (4873) Seeds from 3. 241405 (5019) Cuttings from 3. red-brown with brown eye. 242204 (5267) Cuttings from 1. 242990 (5899) 'WISLEY 807' Medium vigorous 242938 (5916) Cuttings from 68. plant; rays cream colored with darker 242938 (5916) Cuttings from os.

243297 (5854) 'SUNBEAM' Rays yellow, disk green eye. Good white.

242991 (5883) 'WISLEY 808' Gray foliage; vigorous; rays glowing orange, with dark 242228 (5290) 'SUNFIRE' Rays burnt orange with a black eye. Cuttings from 1. 242965 (5915) 'TOLLS ORANGE' Gray foliage; 242993 (5887) 'WISLEY 812" Rays orange with dark greenish eye. rays bright orange. 242989 (5882) 'VERA' Like a more vigorous GAZANIA RIGENS Moench (Selected)

242206 (5274) Leaves silvery gray; rays

'Audrey'.

yellow with black eye. A very good vigorous sort. Habitat unknown. Possibly of hybrid origin. Cuttings from 1.

GENISTA AETHNENSIS (Bivona) DC.

242631 (5163) Leguminosae. Evergreen shrub, 6-8' tall, much-branched; stems green, almost leafless; flowers golden yellow. Fine plant. Sicily. Seeds from 69.

GENISTA CINEREA DC.

238692 (3682) Shrub to 4' tall; flowers bright yellow. Along rocky sandy banks of the Rio Douro at Barca d'Alva, PORTUGAL. March 24, 1957. Cuttings.

239057 (3802) Much-branched, nearly leafless shrub, 4-6' tall; flowers 1/2" long, deep yellow; very floriferous and showy. Open rocky slopes and cliffs along Mediterranean coast, 12 mi. west of Motril, Prov. Malaga, SPAIN. April 14, 1957. Cuttings.

239077 (3808) Densely branched shrub, 2-4' tall; flowers deep yellow. Open rocky slopes and along road cuts, 9 mi. n. Granada, road N. 123, Prov. Granada, SPAIN. April 17, 1957. Cuttings.

GENISTA EQUISETIFORMIS Spach

239071 (3803) Much-branched, suffrutescent subshrub, 15" tall; aphyllous; flowers yellow, subumbellate, terminal. Open rocky slopes and cliffs along Mediterranean coast, 12 mi. west of Motril, Prov. Malaga, SPAIN. April 14, 1957. Very attractive, long-flowering. Cuttings and roots. 241950 (5082) Open rocky slopes near Motril, Prov. Malaga, SPAIN. August 5, 1957. Plants were blooming for the second time after the spring crop had been cut back along roadway. Seeds.

GENISTA LUSITANICA L.

238685 (3675) Near Mirandela, on open granitic slopes, PORTUGAL. March 23, 1957. Cuttings.

238693 (3698) Globose, stout shrub, 2-4! tall. Forms a dense round-headed bush. Granitic slopes, Serra da Estrella, alt. 5100', PORTUGAL. March 26, 1957. Cuttings and seedlings.

242633 (5162) Much-branched, more or less leafless, somewhat glaucous-stemmed shrub, forming a compact bush 4-5' tall; flowers golden yellow. Open rocky granitic slopes at Guarda, PORTUGAL. August 18, 1957. Seeds.

GENISTA PILOSA L.

242632 (5190) Prostrate shrub; flowers yellow. Rock garden. Seeds from 70.

GENISTA TINCTORIA L. 'PLENA'
242098 (5195) Shrub 12" tall, muchspreading; flowers yellow, double. Garden
origin. Cuttings from 70.

GENISTA TRIACANTHOS Brot.

238951 (3783) Shrub, 2-4' tall, forms a densely tufted bush; flowers peashaped, deep yellow; very floriferous, and showy.

Open rocky slopes, Serra do Caramulo, alt. 2400'; PORTUGAL. April 6, 1957. Plants and cuttings.

GENISTA VIRGATA Lam.

Madeira Broom. Large shrub, 6-12' tall, much-branched; leaves gray; flowers yellow. Very floriferous. Madeira. Seeds from 1. 242275 (5306) Cuttings. 242276 (5345) Seeds.

GIBBAEUM EVELATUM

(4174) Aizoaceae. Cuttings from 75.

GIBBAEUM NEOBROWNII Tisch. (4173) Cuttings from 75.

GIBBAEUM SCHWANTESII Tisch. (4171) Cape Province, South Africa. Cuttings from 75.

GIBBAEUM SHANDII N. E. Br.

(4172) Stemless succulent forming small clumps; leaves in pairs, united for most of the length, forming an avoid or roundish body; flowers white or mauve. Karroo, South Africa. Cuttings from 75.

GILIBERTIA CUNEATA March

Araliaceae. Evergreen tree, 20-30' tall; flowers small, yellowish. Brazil. Introductions from 7. 240035 (3946) Cuttings. 240112 (3946) Seeds.

GINKGO BILOBA L. 'PENDULA'

237828 (3578) and 242017 (5171) Ginkgoaceae. Branches pendulous. Scions usually grafted on a standard. Garden origin. Cuttings from 62.

GINKGO BILOBA L. 'ST. CLOUD' n.cv.
242018 (5172) Deciduous tree 40' tall;
main trunk vertical and elongating from
the vigorous terminal long-shoot;
branches essentially at right angles to
the trunk or slightly ascending, rarely
with secondary branches; leaves densely
disposed almost entirely on short-shoots
of the main trunk and lateral branches.
The tree develops with a characteristic
skeletal appearance. Origin at Jardin
Kahn, St. Cloud-sur-Seine, France. Described for the first time.

GLADIOLUS ILLYRICUS Koch
239058 (3796) Iridaceae. Corn Flag. Cormous; 14" tall; flowers rose-red. Dry,
rocky south facing slopes, 12 mi. SW. of
Seville, along road N. 334, Prov. Seville,
SPAIN. April 13, 1957. Corms.

GLAUCIUM FLAVUM Crantz

241951 (5087) Papaveraceae. Perennial, much-branched to 3' tall; leaves tomentose; flowers bright yellow, showy. Road banks above the sea, in open situations, 6 mi. east of Malaga, Prov. Malaga, SPAIN. August 6, 1957. Seeds.

GLAZIOVA BAUHINIOIDES Bur.

242337 (5406) Bignoniaceae. Delicate creeper; leaves bifid, 1" long; climbing by tendrils with discs at the tips; curious vine for a moist wall. Rarely grown. Brazil. Cuttings from 1.

GLEDITSIA TRIACANTHOS L. 'ELEGANTISSIMA'
238020 (3608) Leguminosae. Dwarf bush
with dense habit; leaves white-variegated.
An elegant plant. Garden origin. Cuttings
from 2.

GLEICHENIA LINEARIS C.B. Clarke 243845 (6106) Gleicheniaceae. Rhizomatous fern, 12-24" tall; best cultivated in osmundine or masses of bracken fern roots. India. Plant from 14.

GLOBULARIA NUDICAULIS L.
238528 (3646) Globulariaceae. Densely
tufted suffrutescent perennial, 5-6" tall;
leaves leathery, deep green; flowers lavender to blue. Rock cliffs above Rio Diva,
along N. 621, 12 mi. so. Unquera, Prov.
Santander, SPAIN. March 16, 1957. Cuttings.

GLOSSORHYNCHA DISCHARENSIS Schltr. 242743 (5659) Orchidaceae. Epiphyte. Grown under L. Maurice Mason 53. New Guinea. Plant from 28.

GLOTTIPHYLLUM

Aizoaceae. Dwarf almost stemless succulent; leaves united in pairs, tongue-shaped, soft-fleshy, translucent bright green; flowers large, showy, yellow. Karroo and Cape Province, South Africa.

GLOTTIPHYLLUM APICULATUM N. E. Br.

(4276) Cuttings from 75.

GLOTTIPHYLLUM ALBUM L. Bolus

(4274) Cape Province, South Africa. Cuttings from 75.

GLOTTIPHYLLUM APICULATUM W. E. Bv. (4276) Cuttings from 75.

GLOTTIPHYLLUM ARMOEDENSE Schwant.

(4579) Cuttings from 3.

GLOTTIPHYLLUM PRAEPINQUE (Haw.) N. E. Br. (4582) Cuttings from 3.

GLOTTIPHYLLUM SUAVE N. E. Br. (4278) Cuttings from 75.

GNIDIA POLYSTACHYA Berg.

238771 (3757) and 241901 (5120) Thymeleaceae. Evergreen shrub, 6-10' tall; leaves heath-like, acicular; flowers yellow-green, fragrant; very floriferous. South Africa. Cuttings from 13.

GOETHEA STRICTIFLORA Hook.

241857 (5094) Malvaceae. Shrub, 3-4' tall; floral bracts yellowish white, tinged red; flowers cauliflorous, attractive. Brazil. Cuttings from 50.

GOODENIA OVATA J.E. Sm.

242338 (5401) Goodeniaceae. Shrub 2-3' tall; leaves lanceolate, serrate; flowers yellow. Botanical interest. Everflowering. Australia. Cuttings from 1.

GOUANIA NAPALENSIS Wall.

242339 (5382) Rhammaceae. Rank evergreen climber with stout tendrils; leaves broadly ovate, cordate. Foliage elegant. Nepal. Cuttings from 1.

GRABOWSCKIA LINDLEYI Sendt.

240036 (3945) Solanaceae. Shrub with sprawling branches and glaucous leaves.

Foliage very attractive. Brazil. Cuttings from 7.

GRAPTOPHYTUM × MARNIERI Goss. Crassulaceae. Garden origin. (4387) Cuttings from 75. (4542) Cuttings from 3.

GRAPTOVERIA (Echeveria elegans × Graptopetalum paraguayense)

(4761) Crassulaceae. Bigeneric hybrid of garden origin. Cuttings from 3.

X GRAPTOVERIA CALVA Goss.

(4561) Garden origin. Cuttings from 3.

GREENOVIA AEONIUM

(4737) Crassulaceae. Cuttings from 3.

GREENOVIA AUREA (C. Sm.) Webb. & Berth.

(4739) Canary Islands. Cuttings from 3.

GREVILLEA ACANTHIFOLIA A. Cunn.
239479 (3848) Proteaceae. Evergreen shrub
to 4' tall, sprawling; leaves spiny;
flowers pink. Australia. Cuttings from 3.

GREVILLEA ALPINA Lindl.

239542 (3860) Evergreen shrub, 2-3' tall; leaves linear, 1/2" long; flowers reddish. Australia. Cuttings from 3.

GREVILLEA ASPLENIFOLIA R. Br. 239480 (3849) and 241406 (5020) Much-branched small evergreen tree or large shrub with drooping branches; leaves linear serrate, silvery below and green above; flowers orange-red. To some extent grown commercially on the French Riviera. Australia. Cuttings from 3.

GREVILLEA ROSMARINIFOLIA A. Cunn.
241145 (4849) Evergreen shrub, 4-5' tall;
leaves narrow, resembling rosemary. Excellent foliage plant. New South Wales and
Victoria, Australia. Cuttings from 3.

GREVILLEA ROSMARINIFOLIA A. Cunn. 'WAKEHURST' 242430 (5497) Evergreen, much-branched shrub, 2-3' tall; leaves narrowly linear, 1-2" long; flowers coral red. Hardy at Edinburgh. Garden origin. Cuttings from 1.

GREWIA OCCIDENTALIS L.

239373 (3867) Tiliaceae. Small tree or large shrub; flowers about 1" long, pink or purplish. South Africa. Plant from 3.

GREWIA POPULIFOLIA Vahl

238872 (3752) Evergreen tree, 20' tall. Tropical Africa. Cuttings from 13.

GREYA SUTHERLANDII Hook. & Harv.

241234 (4804) Melianthaceae. Evergreen, much-branched shrub; leaves broadly ovate, resembling Pelargonium. South Africa. Handsome and desirable. Cuttings from 3.

GUNNERA CHILENSIS Lam.

243814 (6059) Halorrhagidaceae. Coarse rhizomatous perennial; leaves 10' long, the blades 3' wide. A striking plant for a boggy place. Chile. Plants from 9.

GUNNERA MANICATA Linden

243880 Southern Brazil. Plants from 72. GUSSONIA SPP.

242744 (5715) Orchidaceae. Epiphyte. Tanganyika. Plants from 28.

GYMNANTHOCEREUS MICROSPERMUS (Werd. & Backbg.) HAWORTHIA ALTILINEA Haw. Backbg.

(4309) Cactaceae. Plants from 75.

GYMNOCACTUS HORRIPILUS (Lem.) Backbg.
(4555) Cactaceae. Plants from 3.

GYMNOCACTUS SAUERI (Boedek.) Backbg. (4317) Plants from 75.

GYMNOCALYCIUM

Cactaceae. Low, barrel-type cactus, strongly ribbed; flowers pink or yellow, showy and large in proportion to the size of the plant. Brazil, Argentina, Uruguay Paraguay.

CYMNOCALYCIUM ANDRAEA (Boedek.) Backbg. & F. M. Knuth

Argentina.

(4290) Plants from 75.

(4290) Plants from 75. (4685) and (4697) Plants from 3.

GYMNOCALYCIUM BRUCHII Hoss

(4289) Argentina. Plants from 75.

GYMNOCALYCIUM DEEZIANUM Doelz

(4679) Plants from 3.

GYMNOCALYCIUM DENUDATUM var. PARAGUAYENSIS

(4336) Paraguay. Plants from 75.

GYMNOCALYCIUM URUGUAYENSE (Arech.) Britt. &

(4291) Uruguay, Plants from 75.

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HAAGEOCEREUS ACANTHOCLADUS

(4312) Cactaceae. Cuttings from 75.

HAAGEOCEREUS TALARENSIS

(4220) Cuttings from 75.

HAAGEOCEREUS VERSICOLOR (Werd. & Backbg.)

(4303) Peru. Cuttings from 75.

HAAGEOCEREUS VERSICOLOR (Werd. & Backbg.) Backbg. 'FLAVISPINA'

(4298) Cuttings from 75.

HAAGEOCEREUS VERSICOLOR (Werd. & Backbg.) (4304) Cuttings from 75.

HALLERIA LUCIDA L.

238873 (3748) Scrophulariaceae. Large shrub 10' tall; flowers tubular, reddish yellow. South Africa. Cuttings from 13.

HARTIA SINENSIS Dunn.

243325 (6031) and 244720 Theaceae. Evergreen tree, 40' tall; flowers white. A fine evergreen tree related to Stewartia. Grown under Forrest 24406 from the Shweli-Salwin divide, alt. 8-9000', China. Forrest says the leaves are used as tea locally. Seeds from 9.

HAWORTHIA

Liliaceae. Small desert succulents, a few inches or sometimes up to 8" tall; leaves deep green in rosettes or close spirals, usually leathery or sometimes very succulent; flowers small, white, on HEDERA CHRYSOCARPA Walsh long scapes. South Africa.

(4405) Cuttings from 75.

HAWORTHIA ALTILINEA var. DENTICULATA Poelln. Cuttings from 75.

HAWORTHIA ANGUSTIFOLIA Haw.

(4649) Cape Province, South Africa. Cuttings from 3.

HAWORTHIA ATROVIRENS Haw.

(4664) South Africa. Cuttings from 3.

HAWORTHIA CAESPITOSA Poelln.

(4410) Cuttings from 75.

HAWORTHIA CORRECTA Poelln.

(4655) Cuttings from 3.

HAWORTHIA CYMBIFORMIS var. AUGUSTATA Poelln.

(4414) Cuttings from 75.

HAWORTHIA HAAGEANA Poelln.

(4408) Cuttings from 75.

HAWORTHIA HERREI Poelln.

(4658 Cuttings from 3.

HAWORTHIA MUCRONATA var. DENTICULATA

(4412) Cuttings from 75.

HAWORTHIA MUCRONATA var. POLYPHYLLA (Bak.) Poelln.

(4661) Cuttings from 3.

HAWORTHIA PLANIFOLIA Haw.

(4416) Cuttings from 75.

HAWORTHIA PLANIFOLIA Haw. 'AGAVOIDES'

(4415) Cuttings from 75.

HAWORTHIA PLANIFOLIA Haw. 'ROBUSTA'

(4413) Cuttings from 75.

HAWORTHIA RAMOSA G. G. Sm.

(4409) Cuttings from 75.

HAWORTHIA REINWARDTII var. KAFFIRDIFTENSIS G. G. Sm.

(4577) Cuttings from 3.

HAWORTHIA RETUSA (L.) Haw.

(4662) Cuttings from 3.

HAWORTHIA RYDERIANA Poelln.

(4404) Cuttings from 75.

HAWORTHIA SUBREGULARIS Bak.

(4775) Cuttings from 3.

HAWORTHIA TURBIDA var. SUBERECTA Poelln.

(4419) Cuttings from 75.

HAWORTHIA UMBRATICOLA Poelln.

(4417) Cuttings from 75.

(4682) Cuttings from 3.

HAWORTHIA VISCOSA (L.) Haw.

(4418) Cuttings from 75.

(4660) Cuttings from 3.

HEBANTHE PANICULATA (Moq.) Benth. & Hook. thaceae. Vigorous evergreen climber with panicles of whitish flowers. Mexico. 238874 (3746) and 241902 (5123) Amaran-Cuttings from 13.

HEDERA CANARIENSIS Willd. 'ARBORESCENS' 242876 (5821) Araliaceae. Forms an erect bush; leaves all green. Cuttings from 14.

HEDERA CANARIENSIS Willd. 'ARBORESCENS

VARIEGATA'
239930 (3915) Arborescent, erect bush;
leaves green to white-variegated.
Cuttings from 46.

239247 (3817) and 241312 (4951) Evergreen

climbing woody vine; distinguished by the yellow berries. SE. Europe, Asia Minor. Cuttings from 33.

HEDERA COLCHICA Koch 'ARBORESCENS' 242877 (5818) and 242878 (5819) Forms an erect bush; leaves 5-8" long, 3-4" wide, lustrous green. Cuttings from 14.

HEDERA HELIX L.

239059 (3795) Leaves 4-6" across. Extremely vigorus. Notable for the large juvenile leaves. Garden selection.

Cuttings from 53.

HEDERA HELIX L. 'ALGERIENSIS'
242277 (5318) Juvenile leaves variable
in shape, predominantly ovate to shallowly 3-lobed or acuminate, lustrous
above. Cuttings from 1.

HEDERA HELIX L. 'CRISTATA'
242848 (5773) Leaves broadly ovatecordate, strongly crispate on the
margins. Garden origin. Good crinklyleaved type. Cuttings from 36.

HEDERA RHOMBEA (Miq.) Bean 242278 (5322) Japanese Ivy. Juvenile leaves cordate, acuminate. Japan-Cuttings from 1.

HEDYCHIUM CORONARIUM × H. GREENII
241146 (4818) and 241237 (4818) Zingiberaceae. Garden hybrid. Rhizomes from 3.
HEDYCHIUM DENSIFLORUM Wall.

241235 (4815) E. India. Cuttings from 3.

HEDYCHIUM GREENII W.W. Sm.
241147 (4814) and 241236 (4814) Rhizomatous, 2-6' tall; leaves hairy;
flowers yellow, streaked red. S. Bhutan.

Rhizomes from 3.
HELIANTHEMUM UMBELLATUM Mill.
238719 (3707) Cistaceae. Shrub, 2-4'
tall, branches all ascending; flowers an inch across, white. Serra do Mogadouro, between Mogadouro and Castelo Braveo,

PORTUGAL. March 24, 1957. Seeds,

HELICHRYSUM SEROTINUM Boiss.

Compositae. 241238 (4798) Cuttings from 3. 241940 (5086) Tufted perennial, 12-14" tall; leaves linear, tomentose; inflorescence flat-topped, yellow. With some selection for a better yellow, this would make a superb garden plant. Open rocky slopes near edge of olive orchard, road from Competa to Barranco Morena, Prov. Malaga, SPAIN. August 5, 1957. Seeds.

HEPATICA SPP.

238021 (3639) Ranunculaceae. Open rocky grassy hillsides above the sea at the end of the road beyond Pesajes de San Juan, near San Sebastian, Prov. Guipuzcoa, SPAIN. March 14, 1957. Flowers white. Plants.

HEPTAPLEURIUM STELLATUM Gaertn.
240307 (4001) Araliaceae. Small evergreen
tree; leaves digitately compound, deep
green, lustrous. Ceylon. Cuttings from 25.

HEPTAPLEURIUM STELZNERIANUM (Schefflera)
239374 (3853), 239543 (3853) and 241239
(4794) Small evergreen tree, 20' tall;
handsome foliage plant. Specific name
apparently of garden origin. Country of
origin not known. Plants and Cuttings
from 3.

HEREROA

Aizoaceae. Segregate of Mesembryanthemum. Plants prostrate and forming large mats, essentially stemless; leaves succulent, spotted; flowers yellow or rose, showy. South Africa.

HEREROA CARINANS (Haw.) L. Bolus (4657 and 4779) Cape Province. Cuttings from 3.

HEREROA INCURVA L. Bolus (4667) Cuttings from 3.

HEREROA MUIRI L. Bolus (4681) Cuttings from 3.

HEREROA ODORATA (L. Bolus) L. Bolus (4665) Cuttings from 3.

HEREROA STANFORDIAE L. Bolus (4652) Cuttings from 3.

HEREROA WILMANIAE L. Bolus (4780) Cuttings from 3.

HERMODACTYLUS TUBEROSUS (L.) Mill.
238694 (3711) Iridaceae. Tuberous-rooted
perennial; flowers black-purple, midwinter. Villa Flor (Alto Douro), open
mountain slopes, PORTUGAL. March 28,
1957. Roots.

HETEROCENTRON ELEGANS (Schl.) Kuntze
241162 (4836a) Melastomataceae. Long-creeping perennial, forming mats; flowers deep
purple. Fine hanging basket plant. Mexico.
Cuttings from 3.

241262 (4836a) Cuttings from 3.
HETEROMORPHA ARBORESCENS Cham. & Schl.
240406 (3984) Umbelliferae. South Africa.
Cuttings from 7.

HETEROPTERYS CHRYSOPHYLLA H.B.K. 240076 (3958) Malpighiaceae. Scrambling or half erect, evergreen shrub; leaves shiny green above, silvery tomentose below. South America. Cuttings from 7.

HIBBERTIA DENTATA R. Br.
242669 (5634) Dilleniaceae. Evergreen
climber; leaves elliptic, 2-3" long,
bronze-green; flowers bright yellow.
New South Wales and Victoria, Australia.
Cuttings from 15.

HIBISCUS ACETOCELLA Welw.
242594 (5549) Malvaceae. Shrub; leaves
bronze-red to maroon-red, deeply lobed and
dentate; flowers deep pink. Angola. Very
showy foliage. Plants from 28.

HIBISCUS LILIFLORUS Cav. 238773 (3760) and 241903 (5121) Evergreen shrub, 3-6' tall; flowers scarlet, single. Reunion. Cuttings from 13.

HIBISCUS ROSA-SINENSIS L. 'KERMESINUS'
238772 (3761) and 241905 (5125) Shrub
10' tall; flowers deep red, single. Garden
origin. Cuttings from 13.

HIBISCUS ROSA-SINENSIS L. 'VIVICANS'
241904 (5122) Flowers double, scarlet,
4-5" across. Garden origin. Cuttings
from 13.

HIBISCUS SYRIACUS L. 'ALBUS'
241313 (4948) and 241391 (5013) Deciduous
shrub, 6-8' tall; flowers pure white, 3-5"
in diameter. First-rate white-flowered
form. Garden origin. Cuttings from 33.

HIBISCUS SYRIACUS L. 'HAMABO'
242340 (5393) Flowers clear pink with
red eye. One of the best. Garden selection.
Cuttings from 1.

HIPPOBROMUS ALATUS E. & Z.
Sapindaceae. Evergreen tree, 20' tall with pinnately divided leaves. Very attractive fern-like foliage. South Africa. 240113 (3969) Cuttings from 7. 241240 (4790) Cuttings from 3.

HIPPOCRATEA OBTUSIFOLIA ROXD.

242341 (5404) Hippocrateaceae. Scrambling evergreen shrub; leaves elliptic to ovate, deep green and lustrous above; flowers small, greenish. Interesting evergreen climber. India. Cuttings from 1.

HOLBOELLIA CORIACEA Diels
237829 (3581) Lardizabalaceae. Evergreen
climber. Requires warm-termperate climate.
Central China. Cuttings from 10.

HOLBELLIA LATIFOLIA Wall.

241354 (4981) Cuttings from 3.

242879 (5811) Evergreen, rampant twining climber; leaves coriaceous, ternate,

2-3" long; fruit fleshy, 2" long and 1" across, pendulous. Himalayas. Seeds from

HOLCUS LANATUS L. 'ALBO-MARGINATUS'
242849 (5772) Gramineae. Densely tufted
rhizomatous perennial; leaves soft, hairy,
with white margins. Plants from 36.

HOYA AFFINIS var. SOLANIFLORA Schltr.
242595 (5529) Asclepiadaceae. Scrambling
perennial vine; leaves lanceolate, acuminate, 1-1 1/2" long, dark green above.
Epiphytic. Collected by L. Maurice Mason.
New Guinea. Cuttings from 28.

HOYA ANGUSTIFOLIA Traill.

Scrambling; leaves 2-3" long, narrowly lanceolate, fleshy; flowers pinkish white.

Very fine in flower.

(4394) Cuttings from 75.

241241 (4831) Cuttings from 3.

241421 (5028) Cuttings from 26. 242596 (5522) Cuttings from 28.

HOYA GLOBULOSA Hook. f. 241242 (4836) Himalayas. Cuttings from 3. HOYA IMPERIALIS Lindl.

242597 (5514) and 242598 (5535) Succulent perennial with scrambling habit; leaves broadly elliptic, acuminate, 3-5" long, 1-2" wide, thick, dull green above, glabrous, somewhat tomentose below. Grown under L. Maurice Wason 163. New Guinea. Cuttings from 28.

HOYA LONGIFOLIA Wall. (H. shepardii)
242600 (5530) Scrambling; leaves broadly
elliptic 2-3" long, furrowed above,
bright green. Himalayas. Cuttings from

HOYA OBOVATA Decne. 241243 (4840) Leaves thick, fleshy, obcordate. Unusual leafy. New Guinea. Cuttings from 3.

HOYA RIDLEYI King & Gamble
242599 (5531) Epiphyte with scrambling
habit; leaves broadly ovate, 2-3" long,
the veins strongly marked; leaves reddish
in strong light. Java. Cuttings from 28.
HUERNIA

Asclepiadaceae. Closely related to Stapelia, differing chiefly in the flowers with a 10-pointed corolla and with shorter points between the main ones. East Tropical to South Africa.

HUERNIA MACROCARPA (A. Rich.) Spreng. (4152) Ethiopia. Cuttings from 75. HUERNIA MACROCARPA var. PENZIGII (N.E. Br.) W. & S.

(4153) Eritrea. Cuttings from 75. HUERNIA SOMALICA N. E. Br.

(4155) British Somaliland. Cuttings from 75.

HYDRANGEA HETEROMALIA D. Don
Hydrangeaceae. Deciduous shrub, 8-10'
tall; leaves 4-6" long, serrate; flowers
white. China, Himalayas.
240680 (4063) Cuttings from 6.
242279 (5354) Cuttings from 1.
242280 (5337) Grown under Yu 10948.

Yunnan, China. Cuttings from 1.

HYPERICUM PATULUM Thunb. 'HIDCOTE GOLD'

Hypericaceae. Perennial, suffruticose,

4-5' tall; flowers 2" across, deep yellow.

242281 (5331) Cuttings from 1.

247782 Cuttings from 70.

HYPERICUM 'ROWALLANE' (H. hookerianum rogersii × H. leschenaultii)

243309 (6040) Evergreen shrub, erect, 4'
tall; flowers 2-2 1/2" across, cup-shaped,
the petals waxy, Deep yellow. Garden
origin. One of the finest hypericums,
probably not hardly north. Cuttings
from 45.

HYPOESTES MACULOSA Nees
Acanthaceae. Perennial herb, 12-18"
high; leaves green and mottled pink above;
flowers rose pink. A good foliage plant,
with colored leaves. Madagascar. Introductions from 5.
240798 (4097) Cuttings.
241204 (4097) Seeds.
241383 (4990) Plants.

Ι

ILEX SPP. 242838 (5735), 242839 (5736) and 243836

(6083) Aquifoliaceae. Evergreen shrub; leaves 1½-2" long, sparsely undulate spiny, lustrous green above, much lighter below. Grown under <u>Wilson 1822</u>. China. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim.

(I. aquifolium X I. perado) Lacking a modern study of the relationships between typical Ilex aquifolium as known in western Europe and I. platyphylla and I. perado from the Canary Islands, Azores, and Madeira, it becomes particularly difficult to deal with much of the cultivated Ilex growing in British gardens belonging to this alliance. After studying and collecting the hollies at the Royal Botanic Gardens Edinburgh and Kew, it is apparent that two groups of hollies are under cultivation - (1) typical I. aquifolium as known in western Europe and cultivars of it, and (2) a group of hybrids, many of which frequently are included as variants of typical I. aquifolium. Of the hollies listed in the present inventory, many cultivars are included under the hybrid combination, I. x altaclarensis Dallimore (I. aquifolium  $\times$  I. perado), since the cultivated plants in question quite obviously are not merely simple variants of I. aquifolium as known in western Europe.

242194 (5245) Staminate. Leaves green, broadly ovate, strongly spine-toothed, somewhat undulate, lustrous green above. Used for a hedge at the botanic garden,

Edinburgh. Cuttings from 1.

243310 (6033) Pistillate. Evergreen tree, 40' tall; leaves 3-4" long, mostly oblong, entire, somewhat undulate-margined, dark lustrous green; berries red. Handsome. Cuttings from 9.

242866 (5775) Pistillate. Seeding probably of hybrid origin resulting from open pollination of <u>I. aquifolium</u> and plants of the <u>I. perado</u> complex, leaves green, handsome berried sort. Cuttings from 14. 243825 (6062) Seedling resulting from open pollination between plants of <u>I. aqui</u>

folium. Cuttings from 14.

243834 (6070) Staminate. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'ALTACLARENSIS'
242833 (5744) (staminate) Ruptably the
type form of the hybrid. Very vigorous
evergreen tree, 50' tall, densely branched;
leaves green, broadly ovate, 2-3" long,
1-2" wide, irregularly spine-toothed.
Numerous cultivars of this hybrid are
grown often misnamed as forms of I. aquifolium. Hybrid first recognized at Highclare Castle. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'ATKINSONII'
242812 (5756 (staminate) Leaves green,
broadly ovate, 2-3" long, regularly spine-

toothed, mostly flat, lustrous above; stems green. Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'ATROVIRENS'
(pistillate)
243000 (5794) Leaves mostly ovate to
elliptic, 2-3" long, 1-12" wide, regularly
wide-spaced spine-toothed; twigs green.
Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'AUREA ANGUSTIFOLIA' (pistillate)
242854 (5774) Leaves variegated, elliptic,
2-3" long, 3/4-1½" wide, variously spinetoothed, sometimes nearly entire, the margins suffused yellow. Garden hybrid. Cut-

tings from 14.

ILEX × ALTACLARENSIS Dallim. 'CAMELLIAEFOLIA'
(pistillate)
Leaves green, 4-7" long, ovate to elliptic,
sparsely spine-toothed, mostly entire,
lustrous green above. One of the finest
hollies grown. Garden hybrid.
242172 (5238) Cuttings from 1.
243815 (6069) Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'CAMELLIAEFOLIA AUREA-MARGINATA'
Leaves yellowish variegated, ovate, 3-4"
long, 1½-2" wide, sparingly spine-toothed, flat, the margins yellowish. Very striking. Garden hybrid.
242186 (5252) Cuttings from 1.

242533 (5596) Cuttings from 28.

ILEX × ALTACLARENSIS Dallim. 'DONNINGTONENSIS' (staminate)
242188 (5240) Cuttings from 1.
242817 (5753) Leaves green, mostly 2-3"
long, ½-1½" wide, mostly elliptic, sometimes entire or coarsely spine-toothed, lustrous green above; stems purplish.
Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'FOXII' (staminate)
Leaves green, mostly ovate, 2-3" long,
1½-2" wide, regularly coarsely serrate,
mostly quite flat, lustrous deep green
above; young stems purplish; resembles the
cultivar 'Ovata'. Garden hybrid. Cuttings
from 14.

ILEX × ALTACLARENSIS Dallim. 'GOLDEN KING'
(pistillate)
Leaves yellowish variegated, broadly ovate,
1½-2" long, 1-1½" wide, mostly entire or
occasionally finely toothed, the margins
yellowish, dull green in the middle of the
blade. Garden hybrid.

242116 (5198) Cuttings from 1. 242819 (5751) Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'GRAECIAN'
(staminate)
242111 (5209), 242117 (5201) and 242121
(5200) Leaves green, 2-3" long, variously recurved-tipped and spiny undulate-toothed, uniformly lustrous green.
Garden hybrid. Cuttings from 1.

ILEX × ALTACLARENSIS Dallim. 'HENDERSONII'

(pistillate)

242530 (5580) Leaves green, mostly entire, occasionally very short spine-toothed, dull; berries red. Garden hybrid. Cuttings from 28.

ILEX × ALTACLARENSIS Dallim. 'HODGINSII'
 (pistillate)
 Leaves green, ovate, 2-3" long, irregularly
 spine-toothed, sometimes entire, lustrous

above. Garden hybrid.

242119 (5218) Cuttings from 1. 242837 (5739) Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'HODGINSII VARIEGATA' (staminate) 242118 (5199) Leaves yellowish variegated, mostly coarsely spine-tipped, occasionally entire, predominantly yellow-margined, sometimes yellow throughout. Garden hybrid. Cuttings from 1.

ILEX × ALTACLARENSIS Dallim. 'INTERMEDIA'
 (pistillate)
 242120 (5219) Leaves green, elliptic,
 2-3" long, uniformly coarse spine-toothed,
 lustrous. Garden hybrid. Cuttings from 1.

ILEX × ALTACLARENSIS Dallim. 'LAEVIGATA POLYCARPA' (pistillate) 242601 (5578) Leaves 2-3" long, 1" wide, mostly entire, sometimes spine-tipped. Garden hybrid. Cuttings from 28.

ILEX × ALTACLARENSIS Dallim. 'LAWSONIANA'
(pistillate)
242858 (5779) Leaves variegated, broadly
ovate, about 3" long, 1-2" wide, irregularly spine-toothed, sometimes nearly
entire, often with large yellowish
patches suffused green to dark green.
Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'MARNOCKII'

(pistillate)
242902 (5799) Leaves green, mostly
elliptic, 3-4" long, 1½-2" wide, entire
or irregularly spiny undulate toothed,
very lustrous above; berries red. Garden
hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'MOREI'
(staminate)
242826 (5747) Leaves green 3-4" long,
1 ½-2" wide, broadly ovate, coarsely
spine-toothed, lustrous green above, the
veins prominent. Garden hybrid. Cuttings
from 14.

ILEX × ALTACLARENSIS Dallim. 'NIGRESCENS' 242675 (5602) Leaves broadly ovate, flat, entire, 3-4" long, 2-3" wide, lustrous, dark green above, dull yellowish green below. Garden hybrid. Cuttings from 28. 243833 (6058) Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'NOBILIS'
(staminate)
242126 (5222) Leaves broadly ovate to
elliptic, 2-3" long, irregularly spinemargined, sometimes entire; twigs deep
purplish. Garden hybrid. Cuttings from 1.
ILEX × ALTACLARENSIS Dallim. 'NOBILIS VARIEGATA'

243829 (6064) Leaves mottled yellow,

sparsely spine-toothed, mostly towards the tip; berries red. Favors the <u>I. perado</u> parentage. Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'PYRAMIDALIS'
(pistillate)
242671 (5581) Plant pyramidal with the
branches mostly ascending; leaves predominantly coarse spiny undulate-toothed,
sometimes nearly entire, lustrous above;
a good berried type. Garden hybrid.
Cuttings from 28.

ILEX \* ALTACLARENSIS Dallim. 'PYRAMIDALIS AUREA' (pistillate)
242672 (5587) Branches ascending; leaves
2-3" long, mostly entire to sparsely toothed towards the tip, the margins yellow. Garden hybrid. Cutting from 28.

ILEX × ALTACLARENSIS Dallim. 'REPANDA'
(pistillate)
242903 (5793) Leaves 2-3" long, \$\frac{2}{2}-l\frac{1}{2}\]
wide, mostly ovate to elliptic, irregularly spiny undulate-toothed, sometimes nearly entire, the periphery suffused yellowish, otherwise lustrous dark green.
Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'SENESCENS' (pistillate)
242859 (5788) Leaves green 1½-2" long,
most ovate, irregularly spine-toothed,
sometimes nearly entire, lustrous deep
green above; stems green. Garden hybrid.
Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'SHERPERDII' (staminate)
242131 (5226) Leaves green, broadly ovate,
2-3" long, irregularly coarse spinetoothed, sometimes entire, lustrous; twigs
purplish. Garden hybrid. Cuttings from 1.

ILEX × ALTACLARENSIS Dallim. 'SMITHIANA' (staminate)
242865 (5785) Leaves irregularly spiny,
undulate-toothed, sometimes nearly entire,
lustrous dark green above; stems purple.
Garden hybrid. Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'W.J. BEAN'
(pistillate)
242860 (5786) Leaves broadly ovate, irregularly spine-toothed, 2-3½" long, dark lustrous green above. Garden hybrid.
Cuttings from 14.

ILEX × ALTACLARENSIS Dallim. 'WILSONII'

(pistillate)

Leaves broadly ovate, spine-margined,
lustrous, dark green, nearly flat. Berries
red. One of the best. Garden hybrid.
241324 (4969) Cuttings from 57.
241325 (4970) Seeds from 57.
242133 (5204) Cuttings from 1.

ILEX × ALTACLARENSIS Dallim. 'WHITTINGTONENSIS'

(staminate)
242123 (5220) and 242121 (5227) Leaves elliptic, 2-3" long, coarsely spiny undulate-toothed, lustrous, green above. Garden hybrid. Cuttings from 1.

ILEX AQUIFOLIUM L. (unnamed cultivars)

242191 (5250) Leaves 1½-2" long, mostly
elliptic, coarsely spine-toothed with
a narrow yellowish green margin, sometimes
suffused yellowish-green over part of the
blade. Garden origin. Cuttings from 1.
242138 (5206) Leaves elliptic mostly
entire, spine-tipped. Plant suggests
Prunus laurocerasus. Cuttings from 1.

243086 (5943) Leaves strongly variegated
with whitish margins, 1-1½" long, strongly
spiny, undulate-toothed. Cuttings from 74.

ILEX AQUIFOLIUM L. 'ANGUSTIFOLIUM'

Evergreen tree, 30' tall; leaves 1½-2"
long, ½-¾" wide, ovate, acuminate, regularly spine-toothed, lustrous green above; berries red, ½" across. The smallest berried of the I. aquifolium cultivars.

Garden origin.

242850 (5766) Pistillate. Cuttings from 36.

242850 (5766) Pistillate. Cuttings from 36. 242997 (5767) Seeds from 36.

243816 (6067) Cuttings from 14.

ILEX AQUIFOLIUM L. 'ANGUSTIFOLIA AUREA-MACULATA' (staminate)
242898 (5791) Variegated leaved cultivar of I. a. 'Angustifolia'. Leaves yellowish variegated. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'ARGENTEA LONGIFOLIA'
(staminate)
242851 (5777) Leaves 2-4" long, mostly
elliptic, 1-12" wide, coarsely spiny
undulate-toothed, the margins silvery.
Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'ARGENTEA-MARGINATA'
(pistillate)

Leaves ovate to elliptic, 2-3" long, uniformly coarse spiny, the margin with a whitish band, the remainder of the leaf green, lustrous. Garden origin.

242108 (5213) Cuttings from 1. 242311 (5737) Cuttings from 14.

ILEX AQUIFOLIUM L. 'ARGENTEA-MARGINATA ELEGANTISSIMA' (pistillate)
242531 (5601) Leaves 1½-3" long, mostly ovate, strongly spiny undulate-toothed, margins variously silvery bordered.
Garden origin. Cuttings from 28.
242824 (5752) Cuttings from 14.

ILEX AQUIFOLIUM L. 'ARGENTEA-MARGINATA PENDULA' (pistillate)

Perry's Weeping Holly. Leaves mostly ovate, 2-3" long, coarsely spine-toothed, sometimes nearly entire, with yellowish margins; branches strongly pendulous. Garden origin.

242143 (5215) and 242183 (5243) Cuttings from 1.

242852 (5780) Cuttings from 14. 243091 (5930) Cuttings from 74.

ILEX AQUIFOLIUM L. 'ARGENTEA MEDIO-PICTA'
(pistillate)
242109 (5214) Leaves 2" long, strongly

spiny undulate-toothed, some branches with the leaves white-blotched. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'ARGENTEA-REGINA' (staminate).

Silver Queen Holly. Leaves broadly ovate, coarsely spine-toothed, lustrous green with yellowish margins above. Garden origin.

242673 (5585) Cuttings from 28. 242853 (5782) Cuttings from 14.

ILEX AQUIFOLIUM L. 'AUREA-MARGINATA' (pistillate)

Leaves ovate, 1-2" long, undulate-margined with a yellow band on the periphery above, otherwise green and lustrous. Garden origin. 242110 (5216) Cuttings from 1.

243817 (6074) Cuttings from 14.

ILEX AQUIFOLIUM L. 'AUREA-MARGINATA ANGUSTI-FOLIA'

242182 (5249) Leaves 12-2" long, coarsely spiny undulate-toothed, with a narrow yellowish green band. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'AUREA-MARGINATA FRUCTO-LUTEO' (pistillate) 242880 (5808) Leaves yellowish variegated, 2-3" long, mostly ovate, coarsely spinetoothed, the margins yellowish white; berries yellow. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'AUREA-MARGINATA OVATA'
 ('Ovata Aurea'). Staminate.
243090 (5918) Leaves 1-2" long, regularly
short spine-toothed, mostly bright
yellow-margined. Garden origin. Cuttings
from 74.

ILEX AQUIFOLIUM L. 'AUREA MEDIO-PICTA'
Golden Milkmaid Holly. Leaves ovate, 2-2½"
long, 1-2" wide, variously suffused yellow
and green, the middle of the blade often
entirely yellow with a green margin. Garden
origin.

242184 (5241) Cuttings from 1. 242528 (5599) Cuttings from 28.

ILEX AQUIFOLIUM L. 'AUREA-REGINA' (staminate)
Golden Queen Holly. Leaves mostly ovate,
coarsely undulate-toothed, uniformly
golden-yellow bordered, the body of the
leaf lustrous green. Perhaps the best
golden-leaved holly. Garden origin.
242171 (5233) Cuttings from 1.
242820 (5746) and 242857 (5784) Cuttings
from 14.

ILEX AQUIFOLIUM L. 'AURIFODINA' (pistillate) 242855 (5789) Leaves mostly elliptic, coarsely spine-toothed, the margins yellowish. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'AURIFOLIUM' (pistillate)
242813 (5741) Leaves yellowish variegated,
2-3" long, 3/4-1" wide, acuminate, coarsely
spine-toothed, somewhat undulate to nearly
flat, the margins suffused yellowish. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'BALEARICA'
Leaves 12-2" long, mostly ovate with a
few soft spines, flat, dull green above.
May possibly be a hybrid. Garden origin.

242185 (5247) Cuttings from 1. 242282 (5315) Cuttings from 14.

ILEX AQUIFOLIUM L. 'CILIATA MAJOR'

Leaves ovate to elliptic, mostly entire, variously undulate-margined, rarely flat, lustrous green throughout, the twigs somewhat purplish.

242173 (5231) Staminate. Cuttings from 1. 242814 (5750) Pistillate. Cuttings from 14.

ILEX AQUIFOLIUM L. 'COOKII' (pistillate) 242815 (5760) Leaves 1-2" long, ovate, coarsely spine-toothed, flat to undulate, the margins suffused yellowish green. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'CRASSIFOLIA' (pistillate) 242174 (5234) Leaves narrowly elliptic, 2-21 long, 1" wide, uniformly coarsely spine-toothed, more or less undulate margined, very thick. An extreme deviation in leaf type from typical I. aquifolium. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'CRISPA' (staminate)
242129 (5203) Leaves variously twisted and recurved, sparsely spine-tipped, very thick. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'CRISPA AUREO-PICTA' (staminate) 242816 (5743) Leaves yellowish variegated,

2-3" long, ovate, strongly twisted, sparsely spine-margined, lustrous green and blotched yellow to greenish yellow above. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'FEROX' (staminate) Hedge-Hog-Holly. Leaves 12-2" long, strongly undulate-margined, coarsely spiny on the upper surface, especially towards the tip, green, lustrous. Garden origin. 242112 (5217) Cuttings from 1. 243818 (6073) Cuttings from 14.

ILEX AQUIFOLIUM L. 'FEROX-ARGENTEA' (staminate) Leaves 12-2" long, coarsely spiny undulatetoothed on the upper surface, the margins recurved, with a yellowish band. Garden origin.

242113 (5228) Cuttings from 1. 243819 (6072) Cuttings from 14.

ILEX AQUIFOLIUM L. 'FEROX-AUREA' (staminate) Leaves yellowish variegated, with whitish border. Garden origin. 242187 (5244) Cuttings from 1. 243820 (6080) Cuttings from 14.

ILEX AQUIFOLIUM L. 'FISHERI' (staminate) 242899 (5798) Leaves variously shaped, mostly ovate or elliptic, coarsely spiny undulate-toothed, or entire; twigs green. Garden origin. Cuttings form 14.

ILEX AQUIFOLIUM L. 'FLAVESCENS' (pistillate) Moonlight Holly. Leaves variegated, 1-2" long, ovate to elliptic, some strongly spiny undulate-toothed, some others mostly entire or sparsely toothed, suffused yellowish, especially toward the tips. Garien origin.

2-2114 (5196) Cuttings from 1. 242818 (5740) Cuttings from 14. ILEX AQUIFOLIUM L. 'FRUCTU-LUTEO' (pistillate) 242115 (5197) Leaves 3-4" long, coarsely spine-tipped, uniformly deep lustrous green; berries yellow. Garden origin. One of the oldest known cultivars. Cuttings from 1.

ILEX AQUIFOLIUM L. 'HANDSWORTH NEW SILVER' (staminate)

Leaves 2-3" long, elliptic, uniformly long spine-toothed, the margin with a narrow white band, the body deep green. An elegant selection. Garden origin. 242175 (5237) Cuttings from 1. 242822 (5745) Cuttings from 14.

ILEX AQUIFOLIUM L. 'HANDSWORTHENSIS' (staminate)

242821 (5762) and 242856 (5787) Leaves ovate, 1-1/2 2-1/2" long, sharp spinetipped, irregularly ciliate-toothed, some times entire, lustrous deep green above; stems purplish. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'HASTATA' Leaves 1-1½" long, very thick, 3-5 spined, appearing as if 3-lobed, the middled portion much extended and spinetipped. Plant dwarfish and the hastate leaves strikingly different from all other I. aquifolium cultivars. Garden origin.

242529 (5597) Cuttings from 28. 243087 (5923) Cuttings from 74.

ILEX AQUIFOLIUM L. 'HETEROPHYLLA AUREA-MARGINATA' (staminate) 242823 (5759) Old-Gold-Holly. Leaves yellowish variegated, 2-3" long, ovate, mostly entire, occasionally scattered spine-toothed, flat to undulate, the margins suffused yellowish; stems bright green. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'INGRAMII' (staminate) 242901 (5795) Older leaves lustrous deep green, the leaves of the twigs streaked whitish. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'LATISPINA' (staminate) Leaves green, mostly ovate, variously shaped, sometimes oblique at the tip or often long acuminate, spiny undulatetoothed. Garden origin. Cuttings from 1. 242121 (5200) Cuttings from 14. 242189 (5246) Cuttings from 1.

ILEX AQUIFOLIUM L. 'LATISPINA MAJOR' (staminate) 243821 (6076) Leaves green, 2-2½" long, somewhat quadrate, acuminate with a spiny tip, undulate-margined, with few

spines. Carden origin. Cuttings from 14. ILEX AQUIFOLIUM L. 'LAURIFOLIA' (staminate) 242122 (5201) Leaves 2-3" long, mostly elliptic, spine-tipped, entire, uniformly lustrous green, with the aspect of Prunus laurocerasus. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'LAURIFOLIA AUREA' Leaves 2-21" long, slightly undulatemargined, almost spineless, dark glossy green, the margins golden yellow. Garden origin. Cuttings from 74.

ILEX AQUIFILIUM L. 'LERTACANTHA' (pistillate) 238022 (3612) Small evergreen tree to 15'

tall. Cuttings from 2.

ILEX AQUIFOLIUM L. 'LURIDA VARIEGATA' (pistil-242124 (5221) Leaves elliptic, 2-4" long, uniformly coarsely spiny, yellow-margined. Carden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'MADAM BRIOT' (staminate) Leaves ovate, 2-3" long, 1-12" wide, coarsely spiny, undulate-toothed, the margins with a narrow yellowish green band. Garden origin.

242532 (5589) Cuttings from 28. 242861 (5783) Cuttings from 14.

ILEX AQUIFOLIUM L. 'MADERENSIS' (pistillate) 242181 (5236) Leaves mostly broadly ovate, 2-3" long, 12-2" wide, sparsely spinetoothed, sometimes almost entire, lustrous green above; fruit red. Possibly a hybrid. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'MADERENSIS VARIEGATA' (pistillate) Leaves yellowish variegated, 2-4" long, ovate, sometimes entire or irregularly

spine-tipped, the upper surface suffused yellow or greenish. Garden origin.

242125 (5202) Cuttings from 1. 243822 (6066) Cuttings from 14.

ILEX AQUIFOLIUM L. 'MONSTROSA' (staminate) 242825 (5748) Leaves green mostly elliptic, 2-3" long, coarsely spine-toothed, the spines mostly erect on a wavy margin, deep lustrous green above. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'MUNDYI' (staminate) 242827 (5754) Leaves green, broadly ovate, 2-3" long,  $1\frac{1}{2}$ -2" wide, irregularly spinetoothed, deep green above, lighter below. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'MURICATA' ('bicolor') (staminate) 243085 (5936) Leaves 2-2½" long, ovate or oblong-ovate, spine-toothed, blotched greenish yellow. Garden origin. Cuttings from 74.

ILEX AQUIFOLIUM L. 'MYRTIFOLIA AUREA' (staminate) 242862 (5776) Low dwarfish shrub, 6-8' tall; leaves 1-2" long, ovate, uniformly spine-toothed, variously suffused yellowish green, lustrous above; stems purplish. Garden origin. Cuttings from

ILEX AQUIFOLIUM L. 'OAK VALE' (staminate) 242828 (5755) Leaves green, 12-2" long, variously spine-toothed, sometimes nearly entire, dull green above; stems purplish. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'OVATA' (staminate) Leaves mostly flat, 12-2" long, elliptic, 3/4-1" wide, coarsely toothed, deep lustrous green above. Garden origin. 242128 (5223) Cuttings from 1. 242670 (5588) Cuttings from 28.

ILEX AQUIFOLIUM L. 'OVATIFOLIUM' (staminate) 243089 (5919) Leaves 1-12" long, oblong, 2" wide, mostly flat, regularly spinetoothed, lustrous deep green above. Garden origin. Cuttings from 74.

ILEX AQUIFOLIUM L. 'PENDULA' (pistillate) 242127 (5224) Branches pendulous; leaves 2-22" long, coarsely undulatetoothed, lustrous green. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'PENDULA TRICOLOR' (pistillate) 242176 (5229) Branches pendulous; leaves cream-colored on the margins, coarsely spine-toothed, ovate to elliptic, 2-3" long. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'PYRAMIDALIS' 243823 (6065) Leaves green; forms a relatively narrow pyramidal bush, 8-10' tall, the branches mostly ascending. The berries turn red on October 1 at Kew or earlier, maturing before all others seen. Cuttings from 14.

ILEX AQUIFOLIUM L. 'PYRAMIDALIS FRUCTO-LUTEO' (pistillate) 243824 (6075) Plant with pyramidal habit and yellow fruit. Garden origin. Cuttings

from 14.

ILEX AQUIFOLIUM L. 'RECURVA' (staminate) Leaves 1-12" long, ovate to elliptic, coarse spiny undulate-toothed, lustrous green. Slow growing dwarfish plant, with leaves that resemble I. pernyi. Garden origin.

242178 (5235) Cuttings from 1. 242863 (5778) Cuttings from 14.

ILEX AQUIFOLIUM L. 'RUBICAULIS AUREA' (pistillate) 242829 (5749) Leaves yellowish variegated, broadly ovate to suborbicular, 1\frac{1}{4}-2" long, 1-12" wide, the margins uniformly spinetoothed, with a narrow yellow band, flat or slightly undulate. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM 'SCOTICA' (staminate) 242190 (5242) Leaves 1-2" long, ovate to elliptic, entire, somewhat undulatemargined, thick, lustrous green, the tip obtuse or spiny. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'SCOTICA AUREA' (pistillate) 242830 (5758) Leaves yellowish variegated, 2-3" long, elliptic, mostly entire, the margins slightly undulate, the blades mottled yellowish, suffused green to uniformly deep lustrous green. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'SERRATIFOLIA' (staminate) 242130 (5225) Leaves ovate-elliptic,  $1-1\frac{1}{2}$ " long, spiny undulate-toothed. Dwarfish, slow growing and very densely branched. Garden origin. Cuttings from 1.

ILEX AQUIFOLIUM L. 'VICTORIA' (staminate) 242831 (5763) Leaves variegated, 2-3" long, strongly spiny undulate-toothed, the margins yellowish, suffused green. Garden origin. Cuttings from 14.

ILEX AQUIFOLIUM L. 'WATERIANA' (staminate) Waterer's Gold-Holly. Dwarfish shrub, usually 6-10' tall; leaves with a narrow yellow band on margin, 1-12" long, irregularly coarse spine-toothed. Usually very densely branched, with elegant foliage. Garden origin.

242177 (5230) Cuttings from 1. 242832 (5757) Cuttings from 14.

ILEX × BEANII Rehd. (pistillate)

(I. aquifolium  $\times$  I. dipyrena). Small evergreen tree, 25' tall; leaves ovate to elliptic, 2-22" long, finely spine-margined, dull green above; fruit dark red. Plants mostly resemble the I. dipyrena parentage. Garden origin.

242180 (5232) Cuttings from 1. 242834 (5761) Cuttings from 14.

ILEX CASSINE L.

243102 (5920) Dahoon holly. Evergreen shrub or small tree. Southeastern United States. Cuttings from 74.

ILEX CHINENSIS Sims

243196 (5938a) Evergreen shrub; leaves 2-3" long, ovate, finely serrate, light green; twigs reddish. China. Cuttings from 74.

ILEX CILIOSPINOSA Loes. (staminate) Small, evergreen tree, 20' tall; leaves ovate-lanceolate. China. 242135 (5205) Cuttings from 1. 242881 (5801) and 243826 (6063) Cuttings from 14.

ILEX CORALLINA Franch.

Evergreen large shrub to small tree, 4-20' tall, the branches green, the trunk gray, only slightly roughened; leaves peach-like, ovate to oblong, 2-3" long, acuminate, slightly serrate, dull green above. 242283 (5324) Grown under Forrest 15437 from the Mekong valley, alt. 7000', Yunnan, China. Cuttings from 1. 243092 (5924) Cuttings from 74. 243254 (5951) Pistillate. Cuttings from 11.

243326 (6029) Cuttings from 9.

ILEX CORNUTA Lindl. & Paxt.

243311 (6021) Large evergreen shrub; leaves essentially square in outline with spines on the angles. China. Cuttings from 9.

ILEX CRENATA Thunb. 'LUTEO-VARIEGATA'

242998 (5797) Some of the leaves occasionally blotched yellowish. Cuttings from 14.

ILEX CRENATA Thunb. 'MAJOR' 242179 (5239) Evergreen shrub, 8-10' tall; leaves elliptic to obovate, 1" long, crenate. Known for the relatively large leaves. Garden selection. Cuttings from 1.

ILEX CRENATA var. NUMMULARIA (Fr. & Sav.) Yatabe (I. c. 'Mairesii')

A dwarf from of the species, to 30" tall; leaves very small, mostly oval, 4-2" long;

berries black. Very slow growing. Japan.

242099 (5184) Cuttings from 64. 242431 (5492) Cuttings from 1.

243827 (6085) Cuttings from 14.

244653 Plant from 80.

ILEX DIPYRENA Wall.

Evergreen tree, 25' tall; leaves 2-5" long, entire or scattered spine-toothed, the apex with a sharp spine; fruit red. Eastern Himalayas to China. Very variable. Highly desirable as an ornamental species.

242835 (5742) Cuttings from 14.

242924 (5834) Cuttings from 67.

243093 (5942) Cuttings from 74.

243255 (5976) Staminate. Grown under

Forrest 25424 from w. flank of the Chemi-li, N'Maikha-Salwin divide, n.e. Upper Burma,

alt. 10-11000'. Cuttings from 9.

243256 (5978) Pistillate. Grown under

Forrest 25424. Cuttings from 9. 243257 (5979) Seeds from 9.

243258 (5980) Staminate. Grown under Forrest 25362 from the Shweli-Salwin divide, mid w. Yunnan, alt. 11000'. Cuttings from 9. 243259 (6010) Pistillate. Grown under an unnumbered Forrest introduction. Cuttings

from 9. 243313 (6030) Staminate. Grown under an unnumbered Forrest introduction. Cuttings

243864 (6011) Grown from original Forrest introduction from China. Seeds from 9.

ILEX FARGESII Franch. Small evergreen tree or large shrub; leaves mostly oblanceolate, 4-6" long, dull above. Shy fruiter in British gardens. China.

242192 (5251) Grown under Wilson 148.

Cuttings from 1. 242999 (5796) Cuttings from 14.

243094 (5941) Very wide leaved form. Cuttings from 74.

243095 (5931) Leaves narrowly oblong. Cuttings from 74.

243972 (6135) Cuttings from 71.

ILEX FICOIDEA Hemsl.

Small evergreen tree 30'tall, the trunk 8-10" in diameter, whitish to gray, the branches somewhat pendulous; leaves 2-4" long, serrate-margined, leathery; fruit orange-red in dense clusters near the tips of the branches. Fine ornamental species. Seed germinates the first season after planting. Grown under Forrest 24826, from N W. of Tengyueh, alt. 6-7000', Yunnan, China.

243101 (5922) Cuttings from 74.

243260 (5965) Cuttings from 11. 243261 (5966) Seeds from 11.

ILEX FRAGILIS Hook. f.

243096 (5921) Deciduous tree about 30' tall; leaves ovate, papery, serrate, 2-5" long, light yellowish green. Unlike all other Asian Ilex. Eastern Himalayas. Cuttings from 74.

ILEX FRANCHETIANA Loes.

Evergreen, single-trunked small tree, 15-25' tall; fruit red, in clusters. Fine tree holly. W. China. Much like I. fargesii and perhaps only a form of it. 242136 (5211) Grown under Wilson 231. Cuttings from 1. 242137 (5212) Seeds of P. I. 242136. 242192 (5251) Grown under Wilson 231, from western Hupeh, China. Cuttings from 1. 242193 (5248) Cuttings from 1. 243266 (5998) Pistillate. Grown under Forrest 25069. Cuttings from 9. 243312 (6026) Pistillate. Grown under Wilson 4094 from western Szech'uan, alt. 7800', China. 243327 (6027) Seeds of P.I. 243312.

243973 (6146) Pistillate. Grown under

Forrest 25069, Hpimaw pass, N'Maikha-Salwin divide, Upper Burma, alt. 10-11000'. Cuttings from 31.

243974 (6147) Seeds of P. I. 243973. 243975 (6148) Another plant. Cuttings from 31.

#### ILEX GEORGEI Comber

Evergreen small single-trunked tree, 15' tall; fruit red. The leaves resemble those of I. pernyi, but the plant is less hardy and single-trunked as compared with I. pernyi which is usually multi-trunked in cultivation. Grown under Forrest 24826 from hills N W. of Tengyueh, alt. 6-7000', Yunnan, China.

243104 (5939) Cuttings from 74 of the Forrest number.

243265 (5977) Pistillate. Cuttings from 9. 243314 (6032) Staminate. Cuttings from 9.

ILEX HOOKERI King

243097 (5925) Evergreen tree to 50' tall; leaves 2-4" long, mostly oblong, deep green, not lustrous, coarsely spiny undulate-toothed. Himalayas. Cuttings from

ILEX INSIGNIS Hook. f.

Evergreen tree, 20-25' tall; branches grayish to whitish, stout, smooth; leaves 4-5" long,  $1-1\frac{1}{2}$ " wide, elliptic, very finely serrate, furrowed above, dull green, the petioles reddish; fruit red. Fine foliage and showy fruit.

243098 (5928) Grown under Forrest 27767. Cuttings from 74.

243099 (5938) Sex ? Grown under Forrest 25063, from Hpimaw Pass, N'Maikha-Salwin divide, Upper Burma, alt. 10-11000'. Cuttings from 74.

243266 (5998) Pistillate. Grown under

Forrest 25069. Hpimaw Pass, N'Maikha-Salwin divide, N W. Upper Burma, alt. 10-11000'. Cuttings from 9.

243267 (5999). Seeds of P. I. 243266. Cuttings from 9.

243865 (6014) Seeds of P. I. 243268. 244718 Seeds of another plant from 9.

ILEX INTEGRA Thunb. (pistillate)

242674 (5633) Evergreen small tree or large shrub; leaves 3-4" long; fruit bright red. Japan. Cuttings from 15.

242926 (5839) Leaves oblong, 12-3" long, 12-1" wide. Cuttings from 67.

243828 (6068) Cuttings from 14.

ILEX INTRICATA Hook. f.

243100 (5934) Low, rather decumbent evergreen shrub; leaves 1 long; berries red. An evergreen nearly prostrate holly with red berries. Himalayas. Cuttings from 74.

ILEX PEDUNCULOSA Miq.

Small evergreen tree; 10-12' tall, roundheaded; leaves ovate to oblong, 12-2" long, short-acuminate, entire, lustrous green above; berries red. Japan.

242925 (5844) Cuttings from 67.

243262 (5987) Pistillate. Cuttings from 9. 243263 (5988) Seeds from 9.

ILEX PENDUNCULOSA var. CONTINENTALIS Loes. 242927 (5840) Evergreen tree, 30' tall; leaves ovate, 2-4" long, 1-3" wide, lustrous green above, finely serrate on the upper half. China. Leaves larger than the Japanese form. Cuttings from 67.

ILEX PERADO Ait.

241917 (5109) and 241918 (5111) Small evergreen tree, 20' tall; leaves thick coriaceous, lustrous above, spine-margined. Azores. Cuttings from 37.

ILEX PERNYI Franch.

242139 (5207) Staminate. Grown under Wilson 119 from western Szech'uan, alt. 6300', China. Cuttings from 1. 243830 (6060), 243831 (6061), 243832 (6071) Cuttings from 14.

ILEX PERNYI var. VEITCHII (Veitch) Rehd. 242140 (5208) Leaves larger than in the typical from. Cuttings from 1.

ILEX PLATYPHYLLA Webb & Berth.

242836 (5738) Pistillate. Small evergreen tree, 30' tall; leaves green, 2-4" long, 1-12" wide, mostly entire or sparingly spine-toothed, uniformly spine-tipped; berries red. Canary Islands. Cuttings from 14.

243328 (6024) Leaves 5-6" long, 3-4" wide; perhaps the typical form of the species. Elegant foliage. Cuttings from 9.

ILEX PURPUREA Hassk.

242882 (5800) Leaves mostly elliptic, regularly spine-toothed, furrowed to the midvein above, somewhat recurved, leathery, dull green; twigs and the new leaves purplish. Crown under Yu 10918. Yunnan, China. Cuttings from 14. 243001 (5792) Evergreen shrub, 4-6 tall;

leaves elliptic, 2-3" long, ½-1" wide, finely serrate, lustrous green above, the midveins whitish; China. Cuttings from 14. 243838 (6084) Duplicate Collection of P.I. 242882.

ILEX SIKKIMENSIS Kurz

Evergreen tree, 25' tall. Himalayas. Introductions from 9. 243264 (5981) Staminate. Cuttings. 243268 (6008) Pistillate. Grown under Forrest 27767. Cuttings. 244717 Pistillate. Seeds.

ILEX YUNNANENSIS Franch.

243103 (5929) Evergreen shrub, 10-12' tall, much-branched; berries red. Yunnan, China. Cuttings from 74.

IMPATIENS SPP. Balsaminaceae.

242342 (5405) Vigorous perennial to 6' tall; stems succulent; leaves 4-6" long, veins prominent above, deep green; flowers white, 2-3" across; showy. Unusually large flowered, would make a useful ornamental. Cuttings from 1.

IMPATIENS HAWKERI W. Bull.

243976 (6166) Succulent-stemmed perennial, 3' tall; flowers deep pink. Striking. Sunda Islands. Cuttings from 14.

IMPATIENS REPENS Moon

241244 (4811) Cuttings from 3.
242602 (5538) Perennial with creeping succulent stems, whole plant reddish green;
leaves ½-1" long and nearly as wide;
flowers bright yellow. Contrast of the
flowers and reddish stems is striking.

Basket plant. Ceylon. Cuttings from 28.

IOCHROMA COCCINEA Scheid. 241906 (5119) Solanaceae. Shrub 6' tall,

the branches pendulous; flowers tubular, 1" long, scarlet. Mexico. Cuttings from 13.

IOCHROMA WARSCEWICZII Regel

238774 (3774) and 241907 (5124) Evergreen shrub, about 6' tall; leaves 6-8" long; flowers lavender-violet, tubular, pendulous. Peru. Cuttings from 13.

IODINA RHOMBIFOLIA Hook. & Arn. Santalaceae.
Low, evergreen, much-branched pricklyleaved shrub; fruit with a white fleshy
aril. Handsome holly-like foliage. Brazil.
241148 (4851) Cuttings from 3.
241205 (4851) Seeds from 3.

IPOMOEA × HARDINGII Paxt.

Convolvulaceae. Tuberous-rooted perennial twiner; leaves 3-lobed; flowers rose-purple with deep purple throat. Garden hybrid. Introductions from 20. 240763 (4090) Plant.

241206 (4090) Seeds.

IPOMOEA HORSFALLIAE Hook. 'RHEEDII'
242343 (5396) Vigorous climber; leaves
deeply 3-5 lobed, wavy-margined, lustrous
green above; flowers deep rose. Showy. W.
Indies. Cuttings from 1.

IRIS ALATA Poir.

238695 (3710) Bulbous; 6" tall; flowers blue, midwinter. Between Condeixa and

Penela near the Tagus River, PORTUGAL.
March 28, 1957. Corms.
238952 (3784) Open stony slopes in limestone region, near Venda do Brasil and
near Penela, southeast of Condeixa,
PORTUGAL. April 5, 1957. Corms.

IRIS BIFLORA L.

238953 (3785) Rhizomatous; 6" tall; flowers blue to violet-purple. Open stony slopes in limestone region, near Venda do Braxil and near Penela, southeast of Condeixa, PORTUGAL. April 5,1957. Rhizomes.

IRIS × JAPWATTII (I. japonica × I. wattii) 242676 (5629) Garden hybrid Rhizomes from

15.

IRIS SISYRINCHIUM L.

238954 (3756) Cormous; 12" tall; flowers deep blue. Along roadside and in fields near Venda do Brasil and Penela, southeast of Condeixa, PORTUGAL. April 5, 1957. Corms.

239060 (3797) 10" tall. Dry rocky, exposed south facing slopes, 12 mi. S E. Seville, along road N. 334, Prov. Seville, SPAIN. April 13, 1957.

J

JABOROSA INTEGRIFOLIA Lam.

Solanaceae. Rhizomatous perennial; leaves 6-8" long, basal; flowers white, long-tubular, 2-3" long. Argentina. 240438 (4005) Rhizomes from 17.

242677 (5635) Rhizomes from 15.

JACOBINIA SUBERECTA E. André

Acanthaceae. Perennial herb, 12-18" tall; leaves white-tomentose; flowers tubular, orange; showy. Uruguay.

241096 (4647) Cuttings from 27. 241355 (4972) Cuttings from 4.

241384 (4996) Cuttings from 5.

JACOBSENIA KOLBEI (L. Bolus) L. Bolus & Schwant.

(4190) Aizoaceae. Cuttings from 75.

JASMINUM CAPENSE Thunb.

240037 (3943) Oleaceae. Sprawly evergreen climber; leaves deep green, lustrous, 1-2" long; flowers white. S. Africa. Cuttings from 7.

JASMINUM ELEGANS Knobl.

238775 (3762) and 241908 (5118) Large shrub; flowers yellow, fragrant. Madagascar. Cuttings from 13.

JASMINUM POLYANTHUM Franch.

239481 (3858) and 241245 (4796) Evergreen, robust climber; flowers white to pinkish, fragrant; fine, floriferous spring bloomer. China. Cuttings from 3.

JASMINUM WALLICHIANUM Lindl.

232284 (5317) Robust erect shrub, muchbranched, arching and moundlike; flowers yellow; fine ornamental species. Himalayas. Cuttings from 1.

JUMELLEA BATHIEI Schltr.

242745 (5653) Orchidaceae. Epiphyte. Col-

lected by L. Maurice Mason. Madagascar. Plant from 28.

JUMELLEA GRACILIPES Schltr.

242746 (5676) and 242747 (5688) Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

JUNIPERUS SPP.

238522 (3654) Pinaceae. Small evergreen tree, 20' tall, south-facing rocky slopes, 3000', along Rio Esla, near Riaño, Prov. Léon, SPAIN. March 18, 1957. Cuttings and seeds.

238592 Seeds of P.I. 238522.

245342 ex Bonin Islands. Plants from 81.

JUNIPERUS CHINENSIS L. 'BLANNIN'

247785 Garden origin. Plants from 70.

JUNIPERUS CHINENSIS L. 'EXPANSA NANA' 245342 Dwarf. Garden origin. Plants from 81.

JUNIPERUS COMMUNIS L.

238696 (3700) Prostrate evergreen shrub; forms large mats on open granitic rocky slopes, Serra de Estrella, alt. 5100'. PORTUGAL. March 27, 1957. Cuttings. 245336 and 245339 Shrub to small tree. Plants from 81.

Plants from 81.
JUNIPERUS COMMUNIS L. 'AUREA'

245337 Tips of the young growth yellowish. Garden origin. Plants from 81.

JUNIPERUS COMMUNIS var. DEPRESSA Pursh 245336 Low shrub, 3-1/2' tall. Eastern North America. Plants from 81.

JUNIPERUS COMMUNIS L. 'REPANDA'

247783 Dutch origin. Plants from 70.

JUNIPERUS FORRESTII

245338 Plants from 81.

JUNIPERUS HORIZONTALIS Moench 'COMPACTA' 247784 Growth very dense. Garden origin. Plants from 70.

JUNIPERUS OXYCEDRUS L.

238697 (3680) Evergreen tree, 40' tall with pendulous branches, especially handsome when old. Rocky open slopes, alt. 1800'. Serra do Mogadouro, between Mogadouro and Castelo Branco, northeastern PORTUGAL. March 24, 1957. Cuttings and seeds.
239080 (3811) Among granite boulders near El Escorial, Prov. Madrid, SPAIN. April

18, 1957. Seeds.
JUNIPERUS RECURVA Buch.-Ham.

245340 Evergreen tree to 30' tall with pendulous branchlets; elegant.

Himalayas. Plants from 81.

JUNIPERUS SABINA L.
239081 (3806) Prostrate shrub, 12-14"
tall, the branches spreading; open rocky
mountain slopes, alt. 6000'. Sierra Nevada
Mountains, SPAIN. April 15, 1957. Cuttings and seeds.

JUNIPERUS SQUAMATA Lamb. var. FARGESII Rehd.

247786 Tree, 15-60' tall. W. China. Plants from 70.

KADSURA MARMORATA (E.G. & A. Hends.) A.C. Sm. 242371 (5414) Schizandraceae. Vigorous evergreen stout scrambler with twining stems; leaves broadly ovate, 6-8" long, 4-5" wide, acuminate, dark green above. Borneo. Cuttings from 1.

KALANCHOE

Crassulaceae. A large succulent genus of Africa, Madagascar, and neighboring islands. The collection at 'Les Cedres' (3) is one of the largest in cultivation; many kinds also are growing in the Jardin Exotique at Monaco. The genus is extremely diverse in habit, sometimes low creeping, to large subshrubs, climbers, or usually erect herbs. The genus lends itself to hybridization for new ornamental types. The leaves of many are attractive and the flowers of others are very showy. Several of the species in the present listing never have been cultivated before, and a few only recently have been described as new to science.

KALANCHOE SPP.

238504 (3664) Angola. Seedlings from 24.

(4875) Cuttings from 3.

(4881) Sent to (3) by P. R. R. Bally,

Nairobi, Kenya. Cuttings from 3.

(4890) Cuttings from 3.

(4935) Flowers violet; summer. Cuttings from 3.

(4936) Plants 3' tall; flowers scarlet; summer. Kenya. Cuttings from 3.

(4954) Seeds from 3.

KALANCHOE ALICIAE R. Hamet

(4918) Madagascar. Cuttings from 3.

KALANCHOE AMBOLENSIS Humb.

(4897) Madagascar. Cuttings from 3.

KALANCHOE AROMATICA H. Perr.

(4928) Madagascar. Cuttings from 3.

KALANCHOE BEAUVERDII R. Hamet

(4900) Madagascar. Cuttings from 75.

KALANCHOE BLOSSFELDIANA Poelln.

(4920), (4923) and (4927) Madagascar. Cuttings from 3.

KALANCHOE BRACTEATA Scott-Elliot

(4356) S. Madagascar. Cuttings from 75. (4911) Cuttings from 3.

KALANCHOE CAMPANULATA (Bak.) Baill. var. PANDURIFORMIS

(4880) Madagascar. Cuttings from 3.

KALANCHOE CRENATA Haw.

Sierra Leone. Cuttings from 3.

(4876) Typical form.

(4887) Form n. 7 at Les Cedres.

(4891) Form n. 8 at Les Cedres.

(4899) Form n. 5 at Les Cedres.

(4906) Form n. 4 at Les Cedres.

(4908) Form n. 5 (in part) at Les Cedres.

KALANCHOE CYLINDRICA var. SPICULOSA

(4528) Cuttings from 3.

KALANCHOE DAIGREMONTIANA R. Hamet (4888) and (4907) Southwestern Madagascar. KALANCHOE ONGLERIANA (4954) Seeds from 3. KALANCHOE ORGYALIS Bak. Cuttings from 3. KALANCHOE DENSIFLORA Rolfe (4352) Cuttings from 75. (4886) Kenya. Cuttings from 3. KALANCHOE PELTATA (Bak. KALANCHOE ERIOPHYLLA Hilsenb. & Bojer (4909) Madagascar. (4350) Madagascar. Cuttings from 75. KALANCHOE PETERI Werd. KALANCHOE PELTATA (Bak.) Baill. (4909) Madagascar. Cuttings from 3. Tanganyika.
(4346) Cuttings from 75.
(4901) Cuttings from 3. KALANCHOE FAUSTII Font Quer KALANCHOE FAUSTII Font Quer

(4345) Morocco. Cuttings from 75.

(4346) Cuttings from KALANCHOE FEDTSCHENKOI R. Hamet

(4895) Madagascar. Cuttings from 3.

(4895) Madagascar. Cuttings from 3.

(4349) Cuttings from 4.

(4349) Cuttings from 4. (4349) Cuttings from 75. KALANCHOE PORPHYROCALYX (Bak.) Baill. (4355) Madagascar. Cuttings from 75.

KALANCHOE GRACILIPES (Bak.) Baill.

(4910) Epiphytic. Madagascar. Cuttings (4882) Madagascar. Cuttings from 3. KALANCHOE PUMILA Bak. Madagascar. Cuttings from 3. 240026 (3862) Sprawly perennial; leaves KALANCHOE GRANDIFLORA Wight & Arn. KALANCHOE GRANDIFLORA Wight & Arn.

(4905) E. Africa. Cuttings from 3.

KALANCHOE GUILLAUMINII R. Hamet

(4929) Cape Province, South Africa.

Cuttings from 3.

KALANCHOE HILDEBRANDTII Baill.

(4931) Madagascar. Cuttings from 3.

KALANCHOE JONGMANSII R. Hamet

(4904) Form n. 2 at Les Cedres.

(4921) Form n. 1 at Les Cedres.

(4894) Ethiopia. Cuttings from 3.

KALANCHOE ROLANDII-BONAPARTEI R. Hamet. & whitish farinose; flowers deep lavender. H. Perr. (4919) Madagascar. Cuttings from 3. KALANCHOE JONGMANSII R. Hamet KALANCHOE JONGMANSII R. Hamet

(4924) Madagascar. Cuttings from 3.

KALANCHOE × KEWENSIS (K. flammea × K. tereti
KALANCHOE ROLANDII-BONAPARTEI var. PAULIANII folia) (4879) Madagascar. Cuttings from 3. Garden hybrid.

(4343) Cuttings from 75.

(4922) Cuttings from 3.

KALANCHOE LAXIFLORA Bak.

Madagascar. Cuttings from 3.

(4898) Form n. 1 at Les Cedres.

(4902) Form n. 4 at Les Cedres.

(4902) Form n. 2 at Les Cedres.

(4917) Form n. 3 at Les Cedres.

(4877) Cuttings from 3.

KALANCHOE ROSEA R. Hamet & H. Perr.

'SERRATIFOLIA'

(4877) Cuttings from 3.

KALANCHOE ROSEA R. Hamet & H. Perr. 'TRILO
(4915) Form n. 2 at Les Cedres.

(4874) Cuttings from 3.

KALANCHOE LONGIFLORA Schltr. 'COCCINEA'

(4892) Cuttings from 3.

KALANCHOE ROSEA R. Hamet & H. Perr. 'TRILO
(4874) Cuttings from 3.

KALANCHOE ROSEA R. Hamet & H. Perr. 'TRILO
(4874) Cuttings from 3. Garden hybrid. KALANCHOE ROSEA R. Hamet & H. Perr. (4892) Cuttings from 3. (4926) Socotra to Cape Province. Cuttings KALANCHOE LONGIFOLIA Geddes from 3. 241089 (4115) Erect, 3-4' tall, much-KALANCHOE SCHIMPERIANA A. Rich. branched towards the top. Seeds from 3. (4893) Eritrea, Ethiopia. Cuttings from 3. KALANCHOE MANGINII R. Hamet & Perr. KALANCHOE SCHIZOPHYLLA (Bak.) Baill. (4889) Climbing. Madagascar. Cuttings Madagascar. 240024 (3865) Low, decumbent succulent; from 3. flowers scarlet. Spring. Good basket KALANCHOE SMITHII plant, showy. Cuttings from 3. (4913) Cutting 241090 (4117) Seeds from 3. (4925) Cuttings from 3. (4932) Madagas (4913) Cuttings from 3. KALANCHOE STREPTANTHA Bak. (4932) Madagascar. Cuttings from 3. KALANCHOE UNIFLORA (Stapf) R. Hamet KALANCHOE MARMORATA Bak. (<u>Kitchingia uniflora</u>) (4884) Trailing. Fine for baskets. (4903) Eritrea, Ethiopia. Cuttings from 3. KALANCHOE MARNIERANA (Mann. & Boit.) Jacobs. Madagascar. Cuttings from 3. Z40025 (3865) and 4912) SOUTHWES TO SEE MALANCHOE VELUTINA WELW.

KALANCHOE MILLOTII R. Hamet & H. Perr.

KALANCHOE VIGUIERI R. Hamet & H. Perr.

(4878) Angola. Cuttings from 3.

KALANCHOE VIGUIERI R. Hamet & H. Perr. (4351) Cuttings from 75. (4344) Madagascar. Cuttings from 75. (4351) Cuttings from 75.
(4914) Cuttings from 3.

KALANCHOE MINIATA Hilsenb. & Bojer
(4885) Madagascar. Cuttings from 3.

KALANCHOE MINIATA var. SUBPELTATA Bak.
(4930) Madagascar. Cuttings from 3.

KALANCHOE MORTAGEI R. Hamet & H. Perr.
(4348) Madagascar. Cuttings from 75.

KIGGELARIA AFRICANA L.
240114 (3965) Bixaceae. Evergreen tree

to 60' tall; flowers clustered, small, white. South Africa. Cuttings from 7.

KNIPHOFIA SPP.

239681 (3897) Liliaceae. Very robust species with creamy yellow flowers. Late autumn. South Africa. Plant from 8.

KOHLERIA AMABILIS (Planch. & Lind.) Fritsch (Isoloma amabilis) Gesneriaceae. 238875 (3742). Perennial with hairy leaves and large, red-speckled, pouchlike flowers. Handsome. Colombia. Cut-

tings from 13.

KOHLERIA LINDENIANA (Regel) H. E. Moore 242604 (5534) Rhizomatous perennial; stems more or less creeping, rooting at the nodes; leaves 3-4" long, broadly ovate, the veins deep green, purplish red between, soft pubescent; flowers about 1/2" across, white with lavender eye. Tropical America (Ecuador). Cuttings from 28.

KOPSIA FRUTICOSA (L.) A. DC.
Apocynaceae. Evergreen shrub; leaves obovate or elliptic, lustrous green above, 6-8" long; flowers 2" across, deep pink. India.
241223 (4810) Cuttings from 3.
242344 (5357) Cuttings from 42.

### L

LAPIEDRA MARTINEZII Lag.

241603 (5051) Amaryllidaceae. Rare bulbous species native of Spain. Bulb from 12.

LARDIZABALA BITERNATA R. & P. 241407 (5018) Lardizabalaceae. Evergreen, vigorous climber; leaves lustrous. Chile. Cuttings from 3.

LAURELIA AROMATICA Juss. (L. serrata)
Monimiaceae. Evergreen tree to 40' tall.
Has withstood zero F. in the south of England. Chile. Cuttings from 9.

LAURELIA NOVA-ZEALANDIAE A. Cunn. 243105 (5932) Evergreen tree. New Zealand. Cuttings from 74.

LAURUS NOBILIS L. 'ANGUSTIFOLIA'
242928 (5836) Lauraceae. Evergreen tree;
leaves narrowly elliptic, 3-4" long, 1/2l" wide, the margins slightly crispate.
Garden origin. Cuttings from 67.

LAVANDULA 'HIDCOTE'
243978 (6133) Labiatae. Evergreen shrub,
2' tall; choice selection with the flowers
yery dark lavender. Plant from 71.

LAVANDULA 'HIDCOTE GIANT'
243977 (6130) Evergreen shrub, 2' tall.
Garden origin. Cuttings from 71.

LAVANDULA SPICA L. 'ALBA'
242994 (5890) Evergreen shrub, 3' tall;
flowers white. Garden origin. Cuttings
from 68.

LAVANDULA SPICA L. 'NANA'
242995 (5891) Dwarf evergreen shrub with
gray foliage. Garden origin. Cuttings from
68.

LEEA AMABILIS Veitch

242605 (5548) Vitaceae. Shrub; leaves with 5, 7, or 9 leaflets, elliptic, toothed, bronze green above when young and with a white stripe down the midvein, reddish below. Very handsome while young. Borneo. Plant from 28.

LENOPHYLLUM PUSILLUM Rose
(4713) Crassulaceae. Mexico. Cuttings from
3.

LEONOTIS DYSOPHYLLA Benth.
241858 (5035) Labiatae. Subshrub, 4-5' tall
tall; flowers orange in dense clusters at
the nodes. Less ornamental than L. leonurus

but worth growing. South Africa. Seeds from

LEPTOSPERMUM SPP. (Grown as L. botcaneri but this name perhaps untenable)
241246 (4799) Myrtaceae. Nearly prostrate evergreen shrub; flowers pink. Cuttings from 3.

LEUCOJUM AUTUMNALE L.

238505 (3660) Amaryllidaceae. Leaves
grass-like, 5-6" long; flowers white.
Autumn. Portugal, Spain. Bulbs from 24.
243002 (5765) Seeds from 36.

LEUCOJUM AUTUMNALE 'WISLEY'
242229 (5280) More robust and with larger
flowers than the typical form of the
species. Garden origin. Bulbs from 1.

LEUCOJUM VERNUM var. CARPATICUM (Herb.) Sweet 242230 (5291) Flowers white, the segments yellow-tipped. Southeastern Europe. Bulbs from 1.

LEYCESTERIA CROCOTHYRSOS Airy-Shaw
242345 (5412) Caprifoliaceae. Deciduous
shrub, 4-6' tall; leaves ovate or elliptic,
3-4" long, wavy-margined; flowers yellow.
A recently discovered ornamental species.
Assam. Cuttings from 1.

LIGUSTRUM AMURENSE Carr. 'PENDULUM'
239931 (3914) Oleaceae. Form with weeping
branches. Usually grafted to a standard
privet. Garden origin. Cuttings from 46.

LIGUSTRUM CONFUSUM Decne.

Large deciduous shrub, 10-12' tall; leaves peach-like, mostly oblong, acuminate, 4-5" long, lustrous above, lighter below. Good ornamental species, ought to be better known. India.

242929 (5843) Cuttings from 67. 243979 (6144) Seeds from 31.

LIGUSTRUM DELAVAYANUM Hariot 239932 (3913) Evergreen shrub to 10' tall; flowers white. China. Cuttings from 46.

LILIUM POMPONIUM L.
240924 (4120) Liliaceae. 2-3' tall, robust; leaves grass-like; flowers deep
orange-red. On talus slopes above the
River Vésubie, near Lantosque, 25 mi. n.
of Nice, Alpes-Maritime, FRANCE. June 16,
1957. Bulbs.

LIMONIASTRUM MONOPETALUM (L.) Boiss.
Plumbaginaceae. Evergreen shrub to 10'
tall with arching to pendulous branches;

leaves thickish, hoary white, brittle; flowers lavender-pink, showy. Summer. Good seashore shrub. Portugal and Canary Islands.

241086 (4497) Cuttings from 56. 241919 (5102) Cuttings from 63.

LINDERA COMMUNIS Hemsl.

243269 (6013) Lauraceae. Evergreen small tree, 20' tall. Grown under Forrest 24030 from the Shweli-Salwin divide, alt. 8,000', Yunnan, China. Cuttings from 9.

LIPARIS SPP.

242749 (5729) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

LIPARIS CONFUSA J.E. Sm.

242748 (5713) Epiphyte; flowers white, 1/4" long, spicate. Grown under L. Maurice Mason 66. New Guinea. Plants from 28.

LIQUIDAMBAR ORIENTALIS Mill.

238023 (3611) Hamamelidaceae. Small deciduous tree 20-60' tall; leaves and fruit smaller than in L. styraciflua. Asia Minor. Cuttings from 2.

LITHOPS

Aizoaceae. Stemless succulents, each plant consisting of 2 united leaves which are conical and truncate, the flat upper surface variously marked and sculptured. The plants mimic the stones of the habitat; flowers white or yellow. Namaqualand, South Africa. Introductions from 75.

LITHOPS BROMFIELDII L. Bolus

(4379) Cape Province, South Africa.

LITHOPS CHRYSOCEPHALA Nel

(4380) Cape Province, South Africa.

LITHOPS DEBOERI Schwant.

(4374) SW. Africa.

LITHOPS DENDRITICA Nel

(4373)

LITHOPS DIVERGENS L. Bolus (4407)

LITHOPS GRACILIDELINEATA Dtr.

(4377a)

LITHOPS INAE Nel

(4371)

LITHOPS INSULARIS L. Bolus

(4372)

LITHOPS KARASMONTANA (Dtr. & Schwant.)

N. E. Br.

(4377) SW. Africa.

LITHOPS LINEATA Nel

(4375)

LITHOPS SALICOLA L. Bolus

(4378) Orange Free State.

LITHOPS VENTERI Nel

(4376)

LITHOSPERMUM DIFFUSUM Lag.

238024 (3637) Boraginaceae. Prostrate suffrutescent perennial with dark blue flowers. Rocky hillsides above the sea beyond Pesajes de San Juan, near San Sebastian, Prov. Guipuzcoa, SPAIN. March 14, 1957.

LITHOSPERMUM FRUTICOSUM L. 'ROSMARINIFOLIUM'
Erect, spreading, suffruticose subshrub,
6-12" tall; leaves rosemary-like; flowers
blue. Mediterranean. Fine form.
241327 (4962) Cuttings from 58.
241357 (4974) Cuttings from 4.

LOBELIA ERINUS L. 'KATH MALLARD'

242678 (5636) Flowers double, pale blue. Garden origin. Cuttings from 15.

LOBELIA FULGENS Willd. 'QUEEN VICTORIA'
Lobeliaceae. Rhizomatous perennial, 3-4'
tall; leaves reddish; flowers bright scarlet, an inch long. Garden origin. Extremely attractive. Requires much moisture
during growth, and prefers a cool summer
night temperature.
242432 (5500) Cuttings from 1.
244023 Plants from 79.

LOBELIA 'Jean'

244023 Probably a hybrid of <u>L. cardinalis</u> × <u>L. syphilitica</u>. Flowers lavender. Plants from 79.

LOBELIA 'MRS. HUMBERT'

244025 Plants from 79. LOBIVIA ARGENTEA Backbg.

(4704) Cactaceae. Bolivia. Cuttings from 3.

LOBIVIA CABRADEI

(4695) Plant from 3.

LOBIVIA CORBULA (Herrera) Britt. & Rose (4694) Peru. Cuttings from 3.

LOBIVIA DIGITIFORMIS var. ASTERANTHEMA (4709) Plants from 3.

LOBIVIA EMMAE Backbg.

(4226) Argentina. Plants from 75.

LOBIVIA FAMATIMENSIS Britt. & Rose (4286) Plants from 75.

LOBIVIA FAMATIMENSIS var. ALBIFLORA (Wessn.)
Krainz

(4692) Cuttings from 3.

LOBIVIA FORMOSA (Pfeiffer) Dodds var. RUBRIFLORA

(4693) Plants from 3.

LOBIVIA HASTIFERA Werd.

(4163) Argentina. Plants from 75.

LOBIVIA HUASCHA (Web.) W. T. Marshall (4703) Plants from 3.

LOBIVIA KUPPERIANA Backbg.

(4230) Bolivia. Plants from 75.

LOBIVIA LEUCOMALLA Wessn.

(4680) Argentina. Plants from 3.

LOBIVIA PENTLANDII (Hook.) Britt. & Rose 'ACHATINA'

(4691) Plants from 3.

LOBIVIA PENTLANDII var. MAXIMILIANA Heyd. ex Dietr. 'CRïSTATA'

(4674) Cuttings from 3.

LOBIVIA PENTLANDII (Hook.) Britt. & Rose 'OCHROLEUCA'

(4689) Plants from 3.

LOBIVIA REBUTIOIDES Backbg. 'KRAUSSIANA' (4325) Argentina. Plants from 75.

LOBIVIA REBUTIOIDES Backbg. 'MARSONERI' (4687) Argentina. Plants from 3.

LOBIVIA ROSSII Harden.

(4225) Plants from 75.

LOBIVIA SANGUINIFLORA Backbg.

(4262) Argentina. Plants from 75.

LOBIVIA SCHNEIDERIANA Backbg.

(4690) Bolivia. Cuttings from 3.

LOBIVIA STOLLENWERKIANA Boedek.

(4285) Plants from 75.

LOBIVIA WALTERSPIELII Boedek.

(4688) Bolivia. Plants from 3.

LOBIVIA WRIGHTIANA Backbg.

(4323) Peru. Cuttings from 75.

LOMATOPHYLLUM MACRUM (Haw.) Salm ex Roem. & Schult.

(4584) Liliaceae. Madagascar, Mauritius. Cuttings from 3.

LOMATOPHYLLUM ORIENTALE H. Perr.

(4624) Madagascar. Cuttings from 3.

LONICERA SPP.

242285 (5325) Caprifoliaceae. Deciduous shrub, trailing; leaves 1/2" long, obovate. Not a twining sort, but the branches more or less prostrate. Grown under Cooper 5626. China. Cuttings from 1.

LONICERA ETRUSCA Santi

238698 (3693) Semi-evergreen climber; flowers creamy yellow suffused with purplish red. Above the Rio Douro at Barca d'Alva, Spanish frontier, PORTUGAL.
March 25, 1957. Cuttings.

LOPEZIA MINIATA DC.

Onagraceae. Perennial 2-3' high (grown as an annual), much-branched; flowers rose. Excellent bedding plant. Mexico. 240799 (4098) Cuttings from 5. 241859 (4993) Seeds from 5.

LOXANTHOCEREUS ERIOTRICHUS (Werd. & Backbg.)
Backbg.

(4305) Cactaceae. Cuttings from 75.

LOXANTHOCEREUS SEXTONIANUS (Backbg.) Backbg. (4297) Plants from 75.

LUEHEA DIVARICATA Mart. Tiliaceae.

241408 (5021) Small deciduous tree; leaves silvery below, green above. Flowers white. Brazil. Cuttings from 3.

LYCIUM AFRUM L.

242038 (5106) Solanaceae. Large muchbranched shrub, 6-8' tall, round-headed; leaves 1" long; fruit 1/2" in diameter, orange. Worth growing for the fruit. Mediterranean. Seeds from 63.

# M

MACHAIROPHYLLUM STENOPATALUM L. Bolus (4182) Aizoaceae. Cape Province, South Africa. Cuttings from 75.

MACHILIS VIRIDIS Hand .- Mazz.

243286 (5947) Large evergreen shrub, 15' tall; leaves mildly aromatic when chrushed. Native of Yunnan, China. Cuttings from 11.

MACKAYA BELLA Harv.

240439 (4010) Acanthaceae. Evergreen

shrub 10' tall; leaves lustrous; flowers tubular, lavender. Attractive. South Africa. Cuttings from 17.

MACLEANEA PUNCTATA Hook. f. 243892 (6126) Ericaceae. Scrambling, rank evergreen shrub; leaves lustous

green above; flowers similar to Agapetes. Ecuador. Cuttings from 47.

MAESA SPP.

240812 Myrsinaceae. Plant and cuttings from 5.

MAGNOLIA CAMPBELLII Hook. f. & Thoms. Magnoliaceae.

242904 (5830) Deciduous tree; flowers about 1' across rose-pink, precocious. Long considered to be the darkest pink-flowered M. campbellii plant in Great Britain. Himalayas. Cuttings from 14. 243867 (6055) Flowers pink. Seeds from 9.

MAGNOLIA CAMPBELLII Hook. F. & Thoms. 'ALBA' 243866 (6052) Deciduous tree, 40' tall; flowers white, precocious. Garden selection. Few of the progeny will come true from seed. Seeds from 9.

MAGNOLIA CAMPBELLII × M. MOLLICOMATA
242433 (5499) Deciduous tree; flowers
8-10" across, pink. Garden origin.
Cuttings from 1.

MAGNOLIA DAWSONIANA Rehd. & Wils.

Deciduous small tree; flowers pink, striking. W. Szechuan, China.
238025 (3593) Cuttings from 2.
243868 (6051) Seeds from 11.

MAGNOLIA GLOBOSA Hook. f. and Thoms.
243869 (5968) Large spreading deciduous
shrub, 15' tall; flowers white, pendulous. The leaves reddish hairy beneath.
Himalayan form. Seeds from 11.
243870 (6050) Chinese form. Forrest
collection from China. Seeds from 9.
243876 (6000) Chinese form. Leaves whitish
pubescent beneath. Seeds from 11.

pubescent beneath. Seeds from 11.
MAGNOLIA GRANDIFLORA L. 'LANCEOLATA' ('Exmouth')

242400 (5425) Leaves narrowly lanceolate. Cuttings from 1.

MAGNOLIA MOLLICOMATA W. W. Sm.

Deciduous tree, 40' tall; buds and twigs hairy; flowers white, 6" across, flushed purplish, fragrant.

243871 (6094) Grown under Forrest 24213 from Shweli-Salwin divide, Yunnan-Burma border, 10-11000'. Seeds from 9. 243872 (6095) Another Forrest collection unnumbered. Seeds from 11.

244032 (6154) Another tree. Seeds from 11.

MAGNOLIA NITIDA W. W. Sm.

243270 (5971) Small evergreen tree, 20' tall; leaves lustrous green, 2-3" long, 1" wide; flowers 2-3" across, white. China. Cuttings from 9.

MAGNOLIA SARGENTIANA Rehd. & Wils.

Deciduous tree, 40' tall; flowers pink,
precocious. W. China.
238026 (3592) Cuttings from 2.

238027 (3602) Another tree. Cuttings MAMMILLARIA BOMBYCINA Quehl (4218) Mexico. Plant from 75. 243873 (6049) Flowers white. Seeds MAMMILLARIA BUCARELIENSIS Craig from 11. (4515) Mexico. Plants from 3. MAMMILLARIA CONFUSA var. ROBUSTISPINA Craig 243874 (6053) Seeds from 9. 243875 (6054) Flowers pink. Seeds from 11. (4505) Mexico. Plants from 3. MAMMILLARIA FAUXIANA Backbg. MAGNOLIA X SOULANGEANA Soul. 241973 (5158) Reputably this hybrid but (4504) Mexico. Plants from 3. the flowers pure white, 3-4" across. MAMMILLARIA MARTINEZII Tiegel. Precocious and very fine. Cuttings from 35. (4516) Mexico. Cuttings from 3. MAMMILLARIA MELANOCENTRA Poselger MAHONIA SPP. (4268) Mexico. Plants from 75. 239248 (3818) and 241328 (4945) Shrub to MAMMILLARIA MYSTAX 10' tall; leaves pinnately divided. (4511) Plants from 3. From seed originally collected in Burma MAMMILLARIA NEJAPENSIS Craig & Dawson by Major L. Johnston. Resembles M. Mexico. nepalensis. Cuttings from 33. (4270) Plants from 75. MAHONIA AQUIFOLIUM (Pursh) Nutt. 'ALDEN-(4512) Plants from 3. HAMENSIS' MAMMILLARIA NEOSCHWARTZIANA Scharz 242287 (5341) Evergreen shrub, 2-3' (4550) Mexico. Plants from 3. tall; leaflets dull green above, MAMMILLARIA PARKINSONII Ehrenb. 'BREVISPINA' regularly spine-toothed, the petioles (4551) Plants from 3. reddish. Possibly a hybrid. Garden origin. MAMMILLARIA PICTA Meinshausen Cuttings from 1. (4558) Mexico. Plants from 3. MAHONIA LOMARIIFOLIA Takeda MAMMILLARIA RITTERIANA Boedek. 239376 (3825) Large evergreen shrub 12-15' (4508) Mexico. Plants from 3. tall; flowers terminal, yellow, winter; MAMMILLARIA RUBIDA Schwarz fruit in large pendulous clusters, blue. (4507) Mexico. Plants from 3. Very fine. Yunnan. Seeds from 33. MAMMILLARIA SANLUISENSIS Shurly MAHONIA MORANENSIS (Schult. f.) I. M. Johnston (4510) Mexico. Plants from 3. 241474 (5038) Evergreen shrub, 6-8' tall; MAMMILLARIA SCRIPPSIANA Orcutt leaves spiny, the leaflets relatively thin; fruit blue, bloomy. Mexico. Seeds (4269) Plants from 75. MAMMILLARIA SCRIPPSIANA Orcutt 'ROOKSBIANA' from 59. (4509) Plants from 3. MAHONIA TOLUACENSIS Bean MAMMILLARIA SUBDURISPINA Schwarz 242535 (5586) Evergreen shrub, 4-5' tall; (4553) Mexico. Plants from 3. leaves spine-toothed, the leaflets elliptic, 2-3" long, 1/2-1" wide. Garden MAMMILLARIA SUBPOLYEDRA (Salm-Dyck) Britt. & Rose (M. jalappensis) origin. Cuttings from 28. (4503) Southern Mexico. Plants from 3. MAHONIA × WAGNERI (Jouin) Rehd. (M. aquifolium MAMMILLARIA SURCULOSA Boedek. X M. pinnata) (4287) Mexico. Plants from 75. 242286 (5334) Evergreen shrub, 2-3' tall; MAMMILLARIA SWINGLEI Boedek. leaves dull green above, sharply spiny. (4198) Mexico. Plants from 75. Good dwarfish sort. Garden origin. MAMMILLARIA TOLIMENSIS var. LONGISPINA Craig Cuttings from 1. (4557) Mexico. Plants from 3. MAMMILLARIA VAGASPINA Craig (4481) Cactaceae. Southern Brazil. Plants Mexico. from 3. (4267) Plants from 75. (4552) Plants from 3. (4656) Aizoaceae. Cape Province, South MAMMILLARIA WIESINGERI Boedek. Africa. Cuttings from 3. (4556) Hidalgo, Mexico. Plants from 3. MALPIGHIA FUCATA Ker.

MALACOCARPUS ERINACEUS (Haw.) Rumpler

MALEPHORA MOLLIS (Ait.) N. E. Br.

240003 (3918) Malpighiaceae. Small tree or large shrub, evergreen; flowers white. Jamaica. Cuttings from 7.

MALUS SYLVESTRIS Mill. 'ELISA RATKEE' 238028 (3601) Rosaceae. Small deciduous tree with weeping branches. Garden origin. Hardly north. Grafting wood from 2.

MALVAVISCUS CONZATTII Greenm. 239544 (3868) Malvaceae. Evergreen large shrub; leaves 5-6" long; flowers simulating red lanterns. Mexico. Plant from 3.

MAMMILLARIA ALBILANATA Backbg. (4506) and (4516) Cataceae. Mexico. Plants from 3.

MAMMILLARIA WOODSII Krainz (4266) Mexico. Plants from 75.

MANMILLARIA YAQUENSIS Craig

(4221) Sonora, Mexico. Plants from 75. MANDRAGORA OFFICINARUM L.

242231 (5292) Solanaceae. Mandrake. South Europe. Roots from 1.

MANGLIETIA HOOKERI Cubitt & W. W. Sm. 243981 (6145) Magnoliaceae. Evergreen tree, 20'; leaves 6-7" long, narrowly lanceolate. Grown under Kingdon-Ward 12524. Cuttings from 31.

MANGLIETIA INSIGNIS B1.

243271 (5983) Evergreen tree, 50' tall,

the trunk smooth, white; flowers white. Handsome, Himalayas, Cuttings from 9.

MARANTACEAE (undetermined)

242616 (5532) Rhizomatous perennial; leaves dark green, lustrous. Plant from 28.

MARATTIA FRAXINEA J. E. Sm.
242401 (5416) Marattiaceae. Fronds
leathery, pinnately divided, 4-6' long
from a large swollen base. Old World
tropics. Plant from L.

MARCGRAVIA PICTA Willd.

241247 (4817) Marcgraviaceae. Epiphyte. Stove-house. Brazil. Cuttings from 3.

MARCGRAVIA UMBELLATA L.

Evergreen climbing shrub with hold-fast roots; leaves dimorphic, the mature aerial ones lanceolate to elliptic, acuminate, the juvenile ones broadly ovate, sessile on the stems with hold-fast roots. Species for moist shaded wall in stove-house. Flowers in wild plants pollinated by humming-birds. West Indies. 242346 (5355) Cuttings from 42. 242606 (5574) Cuttings from 28. 243982 (6147) Cuttings from 14.

MARRUBIUM SUPINUM L.

242039 (5058) Labiatae. Rhizomatous perennial, 12-14" tall; leaves lanate; flowers lavender. Foliage handsome. Open south and west facing rocky slopes, alt. 7500', behind the Peñones de San Francisco, Sierra Nevada Mts., SPAIN. August 1, 1957. Seeds.

MAURANDIA ERUBESCENS (D. Don) Gray
241300 (4937) Scrophulariaceae. Scrambling
perennial climber with pubescent leaves
and tubular rose-pink flowers. Very
attractive for walls and baskets. Mexico.
Seeds from 3.

MAUROCENIA CAPENSIS (L.) Sond.

Celastraceae. Evergreen tree, 30-40' tall, with spine-tipped branches; leaves thick, holly-like, 3-4" long, toothed; flowers small, white. Decorative foliage plant, especially while young. Australia. Introductions from 7.
239999 (3928) Cuttings.

240646 (3975) Seeds. MEDINILLA CURTISII Veitch

241941 (5156) Melastomataceae. Evergreen small shrub; leaves lustrous above; flowers white; peduncles and pedicels coral-red. Sumatra. Plant from 30.

MEDINILLA SCORTECHINII King 241942 (5153) Small shrub; flowers coralcolored, drooping. Malaya. Plant from 30.

MEDINILLA VENOSA B1.

242347 (5397) Small shrub 2-3' tall;
leaves elliptic, petiolate, strongly
veined, lustrous green above, soft whitish
pubescent beneath; flowers pink. Malaya.

Cuttings from 1.

MEDIOCALCAR ERECTUM Schlecht. 242751 (5621) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. Plants from 28. MEDIOCALCAR MONTICOLA Schlecht. 242750 (5689) Epiphyte. Grown under L. Maurice Mason 123. New Guinea. Plants

MEDIOCALCAR UNIFLORUM Schlecht. var. ORIENTALE 242752 (5624a) and 242753 (5733) Grown under L. Maurice Mason 139. New Guinea. Plants from 28.

MEDIOLOBIVIA ATROVIRENS (Backbg.) Backbg. (4162) and (4324) Cactaceae. Argentina. Plant from 75.

MEDIOLOBIVIA COSTATA (Werd.) Krainz (4265) Plants from 75. (4493) Plants from 3.

MEDIOLOBIVIA EUANTHEMA (Backbg.) Krainz (4263) Cuttings from 75. (4494) Plants from 3.

MEDIOLOBIVIA HAGGEI (Fric & Schelle) Backbg. (4264) Plants from 75. (4492) Plants from 3.

MEDIOLOBIVIA KESSELRINGIANA Cullm.

(4261) Cuttings from 75.
MEDIOLOBIVIA ORURENSIS (Backbg.) Backbg.
(4495) Plants from 3.

MEDIOLOBIVIA STEINMANNIANA (Solms-Laub.)
Krainz

(4164) Cuttings from 75.

MELASTOMATACEAE (undetermined)
242544 (5614) Perennial. Collected by
L. Maurice Mason. Madagascar. Plant
from 28.

MELIOSMA VEITCHIORUM Hemsl. 243877 (6016) Sabiaceae. Deciduous small tree, 20' tall; fruit the size of a concord grape, purplish black. W. China. Seeds from 9.

MELODINUS SCANDENS Forst. 240038 (3936) Apocynaceae. Evergreen scrambling vine. New Caledonia. Cuttings from 7.

MELOTHRIA HEDERACEA Cong.
Cucurbitaceae. Climbing, weak-stemmed
vine; leaves about 1" wide, very thick.
An unusual succulent-leaved cucurbit
with ivy-shape leaves.
241149((4824) Seeds from 3.
241248 (4824) and 241860 (5034) Cuttings
from 3.

MESTOKLEMA TUBEROSUM (L.) N. E. Br. var.
MACRORHIZA (Haw.) N. E. Br.
(4650) Aizoaceae, Cape Province, South

Africa. Cuttings from 3.
METROSIDEROS DIFFUSA J. E. Sm.
242351 (5350) Myrtaceae. Evergreen
creeping shrub with fine wiry stems;
leaves nearly oval, 1/4-1/2" long,
lustrous green above, reddish below.
Excellent creeper for a warm house. New

Zealand. Cuttings from 42. MICONIA SALDANHAEI Cogn.

242348 (5385) Melastomataceae. Robust shrub, 4-6' tall; leaves broadly ovate, deep green above, lighter below; stems silvery. Brazil. Cuttings from 1.

MICROLEPIA STRIGOSA (Thunb.) Presl 'CRISTATA' 241924 (5096) Polypodiaceae. Fibrous-

rooted, densely tufted; fronds thrice pinnate, the tips of the fronds crested. Fine pot Fern. Plants from 60.

MICROMERIA OBOVATA Benth.

240507 (4038) Labiatae. Suffruticose subshrub; leaves 1-2" long, aromatic. West Indies. Cuttings from 17.

MITRARIA COCCINEA Cav.

241249 (4802) Gesneriaceae. Evergreen creeping shrub; flowers orange-red, pendulous. Hanging basket for cool house. Southern Chile. Cuttings from 3.

MOMORDICA CHARANTIA L.

242349 (5360) Cucurbitaceae. Annual, quick growing vine; fruit warty, opening brilliant orange. A curiosity. India. Seeds from 1.

MONADENIUM ELLENBECKII N. E. Br.

(4615) Euphorbiaceae. Stems fleshy, leafless, 15-18" tall. Kenya. Cuttings from 3.

MONADENIUM GUENTHERI Pax

(4598) Tanganyika. Cuttings from 3.

MONADENIUM LUGARDAE N. E. Br.

(4599) Stems round, fleshy, 10-30" tall, often warty; leaves mostly clustered at the top of the stems. Transvaal. Cuttings from 3.

MONADENIUM MAMMILLARIAE

(4596) Cuttings from 3.

MONADENIUM SCHUBEI (Pax) N. E. Br.

(4597) Kenya. Cuttings from 3.

MONADENIUM YATTANUM Bally

(4567) Kenya. Cuttings from 3.

MONANTHES MURALIS Christ

(4194 Crassulaceae. Canary Islands. Cuttings from 75.

MONANTHES POLYPHYLLA Haw.

(4258) Canary Islands. Cuttings from 75.

MONANTHES SUBCRASSICAULIS (O. Ktze.) Praeg.

(4240) Canary Islands. Cuttings from 75.
MONETIA BARLERIOIDES L'Herit. (Azima tetracantha Lam.)

240039 (3937) Salvadoraceae. Small evergreen tree with whitish flowers. India. Cuttings from 7.

MONTANOA TOMENTOSA Cerv.

240814 (4112) Compositae, Large muchbranch shrub, 10-12' tall; leaves pubescent; ray flowers white. Mexico. Cuttings from 5.

MONVILLEA CAVENDISHII Britt. & Rose. (4330) Cactaceae. Stems slender, prostrate; flowers nocturnal, white. Brazil. Cuttings from 75.

MONVILLEA INSULARIS (Hemsl.) Hemsl. (4294) Clambering, much-branched; flowers yellow. St. Michael's Mount, off Brazil, 5° S. latitude. Cuttings from 75.

MOSCHOSMA RIPARIUM Hochst.

242350 (5356) Perennial 2-3' tall, muchbranched; leaves regularly crenateserrate, ovate, the veins prominent above, impressed; petioles reddish; flowers creamy white. Pot plant, winter flowering. South Africa. Cuttings from 42. MUCUNA ATROPURPUREA (Roxb.) DC.

241150 (4793) Leguminosae. Rampant woody climber, 50' long; inflorescence pendulous, the flowers pouch-like, very dark purplish. Flowers curious. India. Seeds from 3.

MUEHLENBECKIA SAGITTIFOLIA Meissn.
238776 (3771) Polygonaceae. Vigorous
evergreen scrambler, excellent for a wall
or basket. South America. Cuttings from
13.

MUSCARI BOTRYOIDES Mill.

239369 (3843) Liliaceae. 6" tall; flowers in various shades of blue and indigo. Open grassy slopes and meadows, Col de Braus, 20 mi. from Menton, alt. 3000', Alpes-Maritime, FRANCE. April 28, 1957. Bulbs.

MYOPORUM SPP.

240526 (4031) Myoporaceae. Small tree; leaves light green with pellucid dots. Good hedge plant for mild climate. Cuttings from 17.

MYOPORUM ACUMINATUM R. Br.

240040 (3947) Large evergreen bush with leathery punctate leaves. Australia. Cuttings from 7.

MYRIOCARPA LONGIPES Liebm.

240508 (4019) Urticaceae. Evergreen shrub; leaves elliptic-oblong, the veins below with calcium oxalate crystals; flowers in racemes, inconspicuous. Interesting foliage plant. Central America. Cuttings from 17.

MYRSINE CAPITELLATA Wall.

240509 (4030) Myrsinaceae. Evergreen tree; leaves leathery, obovate. Malaya. Cuttings from 17.

MYRSINE TOMENTOSA Presl

240681 (4067) Large evergreen shrub; leaves tomentose beneath, bullate. Peru. Cuttings from 6.

MYRTUS COMMUNIS L.

(3737) Myrtaceae. Evergreen shrub, 4-6' tall; berries black. Between Mizarela and Caneiro, ca. 7 mi. from Coimbra along the Rio Mondego, PORTUGAL. April 3. 1957. Seeds.

### N

NANANTHUS MALHERBEI L. Bolus. Aizoaceae. (4184) Segregate of Mesembryanthemum. Cape Province, South Africa. Cuttings from 75.

NANANTHUS ORPENII (N.E. Br.) L. Bolus (4183) Cuttings from 75.

NARCISSUS ASTURIENSIS (Jord.) Pug.

Amaryllidaceae.

238523 (3647) 3-7" tall; flowers about 1" long, deep yellow. Open grassy slopes near the summit of Puerto de San Gloria, Picos de Europa, alt. 4827', Prov. Santander, SPAIN. March 16, 1957. Bulbs. 238699 (3677) 4-10" tall; flowers yellow.

Scrub-oak woodland in deep soil, Serra da Noqueira, alt. 3000', near Braganca, PORTUGAL. March 23, 1957. Bulbs. 238700 (3699) Open grassy slopes in granitic soil, Serra da Estrella, alt. 5100', PORTUGAL. March 26, 1957. Bulbs.

NARCISSUS BULBOCODIUM L. 238777 (3777) A polyploid race; flowering scapes of 25" tall. In a bog, 25 mi. north of Coimbra along main road to Oporto, PORTUGAL. April 6, 1957. Bulbs. 238877 (3739) Scapes nearly 1' tall. Grassy meadow, along Penacova-Liso road, 12 mi. from Penacova, 12 mi. from Coimbra, PORTUGAL. April 3, 1957. Reputably a hexaploid form. Seeds and bulbs. 238878 Seeds of 238877. 239061 (3794) Plants 6-8" tall. Wet swale on open hill slopes in Cistus ladinifolius country, near Val de Flores, 35 mi. N. of Seville, Prov. Huelva, SPAIN. April 12, 1957. Bulbs. 239062 Seeds of 239061

NARCISSUS BULBOCODIUM var. CITRINUM Bak.
238029 (3640) Flowers chartreuse. On northfacing steep grassy slopes above the sea
beyond Pesajes de San Juan, near San
Sebastian, Prov. Guipuzcoa, SPAIN. March
14, 1957. Bulbs.
NARCISSUS BULBOCODIUM L. var. OBESUS
(Salisb.) Maire
238524 (3653) 3-5" tall, the leaves grasslike; flowers deep yellow. Wet meadows,
along river at Riaño, alt. 3000', Prov.
Léon, SPAIN. March 17, 1957. Bulbs.

NARCISSUS CALCICOLA Mend.

238778 (3755) Dwarf species allied to N.
rupicola; flowers yellow. Rock crevices in pockets containing nearly pure humus,
Serra do Sico, alt. 1200', near Ramalhaes,
west of Pombal which is on the main
Lisbon road south of Coimbra, PORTUGAL.
April 5, 1957. Bulbs.

NARCISSUS CYCLAMINEUS Bak. 238701 (3709) Moist banks of the Fareira River near Valonga, PORTUGAL. March 28, 1957. Bulbs.

NARCISSUS × JOHNSTONII Pug. 'QUEEN OF SPAIN'
(N. pseudonarcissus × N. triandrus var.
cernuus)

238736 (3728) Garden origin. Bulbs from 32.

NARCISSUS JONQUILLA L.

238506 (3666) Jonquil. Collection originally from same locality as P.I. 238702. Introduction from 24.

238702 (3687) Round, grass-like leaves 12-14" long; flowers yellow, fragrant. Rocky sandy banks of the Rio Douro at Barca d' Alva on the Spanish border, PORTUGAL. Typically a stream-bank species. March 25, 1957. Bulbs.

239063 (3792) Among stones and sand along banks of Ric Guardiana near Serpa, road N. 260, PORTUGAL. April 10, 1957. Bulbs.

NARCISSUS JONQUILLA L. 'PLENA'
238737 (3715) Queen Anne's Jonquil. Doubleflowered. Garden origin. Bulbs from 32.

NARCISSUS POETICUS L. var. RECURVUS (Haw.) Fernd.

239333 (3816) Pheasant's Eye. 12-14" tall; perianth white, somewhat recurved; orangecenter. Moist meadows near St. Cannat, Aix-en-Provence, southern FRANCE. April 22, 1957. Bulbs.

239358 (3840) Moist grassy meadow at Levans, Alpes-Maritime, FRANCE. April 28, 1957. Bulbs.

NARCISSUS POETICUS L. var. VERBANENSIS Herb. 239682 (3898) With narrower leaves, the perianth segments more recurved. Grows in drier woodland habitats than var. recurvus. Rocky, grassy meadows on mountain slopes above Lake Maggiore, near Pallanza, ITALY. May 6, 1957. Bulbs.

NARCISSUS PSEUDONARCISSUS L. (wild form)
238738 (3718) Serra d'Arga, Minho, PORTUGAL. Bulbs from 32.
238739 (3719) Bicolored form, originally
collected in northern Portugal. March 30,
1957. Bulbs form 32.

NARCISSUS PSEUDONARCISSUS L. 'EARLY MAXIMUS' 238703 (3712) and 242797 (5253) An early flowering bicolored cultivar with yellow trumpets, sometimes beginning to flower at Christmas-time at Porto. Garden origin. Bulbs from 32.

NARCISSUS PSEUDONARCISSUS L. ssp. NOBILIS (Schultes f.) Fernd. 238525 (3649) 12-14" tall, very vigorous. Meadows along road to Puerto del Ponton, 3 mi. from Riaño, alt. 3000', Prov. Leon, SPAIN. March 17, 1957. Bulbs. Very fine vigorous form.

NARCISSUS PSEUDONARCISSUS L. ssp. TORTUOSUS (Haw.) Fernd.
238526 (3645) Leaves more or less twisted; flowers light sulfur-yellow, pendulous.
North-facing steep sloping meadow, 2-1/2 mi. south of Unquera, road N. 621, Prov. Santander, SPAIN. March 16, 1957. Bulbs. Rare.

NARCISSUS RUPICOLA Duf.

238507 (3663) Leaves grass-like; flowers nearly 1" across, yellow, fragrant, solitary. Material originating from Amedo, Prov. Tres des Mondes, PORTUGAL. Bulbs from 24.

238704 (3684) Among large granitic boulders, between Lagoaca and Freixo de Espada a Cinta near the Rio Douro, alt. 1800', PORTUGAL. March 24, 1957. Bulbs.

NARCISSUS SCABERULUS Henriq.
238705 (3703) 4-12" tall; leaves grasslike; flowers yellow bicolor, 1/2-3/4"
across. Crevices of granite boulders in
pine woodland, 4 mi. south of Nelas, near
road N 234, about 50 mi. NE. Coimbra,
PORTUGAL. March 26, 1957. Bulbs.

NARCISSUS SEROTINUS L. 243837 (6097) Flowers white. October. Vicinity of Palermo, Sicily. Bulbs communicated by the Director, Botanical Garden, Palermo. Sicily. Should be tried for breeding with spring blooming species.

NARCISSUS TAZETTA L. (wild form)
238740 (3714) Material originally from
south of Coimbra near Santerem, PORTUGAL.
Bulbs from 52.

NARCISSUS TAZETTA L. spp. AUREUS (Lois.) Bak.
(N. aureus).
240992 (4060) Yellow flowered. France.
Bulbs from 22.

NARCISSUS TAZETTA L. var. BARLAE Parl. 240926 (4057) Italy. Bulbs from 22.

NARCISSUS TAZETTA L. var. CHRYSANTHUS DC. 240927 (4058) France. Bulbs from 22.

NARCISSUS TAZETTA L. ssp. ITALICUS (Sims) Bak.
(N. italicus)
240308 (3985) Italy. Bulbs from 7.
240993 (4056) Bulbs from 22.

NARCISSUS TAZETTA L. spp. PAPYRACEUS (Ker.) Bak. (N. papyraceus). Mediterranean. 240994 (4059) Bulbs from 22.

NARCISSUS TAZETTA L. 'PUCCINELLII' 240925 (4046) Italy. Bulbs from 22.

NARCISSUS TRIANDRUS L.
238706 (3673) Angel's Tears. 4-10" tall;
flowers creamy white, the perianth segments
sometimes yellowish. On very well-drained
pine clad slopes in acid soil, dry in summer. Serra de Marão, between São Goncaio
and Vila Real, PORTUGAL. March 22, 1957.
Bulbs.

238707 (3679) Among large granite boulders between Lagoaca and Freixo de Espada à Cinta near the Rio Douro, PORTUGAL. Grows with N. bulbocodium and the hybrid found in this locality. March 24, 1957. Bulbs. 238708 (3706) On north-facing grassy slopes, alt. 1500', near Covilha on road towards Manteigas, foothills of Serra da Estrella, PORTUGAL. March 25, 1957. Bulbs. 238741 (3717) Large-flowered form. Bulbs from 52.

NARCISSUS TRIANDRUS L. var. ALBUS (Haw.) Bak. 238527 (3655) 6-8" tall; flowers white or creamy yellow. Moist, sheltered, pine-covered slopes in decomposed granitic soil, along road N. 120, at border of Prov. Orense and Prov. Pontevedra, SPAIN. March 20, 1957. Bulbs.

NARCISSUS TRIANDRUS L. var. CERNUUS (Salisb.)
Bak.
239082 (3810) A low growing form, 4-6"
tall; flowers creamy white. Much dwarfer
form from those collected in Portugal.
North-facing slopes in decomposed granitic
soil, near El Escorial and near the village
of Robeldal, Prov. Madrid, SPAIN. April
18, 1957. Bulbs.

NARCISSUS TRIANDRUS L. var. CONCOLOR (Haw.)
Bak.
Yellow-flowered. Steep rocky slopes under

olive trees, between Mizarela and Caneiro, ca. 6 mi. from Coimbra on Coimbra-Penacova road, PORTUGAL. April 3, 1957.

238879 Seeds. 238880 (3738) Bulbs.

NAUTILOCALYX LYNCHII (Hook. f.) Sprague 242607 (5543) Gesneriaceae. Colombia. Cuttings from 28.

NEMATANTHUS LONGIPES DC.

241151 (4847) Gesneriaceae. Erect perennial, often shrubby; flowers scarlet. Brazil. Cuttings from 3.

NEOCARDENASIA HERZOGIANA Backbg. (4308) Cactaceae. Bolivia. Cuttings from 75

NEOHENRICIA SIBBETTII (I. Bolus) L. Bolus (4181) Aizoaceae. South Africa. Cuttings from 75.

NEOLLOYDIA CLAVATA (Scheidw.) Britt. & Rose (4730) Cactaceae. Mexico. Plants from 3.

NEOLLOYDIA PULLEINEANA Backbg. (4698) San Luis Potosi, Mexico. Cuttings from 3.

NEOPORTERIA ATRISPINOSA (Backbg.) Backbg. (4161) Cactaceae. Chile. Plants from 75.

NEOPORTERIA EBENACANTHA (Monv. ex Labour.)
Ochme

(4668) Chile. Cuttings from 3.

NEOPORTERIA NAPINA var. SPINOSIOR Backbg. (4673) Chile. Plants from 3.

NEPENTHES AMPULLARIA Jack 242019 (5177) Nepenthaceae. Malaya. Plants from 19.

NEPENTHES AMPULLARIA Jack 'VITTATA' 242020 (5178) Malaya. Plants from 19.

NEPENTHES KHASIANA Hook. f. 242021 (5181) India. Plants from 19.

NEPENTHES RAFFLESIANA Jack 242022 (5179) Malaya. One of the showiest species.

NEPENTHES VENTRICOSA Blanco 242023 (5180) Pitchers green, constricted in the middle, 6" long. Philippines. Cuttings from 19.

NEPTUNIA PLENA Benth. 241301 (4868) Leguminosa

241301 (4868) Leguminosae. With the aspect of <u>Mimosa pudica</u>. Remarkable for the sensitive leaves and aquatic habit; the lower portion of the stems become spongy white enabling the plants to float. Grown as a shallow water aquatic. Curiosity. Tropical America. Plants from 3.

NERINE SARNIENSIS (L.) Herb. 243838 (6088) Amaryllidaceae. Guernsey Lily. Flower heads 3-4" or more across, deep pink. Extremely vigorous form. South Africa. Bulbs from 36.

NERIUM OLEANDER L.
239064 (3805) Apocynaceae. Evergreen shrub,
6-8' tall; flowers deep pink. Wild form.
Open rocky hillsides and in canyons along
Mediterranean coast at Motril, Prov.
Granada, SPAIN. April 14, 1957. Cuttings.
241314 (4942) Flowers single, yellow pinktinged. Garden origin. Cuttings from 33.

241315 (4943) Flowers single, corolla yellow at base of the tube, the limb yellowish white. Garden origin. Cuttings from 33. 241316 (4944) Flowers semidouble, carmenred. Garden origin. Cuttings from 33. 241330 (4958) Flowers single, deep carmine. Garden origin. Cuttings from 58. 241331 (4959) Flowers single, burgundyred, darkest red-flowered oleander seen. Cuttings from 58. 241332 (4960) Flowers semidouble rose-pink. Garden origin. Cuttings from 58. 241333 (4965) Flowers single, light yellow, 1-1/2" across. Garden origin. Cuttings 241334 (4967) Flowers pure white 2-1/2" across, opening flat. Very good. Garden origin. Cuttings from 43. 241861 (5084) Wild form. Flowers deep pink. Along stream banks and arroyos, near Motril, Prov. Granada and border of Prov. Malaga, SPAIN. August 5, 1957. Cuttings. 241862 (5091) 'ALBA' Wild white-flowered form. Streambank along road, 13 mi. from Rosal de la Frontera, Prov. Huelva, SPAIN. August 7, 1957. The wild white-flowered form is rare and was seen only in this area mixed with the typical pink form. Cuttings. 239249 (3823) 'AURANTIACUM' Flowers

239249 (3823) 'AURANTIACUM' Flowers orangish yellow with whitish center; so-called yellow oleander. Garden origin. Cuttings from 33.

241329 (4957) 'ROSSO SANGUE' Flowers single, blood-red. Very good. Garden origin. Cuttings from 58.

NOTELAEA EXCELSA Webb & Berth.
Oleaceae. Small evergreen much-branched large shrub to small tree 10-25' tall; leaves holly like, leathery, deep green, lustrous; fruit olive-like, black. Fine evergreen. Canary Islands.
240041 (3948) Cuttings from 7.

240764 (4089) Cuttings from 20. 241604 (5043) Seeds from 44.

NOTHOPANAX ARBOREUM (Forst.) Seem. 241258 (4805) Araliaceae. Large evergreen shrub, with digitately divided leaves. Extremely handsome foliage plant. New Zealand. Cuttings from 3.

NOTHOPANAX DAVIDII (Franch.) Harms
239482 (3866) and 241250 (4813)
Evergreen shrub 4-8' tall; handsome.
China. Cuttings and plant from 3.

NOTHOPANAX LAETUS Cheesem.
239545 (3854) and 242251 (4785) Evergreen shrub, 6-8' tall with highly lustrous leaves. Handsome. New Zealand. Cuttings from 3.

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OBERONIA FALCIFOLIA Schltr. 242754 (5649) Orchidaceae. Epiphyte. Grown under L. Maurice Mason 11. New Guinea. Plants from 28.

OCHNA MULTIFLORA DC.

241909 (5134) Ochnaceae. Evergreen shrub. 5-6' tall; flowers bright yellow followed by the greenish fruit with protruding black seeds. Very attractive in flower and fruit. Sierra Leone. Seeds from 13.

OCOTEA FOETENS (Ait.) Benth. & Hook. 240440 (4004) Lauraceae. Evergreen tree, 50' tall. Fine avenue tree. Canary Islands. Cuttings from 17.

ODONTOPHORUS MARLOTHII N. E. Br. (4653) Aizoaceae. Cape Province, South Africa. Cuttings from 3.

ODONTOSPERMUM MARITIMUM Sch. Bip.
Compositae.
239068 (3799) Low tufted perennial to 12"
tall, spreading; ray flowers bright
yellow. Steep rocky slopes along the
Mediterranean Coast, 14 mi. east of
Malaga, along road N. 340, Prov. Malaga,
SPAIN. April 14, 1957. Cuttings.
241943 (5088) Same locality as P. I.
239068. Seeds. August 6, 1957. A showy
rock-garden plant.

OEONIELLA POLYSTACHYS (Thou.) Schltr. 242755 (5667), 242756 (5694), and 242757 (5706) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

OLEA CUNNINGHAMII Hook. f. 243106 (5926) Oleaceae. Evergreen tree. New Zealand. Cuttings from 74.

OLEA EUROPAEA L. 'SYLVATICA'
241920 (5098) Evergreen tree, 30' tall.
Differs from the common olive in the
larger more spreading habit and straight
bole; fruit not commercially valuable.
Arose as a chance seedling in Portugal.
Superior to the common olive as a shade
tree. Cuttings from 60.

OLEARIA SPP.
241926 (5110) Compositae. Much-branched
large evergreen shrub, 10-12' tall;
leaves lustrous green above, silvery
brownish below; flowers white. Handsome.
Cuttings from 61.

OLEARIA PINIFOLIA (Hook. f.) Benth.

242352 (5390) Evergreen shrub, 2-3' tall;
twigs silvery pubescent; leaves linear,
1-2" long, 1/4" wide, lustrous green
above, white-tomentose below, mucronate.
Tasmania. Neat evergreen. Cuttings from 1.
OLINIA CYMOSA Thunb.

240042 (3950) Oliniaceae. Tree, 20-30' tall; leaves evergreen; flowers white. Would make a good street tree. South Africa. Cuttings from 7.

ONONIS NATRIX L. (O. ramosissima)
241948 (5078) Leguminosae. Suffrutescent,
viscid sub-shrub, 1-3' tall much-branched;
flowers pea-shaped, yellow. Very floriferous over a long period. Open rocky
slopes, common along coast near Motril,

Prov. Granada, SPAIN. August 5, 1957. ornamental tree. Cuttings from 33. Seeds. ONONIS SPECIOSA Lag. 239069 (3800) Viscid shrub, to 8' tall, much-branched; leaves pinnately divided lustrous; flowers racemose, lemon yellow. Handsome. In deep canyons along road N. 340, 26 mi. west of Motril, along the Mediterranean coast, Prov. Malaga, SPAIN. April 14, 1957. Cuttings. OPHIOPOGON INTERMEDIUS D. Don (O. indicus) Liliaceae. 242402 (5423) Fibrous-rooted perennial, densely tufted; leaves grass-like, 8-10" long. Himalayas. Grown under Kingdon-Ward 16032. Plants from 1. 242403 (5428) Another collection, of unknown origin. Plants from 1. OPUNTIA ATACAMENSIS Phil. (4337) Cactaceae. Chile. Cuttings from 75. OPUNTIA BOLIVIANA Salm-Dyck (4338) Bolivia. Cuttings from OPUNTIA CYLINDRICA (Lam.) DC. 'MONSTROSA' (4340) Garden origin. Cuttings from 75. OPUNTIA MIQUELII Monville (4339) Chile. Cuttings from 75. OPUNTIA PENTLANDII Salm-Dyck (4338) Peru, Bolivia. Cuttings from 75. OPUNTIA STROBILIFORMIS Bgr. (4334) Argentina. Cuttings from 75. OPUNTIA SUBULATA (Muehlenpfordt) Engelm. 'MONSTROSA' (4342) Garden origin. Cuttings from 75. OPUNTIA TUNA (L.) Mill. 'MONSTROSA' (4341) Garden origin. Cuttings from 75. OREOPANAX XALAPENSE (H. B. K.) Decne. & ORCHIDACEAE (undetermined) Collected by L. Maurice Mason. Plants from 28. 242762 (5622) Epiphyte. New Guinea. 242763 (5626) Epiphyte. New Guinea. Grown OREOPANAX PELTATUM Linden under Mason 78.

242787 (5727) Terrestrial.

ORCHIDANTHA LONGIFLORA (Scort.) Ridl.

(Lowia longiflora) 242399 (5440) Musaceae. Rhizomatous perennial; leaves all basal, 3-4' long, spathulate, lustrous green. Stove-house. Malaya. Plant from 1.

OREOPANAX SPP.

Araliaceae.

239250 (3824) Evergreen tree to 25' tall with digitately divided leaves. Fine

241921 (5107) Large evergreen shrub, 10' tall; leaves shallowly lobed, scurfy tomentose. Cuttings from 37.

OREOPANAX CAPITATUS Decne. & Planch. (O. nymphaeifolius)

Small evergreen tree, 25' tall with widely spreading crown; leaves 6-8" long, deep green, lustrous. Reputably kills bees attempting to pollinate the flowers. Handsome. Mexico.

238955 (3787) Cuttings from 50. 241392 (4999) Cuttings from 23.

OREOPANAX DACTYLIFOLIUS Hort. (Aralia dactylifolia Mouill.) 240108 (3971) Evergreen tree to 30' tall; leaves deeply lobed, rusty brown beneath, green above, leathery. Very attractive foliage tree. Known only in gardens. Cuttings from 7.

OREOPANAX ECHINOPS Decne. & Planch. 239253 (3830) Small evergreen tree to 20' tall; leaves digitately 3-foliate, hairy. Handsome, does well in pots. Mexico. Cuttings from 33. 241152 (4865) Cuttings from 3.

OREOPANAX FLORIBUNDUM (H. B. K.) Decne. & Planch.

241084 (4641) and 241099 (4644) Large evergreen much-branched shrub to small tree, 8-30' tall; leaves waxy above, lighter beneath. Attractive foliage plant. Colombia. Cuttings from 27. 241252 (4786) Cuttings from 3.

241409 (5016) Cuttings from 26.

Planch. 239994 (3927) Large evergreen bush; leaves dull; flowers greenish, inconspicuous. Mexico. Cuttings from 7.

241153 (4866) Evergreen, glabrous, small

under Mason 78.

242764 (5627) Epiphyte. Madagascar.

242765 (5628) Epiphyte. New Guinea.

242767 (5651) Epiphyte. New Guinea.

242770 (5662) Epiphyte. New Guinea.

242772 (5666) Epiphyte. Madagascar.

242773 (5669) Epiphyte. Madagascar.

242774 (5675) Epiphyte. Madagascar.

242776 (5677) Epiphyte. Madagascar.

242777 (5679a) Epiphyte. Madagascar.

242777 (5679a) Epiphyte. Madagascar.

242777 (5679a) Epiphyte. Madagascar.

242778 (5702) Epiphyte. Madagascar.

242785 (5723) Epiphyte. Madagascar.

242787 (5727) Terrestrial.

241153 (4866) Evergreen, glabrous, small tree with digitately divided, leathery

1eaves. Mexico. Cuttings from 3.

ORNITHOGALUM ALGERIENSE Jord. & Fourr.

Liliaceae.

238792 (3765) 8-10" tall; flowers green white-striped. Algeria. Bulbs from 13.

ORNITHOGALUM UNIFOLIUM (L.) Ker.

238709 (3702) 4-6" tall; flowers white.

Soil pockets, on granite boulders, open situations near Oliveira do Hospital and Lagares, alt. 4200', PORTUGAL. March 27, 1957. Bulbs.

OROSTACHYS SPINOSUS (L.) Bgr. (Sedum spinosum)

OROSTACHYS SPINOSUS (L.) Bgr. (Sedum spinosum) (4318) Crassulaceae. Densely matted perennial; leaves in dense rosettes; flowers

yellow. E. Asia. Plants from 75.

OSMANTHUS SPP. Oleaceae.

238030 (3619) Evergreen shrub. Cuttings

239251 (3819) Large evergreen shrub, 12' tall; leaves 2-3" long, acuminate. Cuttings from 33.

OSMANTHUS ARMATUS Diels

242232 (5298) Large shrub or small tree 6-20' tall; leaves elliptic to ovate coarsely spine-margined; flowers white, fragrant. From an original E. H. Wilson introduction. China. Cuttings from 1.

OSMANTHUS DELAVAYI Baill.

242233 (5300) Large evergreen shrub 6' tall; leaves 3/4" long, lustrous green above; flowers white, spring. Very showy in flower, with excellent foliage. One of the best flowering broad-leaved evergreen shrubs. China. Cuttings from 1. 242288 (5344) Seeds from 1. 243272 (6009) Cuttings from 9.

OSMANTHUS × FORTUNEI Carr. (0. fragrans × 0. heterophyllus).

242236 (5303) and 243839 (6077) Evergreen shrub, 4-8' tall, much-branched; leaves 2-3" long, strongly spine-toothed, lustrous green above; flowers white, very fragrant. Fine broad-leaved evergreen. Garden origin. Cuttings from 14. 242888 (5806) Cuttings from 1.

OSMANTHUS FRAGRANS Thunb.

241393 (5011) Small evergreen tree, 20' tall. China. Cuttings from 23.

OSMANTHUS FRAGRANS Lour. 'AURANTIACUS'
239683 (3896) Evergreen shrub to 10' tall;
flowers yellow, fragrant. Garden origin.
Cuttings from 8.
242235 (5299) Cuttings from 1.

OSMANTHUS HETEROPHYLLUS (G. Don) P.S. Gr. (C. ilicifolius)

According to a recent monographic revision of Osmanthus, by P.S. Green in Notes from Roy. Bot. Gard., Edinburgh 22: n. 5 (1958), the name O. heterophyllus takes precedence as the oldest name applicable for this widely grown Japanese species. 242290 (5310) 'AUREO-VARIEGATUS' Leaves deeply toothed and spine-tipped, the margins yellowish green. Garden origin. Cuttings from 1.

242885 (5816) 'LATIFOLIUS VARIEGATUS'
Leaves with a broad whitish band, broader
than in 'Variegatus', and a better
cultivar. Garden origin. Cuttings from
14.

242237 (5295) 'MYRTIFOLIUS' Evergreen shrub; leaves entire, narrow-oval, 1-2" long. Garden origin. Cuttings from 1. 242291 (5311) 'PURPURASCENS' Leaves sometimes dentate, usually entire, the veins purplish. Garden origin. Cuttings from 1. 242238 (5301) 'ROTUNDIFOLIUS' Plant dwarfish; leaves oval to obovate, 1-1 1/2" long, margins undulate. Garden origin. Cuttings from 1.

242292 (5329) 'VARIGEATUS' Leaves variously blotched and suffused white. Garden origin. Cuttings from 1.

24884 (5815) Cuttings from 14.

OSMANTHUS SERRULATUS Rehd.

242239 (5304) Evergreen shrub to 15' tall;

leaves elliptic, regularly serrate, lustrous above. Forms a dense bush with fine foliage. Grown under Wilson 4216, from Western Szech'uan, alt. 4500 -5400', China. The species based upon this Wilson field number. One of the best. Should become better known in cultivation. Cuttings from 1. 242887 (5825) Cuttings from 14.

OSMANTHUS SUAVIS C. B. Clarke
242240 (5302) Evergreen shrub to 12' tall;
I'eaves lustrous, deep green; not the
finest of the cultivated Osmanthus but a
nice evergreen. Tenderer than most species
cultivated in northern areas. Himalayas.

Cuttings from 1.

242886 (5802) Cuttings from 14.

OSMANTHUS YUNNANENSIS (Franch.) P. S. Gr. (O. forrestii)
242234 (5296) Evergreen shrub to small tree, 6-20' tall; leaves elliptic, 3-5" long, strongly short-spiny, dull green above; flowers small, white, fragrant. Good foliage. China. Cuttings from 1. 242289 (5296) Cuttings from 1. 242883 (5814) Cuttings from 14.

×OSMAREA BURKWOODII Burk. & Skipw. (Osmanthus delavayi × Phillyrea decora)

242241 (5305) Oleaceae. Evergreen shrub,
8-10' tall, of spreading habit; leaves
1-2" long; flowers white. Origin at
Burkwood and Skipworth Nurseries, England.
Cuttings from 1.

OSTEOSPERMUM MONOLIFERUM L.

239377 (3883) Compositae. Much-branched shrubby bush, 2-4' tall; leaves green above, cobwebby beneath; rays yellow. South Africa. Plant from 3.

OSYRIS ALBA L.

241605 (5053) Santalaceae. Parasitic dioecious shrub 4-5' tall, on the roots of Quercus ilex; forms dense clumps; leaves 1-2" long; fruit bright red, about 1/2" wide. Very attractive in fruit. Open granitic slopes, environs of Toledo, Prov. Toledo, SPAIN. July 28, 1957. Seeds.

OXALIS BUPLEURIFOLIA A. St. Hil.
242353 (5367) Oxalidaceae. Perennial, 11 1/2' tall, the petioles flattened with
3 small leaflets at the tip; flowers small,
yellow. Interesting pot plant. Brazil.
Cuttings from 1.

#### P

PACHYCEREUS CALVUS Britt. & Rose (P. pringlei) (4702) Cactaceae. Lower California and Sonora. Cuttings from 3.

PACHYPHYTUM HOOKERI (S.D.) Bgr. 'CRISTATUM' (4388) Crassulaceae. Garden origin. Cuttings from 75.

PACHYPHYTUM LONGIFOLIUM Rose (4543) Mexico. Cuttings from 3. PACHYPHYTUM VIRIDE E. Walth.

(4389) Mexico. Cuttings from 75.

PACHYSTROMA LONGIFOLIUM (Nees) I.M. Johnst. Euphorbiaceae. Large evergreen shrub; leaves hollylike, 4-5" long, spiny. Handsome foliage. Brazil. 239928 (3911) Cuttings from 46. 240116 (3962) Cuttings from 7. 240343 (3996) Cuttings from 34. 241356 (4978) Cuttings from 57.

× PACHYVERIA CLAVIFOLIA (Bgr.) Jacob. (Echeveria × Pachyphytum) (4540) and (4562) Crassulaceae. Bigeneric

hybrid. Garden origin. Cuttings from 3.

× PACHYVERIA GLOSSOIDES Gosson

(4563a) Garden origin. Cuttings from 3.

× PACHYVERIA GUINONETTII

(4513) Garden origin. Cuttings from 3.

× PACHYVERIA PACHYPHYTOIDES 'MUELLERIANA' (4514) Garden origin. Cuttings from 3. Garden origin. Cuttings from 3.

PAEONIA LUSITANICA Mill.

238710 (3681) PAEONIACEAE. Perennial, 12-18" tall; flowers 3-4" across, red. Differs from P. officinalis in the pubescent leaves. Serra do Mogadouro, between Mogadouro and Castelo Braveo, PORTUGAL. March 24, 1957. Roots.

PAEONIA OFFICINALIS L.

239065 (3793) Perennial, 2' tall; flowers deep pink, 4" across. In Castanea sativa woods, in stony red soil, Sierra Aracena. about 12 mi. west of Aracena, road N. 433. Prov. Huelva, SPAIN. April 11, 1957. Plants.

241863 (5095) Another collection from same locality. August 7, 1957. Roots.

PALISOTA ALBERTII Gentil

242404 (5443) Commelinaceae. Robust rhizomatous perennial, 5-6' tall; leaves nearly all basal, spathulate, serrate, bright green. Attractive stove house plant. Habitat unknown. Plant from 1.

PALISOTA ELIZABETHAE Gentil 242405 (5436) Rhizomatous; leaves 12-14" long, spathulate, light green along midrib, darker green along margin. Fine foliage plant. Tropical Africa. Plant from 1.

PALISOTA MACLAUDII Cornu

242406 (5437) Rhizomatous; scapes 4' tall; leaves 8-10" long, elliptic, more or less whorled at the nodes; the petiole fimbriate hairy. Upper Guinea. Rhizomes from 1.

PANCRATIUM MARITIMUM L. 238742 (3716) Amaryllidaceae. Bulbs 2-5" in diameter; leaves appearing in spring; flowers pure white, fragrant. Summer. The native Portuguese form. Bulbs from 52. 242029 (5090) Sand dunes along the Mediterranean sea, 12 mi. east of Malaga, Prov. Malaga, SPAIN. August 6, 1957. Bulbs.

PANDANUS GRAMINIFOLIUS Kurz 240510 (4039) Pandanaceae. Much-branched evergreen shrub; leaves 1" wide, long

attenuate, the margins saw-toothed. Burma. Cuttings from 17.

PANDANUS HUMILIS Rumph.

240531 (4018) Small evergreen tree, muchbranched; leaves mostly at the top of the stems; fruit long pedunculate, about the size of a baseball. S.E. Asia. Cuttings from 17.

PARADISEA LILIASTRUM Bert. 239686 (3899) Liliaceae. Tuberous-rooted perennial; leaves all basal, tufted; flowers on scapes, white. Rock garden

plant. Edge of woodland in stony welldrained soil, above Lake Maggiore, near Pallanza, ITALY. May 6, 1957. Roots.

PARADISEA LUSITANICA (Cout.) Sampaio 238779 (3780) Perennial with fascicled tuberouslike roots; leaves basal, strapshaped; flowers white on scapes 3' tall. Much more robust than P. liliastrum and the habitat different. Moist meadows at edge of woods and along streams, Serra do Caramulo, alt. 2400', PORTUGAL. April 6, 1957. Plants.

PARASYRINGA SEMPERVIRENS (Franch.) W.W.Sm. Oleaceae. Evergreen shrub, 6-8' tall, spreading; leaves deep lustrous green; flowers white. The evergreen lilac. China. 239547 (3850) Cuttings from 3.

241304 (4870) Cuttings from 3. 243273 (6003) Cuttings from 9.

PASSIFLORA x ALLARDII (P. caerulea 'Constance Elliott' × P. quadrangularis) 243894 (6124) Passifloraceae. Flowers white shaded pink; corona white and dark purple. Garden origin. Cuttings from 47.

PASSIFLORA ANTIQUIENSIS Karst. 242354 (5384) Rank-growing perennial vine with tendrils; leaves 3-foliate; flowers

with a tube 2" long, the perianth watermelon pink. Extremely showy. Colombia.

Cuttings from 1.

PASSIFLORA × BELLOTTII Moore & Ayres 242355 (5373) (?P. caeruleo-racemosa x P. quadrangularis). Rampant climber; leaves deeply 3-lobed: flowers pink and blue: sepals light pink inside, green on back; fringed petals blue. Fragrant. Garden origin. Very fine. Cuttings from 1.

PASSIFLORA × CARDINALIS Masters 242356 (5383) Possible hybrid of P. alata X P. racemosa. Vigorous climber with strong tendrils; leaves broadly ovate, cordate; sepals red, green on back; petals red; sterile stamens white. Very showy. Garden origin. Cuttings from 1.

PASSIFLORA CORLACEA Juss. 241253 (4808) Vine; flowers greenish.

South America. Cuttings from 3. PASSIFLORA x 'JOHN INNES' (P. caerulea x P. quadrangularis) A fine hybrid. Awarded a First Class Certificate from the Royal Horticultural Society, London. Garden origin. Cuttings from 47.

PASSIFLORA MIXTA L. f.

243895 (6122) Vigorous climber; flowers tubular, 4-5" long, pink. Showy. Colombia. Cuttings from 47.

PASSIFLORA MOLLISSIMA (H.B.K.) Bailey 241944 (5154) Vigorous climber with deeply 3-lobed leaves; flowers red. Very handsome. Colombia. Plants from 30.

PASSIFLORA SUBEROSA L.

Rank growing vine; flowers greenish, 2" across; fruit black, 1/2" across. Dominica. 241254 (4807) Cuttings from 3. 243896 (6128) Seeds from 47.

PAULLINIA THALICTRIFOLIA Juss.

242357 (5354) Sapindaceae. Perennial, climbing by tendrils; leaves fermlike, twice-pinnate, bronze-tinted at the tips while young. An attractive climber. Tropical America. Cuttings from 42.

PAULOWNIA FORTUNEI (Seem.) Hemsl.
239684 (3893) Scrophulariaceae. Deciduous
tree to 40' tall; flowers larger than P.
imperialis, light lavender, spotted.
China. Cuttings from 8.

PELARGONIUM SPP.

(4158) Geraniaceae. Cuttings from 75.
241396 (4997) Flowers single, small, red,
1/2" across. Elegant. Cuttings from 23.
241397 (4998) Succulent-stemmed subshrub;
stems triangular; flowers white-striped
with red at the base of corolla lobes
inside. Cuttings from 23.
241398 (5002) Perennial to 2' tall; leaves
reniform; flowers single, salmon-pink.
Zonale type. Very floriferous and desirable. Cuttings from 23.

243987 (6134) Evergreen subshrub to 10' tall; leaves strongly aromatic; flowers red and white. Magnificant plant, attractive in tubs. From Ruenzori, tropical east Africa. Cuttings from 71.

PELARGONIUM ACETOSA Soland.

Much-branched perennial with woody stems and glaucous succulent leaves; flowers single, pink, the two lower petals redstriped. Fine ornamental species. South Africa. Introductions from 23. 241394 (5004) Seeds. 241395 (5004) Cuttings.

PELARGONIUM CARNOSUM Soland.

241864 (5033) Thick-stemmed perennial, the nodes much-swollen; leaves twice-pinnate; flowers small, white. South Africa. Seeds from 3.

PELAROGONIUM CAYLAE Humbert 241302 (4869) Erect perennial to 24" tall with succulent stems. Madagascar. Cuttings from 3.

from 3.
PELARGONIUM 'DOUBLE ROSE-FLOWERED'
242611 (5512) Flowers an inch across,
double, dark red, roselike. Garden origin.
Very pretty. Cuttings from 28.

PELARGONIUM ECHINATUM Curt.

(4157) Suffrutescent, 6-20" tall, with persistent spiny stipules; leaves heart-

shaped and somewhat lobed; flowers white with a deep red spot on upper petal or sometimes deep red-purple. South Africa. Cuttings from 75.

PELARGONIUM 'ENDSLEIGH'

243988 (6158) Cuttings from 14.

PELARGONIUM FERULACEUM Willd. 241865 (5032) Fleshy-stemmed perennial with dark green, twice-pinnatifid leaves; flowers small, lavender. South Africa.

Seeds from 3.

PELARGONIUM × FRAGRANS Willd. 243984 (6157) South Africa. Cuttings from

PELARGONIUM GLAUCUM L'Herit. 241422 (5025) and 241866 (5027) Muchbranched, somewhat decumbent perennial; leaves glaucous; flowers small, yellow. Cuttings from 3.

PELARGONIUM GLUTINOSUM L'Herit. 243985 (6161) Shrubby, to 3' tall; leaves 1-5" wide, palmately 5-lobed; flowers rose. South Africa. Cuttings from 14.

PELARGONIUM GRANITICUM R. Knuth

(4156) SW. Africa. Cuttings from 75.

PELARGONIUM 'HAPPY THOUGHT'

242610 (5527) Leaves with the middle portion white, the periphery green and more or less crispate-undulate. Grown for the very attractive foliage. Garden origin. Cuttings from 28.

PELARGONIUM 'KLONDIKE'

242358 (5361) Double red flowers of excellent quality that do not drop. Garden origin. Well-regarded cultivar. Cuttings from 42.

PELARGONIUM 'LADY PLYMOUTH'
243989 (6155) Garden origin. Cuttings
from 14.

PELARGONIUM PELTATUM (L.) Ait. 'PLENA'
241085 (4658) A lavender, double-flowered
form of the ivy-leaved type. Resembles
'Margot'. Very floriferous and desirable.
Garden origin. Cuttings from 27.

PELARGONIUM QUERCIFOLIUM (L.f.) L'Herit.

243986 (6156) Oak-leaved Geranium. Shrubby, the branches straggling; leaves peltate, 5-lobed. South Africa. Cuttings from 14.

PELARGONIUM RADULA L'Herit. 243990 (6160) Shrubby, about 3' tall, balsam-scented; flowers rose. South Africa. Cuttings from 14.

PELARGONIUM SALMONEUM R.A. Dyer
241154 (4860), 241303 (4860), and 241867
(5026) Flowers delicate pink, single.
Habit of P. zonale with the colored leaf
zonation; leaves green. Good potential
parent for breeding. South Africa.
Cuttings from 3.

PELARGONIUM SAXIFRAGOIDES N.E. Br. 242609 (5518) Weak, succulent-stemmed more or less trailing perennial; leaves deeply 4-5 dentate. Garden origin. Curiosity. Cuttings from 28.

PELARGONIUM TETRAGONUM (L.f.) L'Herit.
(4160) Succulent perennial with 3- or 4angled stems; flowers rose to purple.
Curious species. South Africa.

PELARGONIUM × VANDESIAE Sweet 243991 (6159) Garden hybrid, long known. Cuttings from 14.

PELARGONIUM XEROPHYTUM Schltr.

(4159) SW. Africa. Cuttings from 75.

PELARGONIUM ZONALE Ait. 'MILLIONAIRE! 240813 (4094) Extremely vigorous cultivar with inflorescence 6" across and flowers 1 1/2-2" in diameter, salmon-pink. Garden origin. Outstanding. Cuttings from 5.

PELLIONIA SPP. 'ARGENTEA'

241255 (4842) Urticaceae. Cuttings from 3.

PENIOCEREUS DIGUETII (Weber.) Backbg.

(4197) Cactaceae. Peru. Cuttings from 75.
PENTAPTERYGIUM RUGOSUM × P. SERPENS 'LUDGVAN'
Ericaceae. Evergreen somewhat scrambling
shrub, the branches drooping; leaves
lanceolate, 1-2" long, lustrous green
above; flowers 1" long, pendulous, brownish green-red. Garden origin. Handsome
and unusual. Baskets in cool house.
242359 (5381) Cuttings from 1.
243898 (6123) Cuttings from 47.

PENTAPTERYGIUM SERPENS (Wight) Klotzsch 242362 (5387) Evergreen shrub with hairy stems and drooping branches; leaves lanceolate, 1-2" long; flowers red and green, pendulous like small lanterns. Showy. Should have a summer night temperature below 60° F. Himalayas. Cuttings from 1.

PENTARHAPHIA CRANIOLARIA (Mart.) Decne. 240535 (4045) Gesneriaceae. Shrub 3-4' tall; flowers greenish yellow, black dotted. Dominican Republic. Cuttings from 17.

PENTAS LANCEOLATA (Forsk.) Schum. 242361 (5352) Flowers deep pink. Several named pink forms are known. Cuttings from 42.

PENTAS LANCEOLATA (Forsk.) Schum. 'ALBA'
242360 (5351) Perennial, 1-5' tall; flowers
white, in terminal clusters. Fine pot
plant. Tropical Africa, Arabia. Cuttings
from 42.

PEPEROMIA SPP.

241227 (4833) Piperaceae Cuttings from 3. 242537 (5612) Creeping, succulent perennial; leaves broadly ovate to nearly orbicular, short-hairy throughout. Collected by L. Maurice Mason. Madagascar. Cuttings from 28. 242538 (5613) Wiry-stemmed, creeping perennial; leaves obovate to nearly orbicular, succulent with 3 parallel veins. Collected by L. Maurice Mason. British Guiana. Cuttings from 28.

PEPEROMIA BRACHYTRICHA Bak.
242612 (5519) Epiphyte, 5-6" high, creeping and rooting at the nodes; leaves

obovate, succulent, 1-2" long, 3/4-1" wide. Madagascar. Collected by L. Maurice Mason. Cuttings from 28.

PEPEROMIA BREVIPES C. DC. (P. prostrata)
241155 (4838) and 241256 (4838) Prostrate,
with very slender stems; leaves 1/4 inch
long. Fine basket plant. Colombia. Cuttings from 3.

PEPEROMIA FENZELII Regel 240005 (3930) Erect perennial, 6" tall; leaves 1-2" long, thickish. Garden origin. Plants from 7.

PEPEROMIA INCANA A. Dietr.
240006 (3933) Mostly erect, tomentose,
succulent-stemmed perennial; leaves
broadly ovate to nearly oval. Brazil.
Cuttings from 7.

PEPEROMIA LYALLII C. DC.
242536 (5617) Creeping, succulent perennial; leaves broadly ovate to orbicular, glaucous above, lighter below, the veins of the young leaves reddish. Collected by L. Maurice Mason. Madagascar. Cuttings from 28.

PEPEROMIA MADAGASCARENSIS C. DC. 242613 (5525) Epiphytic creeping perennial; leaves fleshy, more or less orbicular, uniformly puberulent, green above, purplish red below. Madagascar. Collected by L. Maurice Mason. Cuttings from 28.

PEPEROMIA MARMORATA Hook. f. 241470 (5042) Leaves medium green above, uniformly light reddish beneath. Brazil. Cuttings from 18.

PEPEROMIA OBTUSIFOLIA A. Dietr. (P. clusiifolia)
241469 (5040) Succulent perennial with bronze-green metallic leaves. West Indies. Cuttings from 18.

PEPEROMIA PERESKIAEFOLIA H.B.K.
Sprawling, procumbent, square-stemmed
perennial; leaves rhombic, whorled, the
stems red, the veins prominent. Venezuela.
Colombia. Handsome and distinctive.
240007 (3932) Cuttings from 7.
240621 (4054) Cuttings from 22.

PEPEROMIA RESEDAEFLORA Linden & André
Perennial, 6" tall with succulent stems;
leaves metallic, green above, glistening
green below. Colombia.

240823 (4103) Cuttings from 5. 241257 (4827) Cuttings from 3.

PEPEROMIA ROTUNDIFOLIA Schlecht. & Cham. 242614 (5520) Epiphytic, creeping, somewhat succulent perennial; leaves 1/2-1" long, the juvenile more or less orbicular, becoming reniform at maturity. British Guiana. Collected by L. Maurice Mason. Cuttings from 28.

PEPEROMIA RUBELLA Hook. 240008 (3931) Rhizomatous perennial with reddish stems; leaves whorled. Handsome. South America. Cuttings from 7.

PEPEROMIA SCANDENS R. & P. 'VARIEGATA' 241471 (5041) Succulent-stemmed perennial;

leaves broadly ovate, white-variegated on the margins; stems trailing. Good basket plant. Peru. Cuttings from 18.

PEPEROMIA VELUTINA Linden & André 240622 (4055) Sprawly to semi-erect perennial; leaves dark green, velvety above, reddish beneath; stems reddish. Cuttings from 22.

PEPEROMIA VERTICILLATA A. Dietr.
238881 (3743) Succulent plant 8-10" tall
with whorled leaves. Jamaica. Cuttings
from 13.

PERESKIA CUBENSIS Britt. & Rose (4444) Cactaceae. Cuttings from 3.

PERIPLOCA GRAECA L.
240314 (3991) Asclepiadaceae. Large,
rampant climber, 50' long; leaves 1-2"
long, shiny; flowers purplish. S. Europe
to W. Asia. Cuttings from 7.

PERNETTYA MUCRONATA (L.f.) Gaud.
Ericaceae. Evergreen, much-branched shrub,
3' tall. South America (Magellan region).
Cuttings from 31.
243992 (6138) Pistillate. Fruit 3/4"

across, white. Comes true from seed. 243993 (6141) Staminate.

PHAEDRANTHUS BUCCINATORIUS (Mairet) Miers
238882 (3745) Bignoniaceae. Rank woody
climber 20-30' long; flowers 2-3" long,
trumped-shaped, orange-red. A good form.
Mexico. Cuttings from 13.
241399 (5000) Flowers very dark burgundyred. darker than most garden forms seen

red, darker than most garden forms seen on the Riviera. Cuttings from 23.

PHASEOLUS CARACALLA L.

241868 (5029) Leguminosae. Perennial climber with yellowish or purple flowers. Showy. India. Seeds from 26.

PHILLYREA DECORA Boiss. & Bal.
Oleaceae. Asia Minor. Cuttings from 14.
242890 (5809) Evergreen shrub, 10-15'
tall, much-branched, round-headed; leaves
4-6" long, 1-12" wide, mostly oblong,
leathery.

242891 (5824) Leaves narrower than in P.I. 242890, 3/4-1" wide.

PHILLYREA LATIFOLIA L.

242293 (5333) Evergreen shrub to 10' tall;
leaves ovate to elliptic, lustrous green
above, minutely serrate. S. Europe.
Cuttings from 1.

PHILODENDRON SPP.
241156 (4848) Araceae. Cuttings from 3.
PHILODENDRON LONGIPETIOLATUM Engl.

241157 (4864) French Guiana. Cuttings from 3.

PHLOMIS CRINITA Cav.

241844 (5074) Labiatae. Perennial to 3'
tall; leaves mostly basal, lanate, very
handsome; flowers yellow. Open rocky
slopes, common along the Granada-Vasares
de Veleta road to the Sierra Nevada Mts.,
alt. 3000', SPAIN. August 4, 1957. Seeds.
PHLOMIS FRUTICOSA L.

239334 (3826) Sprawling shrub 2-4' tall,

with white-woolly leaves; flowers yellow. Mediterranean. Fine floriferous shrub for mild dry climate. Cuttings from 55.

PHLOMIS HERBA-VENTI L.

241486 (5048) Perennial, 8-12" tall;
leaves white-pubescent beneath, green
above; flowers lavender to violet. Showy.
Along open rocky banks, 30 mi. north of
Guadalajara, Prov. Soria, SPAIN. July 25,

1957. Cuttings. 242040 (5071) Along stream bank, north of Granada on road to Jaen, SPAIN. August 2, 1957. Seeds.

PHOTINIA FLAVIDIFLORA W. W. Sm. 243316 (6023) Rosaceae. Evergreen shrub; leaves 8-12" long, elliptic to obovate. China. Cuttings from 9.

PHOTINIA GLOMERATA Rehd. & Wils. 242294 (5336) Evergreen shrub; leaves obovate, strongly undulate, spine-margined, lustrous above, pubescent below. China. Fine evergreen. Cuttings from 1.

PHOTINIA INTEGRIFOLIA Lindl.
242407 (5435) Evergreen shrub; leaves
elliptic to oblanceolate, acuminate,
lustrous green above. China. Cuttings
from 1.

PHOTINIA PRIONOPHYLLA (Fr.) Schneid.

Large evergreen shrub, 10' tall, muchbranched, dense; berries orange. China.

Introductions from 9.

243329 (6036) Cuttings.

244719 Seeds.

PHYGELIUS CAPENSIS E. Mey.
240800 (4092) Scrophulariaceae. Perennial
2-3' tall, much-branched; flowers brick
red, tubular, penstemonlike. Showy and
desirable. South Africa. Seeds and cuttings
from 5.

PHYLLAGATHIS ROTUNDIFOLIA B1.

242363 (5346) Melastomataceae. Perennial to
2' tall; leaves nearly oval, 6-8" across,
lustrous, green above and plaited, the
veins red and very prominent below. Fine
stove foliage plant. Sumatra. Cuttings
from 42.

PHYLLANTHUS ANGUSTIFOLIUS Sw. (Xylophylla angustifolia)

242364 (5407) Euphorbiaceae. Evergreen shrub; leaves elliptic 2-3" long, 1/2" wide; whole plant with fernlike appearance. Foliage plant. Jamaica. Cuttings from 1.

PHYMATIDIUM TILLANDSIOIDES Rodrig. 241410 (5015) Orchidaceae. Diminutive epiphyte, 2-3" tall; with grass-like leaves; flowers small, white, fragrant. Brazil. Plant from 26.

PHYTOLACCA ABYSSINICA Hoffm. 240801 (4095) Phytolaccaceae. Large shrub, 15-20' tall; flowers white. Ethiopia. Cuttings from 5.

PIARANTHUS
Asclepiadaceae. Succulent-stemmed perennial, erect or more or less prostrate;

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flowers deeply 5-lobed, structurally resembling Stapelia. South Africa.

PIARANTHUS DISPARILIS N.E. Br.

(4138) Cape Province, South Africa. Cuttings from 75.

PIARANTHUS RUSCHII Nel

(4139) SW. Africa. Cuttings from 75.

PICEA LIKIANGENSIS (Franch.) E. Pritz. 238031 (3609) Pinaceae. Small evergreen tree. Yunnan, China. Cuttings from 2.

PIERIS FORMOSA (Wall.) D. Don 243274 (6007) Ericaceae. Large evergreen shrub, 15' tall; flowers white. Grown under Forrest 27765. Yunnan, China. Cuttings from 9. 243317 (6035) Late flowering

after other forms of the species have finished. China. Cuttings from 9.

PIERIS FORRESTII Harrow

243330 (6038) Evergreen shrub, 10' tall, much-branched, the young leaves and twigs pink; flowers white. China. Cuttings from

PIERIS FORRESTII Harrow 'WAKEHURST' 243275 (5949) The new shoots deep crimson. The best form known, awarded a First Class Certificate from the Royal Horticultural Society, London. Garden selection. Cuttings from 11.

243994 (6139) Cuttings from 31. PIERIS JAPONICA (Thunb.) G. Don 'VARIEGATA' 242295 (5313) Evergreen shrub, densely branched; leaves white-margined. Handsome. Japan. Cuttings from 1.

243995 (6150) Cuttings from 31. PILEA NUMMULARIAEFOLIA Wedd.

240824 (4105) Urticaceae. Much-branched small creeping perennial. Jamaica. Cuttings from 5.

PILEA PUBESCENS Lieb.

240623 (4049) Perennial herb to 6" tall; leaves rugose, shiny green above; young growth reddish. Brazil. Cuttings from 22.

PILOCARPUS PENNATIFOLIUS Lem. 240117 (3961) Rutaceae. Small evergreen shrub; leaves pinnately divided, leathery, deep green, lustrous. Source of the drug "Jaborandi." Brazil. Cuttings from 7.

PILOSTEGIA VIBURNOIDES Hook. f. & Thoms. 242296 (5338) Hydrangeaceae. Evergreen climber; leaves elliptic, 4-6" long, 12" wide, lustrous green above.

Himalayas. Very handsome. Cuttings from 1. PINUS NIGRA Arn. 'PYRAMIDALIS'

238642 (3621) and 241974 (5157) Pinaceae. Dwarf, narrow pyramidal form. Garden origin. Cuttings from 35.

PINUS PINASTER Ait.

238711 (3692) Large evergreen forest tree, 50' tall. Foothills of Serra da Estrella, alt. 1500', near Covilha on road towards
Manteigas, PORTUGAL. Seedlings.
PINUS SYLVESTRIS L. 'VARIEGATA'

238032 (3613) Evergreen tree with the tips

of the leaves whitish. Garden origin. Cuttings from 2.

PIPER CELTIDIFOLIUM Ham. 240043 (3940) Piperaceae. Large, muchbranched evergreen shrub. West Indies. Cuttings from 7.

PIPER DECURRENS DC.

240498 (4035) Herbaceous perennial with square stems prominently ribbed and red-dish; leaves lustrous green above, red beneath, very handsome foliage plant. Colombia. Cuttings from 17.

PIPER KADZURA (Choisy) Ohwi 241158 (4859) Rampant evergreen climber. so. Japan. Hardy south. Cuttings from 3.

PIPER ORNATUM N.E. Br. 241607 (5049) Climber; leaves with a background of green, the veins carmine. Very handsome. Rare in cultivation.

Celebes. Cuttings from 12.

PIPTANTHUS FORRESTII Craib 242297 (5327) Leguminosae. Deciduous shrub; leaves ternate, deep green above, the new shoots silvery. Handsome. Grown under Forrest 19064. China. Cuttings from 1.

PIPTANTHUS LABURNIFOLIUS (D. Don) Stapf 242408 (5434) Large evergreen shrub, 10-15' tall; leaves trifoliate, deep green; flowers yellow. Attractive. Himalayas. Grown under Smythe 55. Cuttings from 1.

PITTOSPORUM SPP.

243276 (5959) Pittosporaceae. Evergreen shrub, 10' tall, much-branched, sprawly. Grown under Forrest 30720. Cuttings from 11.

PITTOSPORUM CORIACEUM Ait. 241358 (4980) Evergreen tree, 50' tall with spreading branches. Fine avenue tree. .Madeira. Cuttings from 57.

PITTOSPORUM HUTTONIANUM T. Kirk 241922 (5113) Small evergreen tree to 20' tall; leaves green above, whitish below. New Zealand. Cuttings from 37.

PITTOSPORUM VIRIDIFLORUM Sims 240044 (3953) Evergreen tree; leaves lustrous, deep green; flowers greenish yellow, fragrant. South Africa. Good avenue tree. Cuttings from 7.

PLATYCARYA STROBILACEA Sieb. & Zucc. 238033 Juglandaceae. Small deciduous tree; seed pods cone-like. Japan. Cuttings from

238045 (3599) Seeds of P.I. 238033.

? PLATYCLINIS

242769 (5656) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. New Guinea. Plant from 28.

PLATYTHYRA HAECKELIANA (Bgr.) N.E. Br. (4746) Aizoaceae. South Africa. Cuttings from 3. PLECTRANTHUS CILIATUS E. Mey.

239685 (3889) Labiatae. Herbaceous

scrambling perennial with green leaves above and purple beneath. South Africa. Hanging basket. Cuttings from 8.

PLECTRANTHUS PROSTRATUS Guerke

(4439) Stems creeping; flowers violet. Mozambique. Cuttings from 3.

PLEIOSPILOS

Aizoaceae. Dwarf succulents closely related to <u>Mesembryanthemum</u>; leaves very thick and fleshy, united at the base, dull green, often with darker dots; flowers usually yellow. The plants often stonelike in appearance. Cape Province, South Africa.

PLEIOSPILOS BOREALIS L. Bolus (4585) Cuttings from 3.

PLEIOSPILOS BREVISEPALUS L. Bolus (4593) Cuttings from 3.

PLEIOSPILOS CLAVATUS L. Bolus (4279) Cuttings from 75.

PLEIOSPILOS CLAVATUS var. COMPACTUS (4277) Cuttings from 75.

PLEIOSPILOS HERREI L. Bolus

(4375) Cape Province, South Africa. Cuttings from 75.

PLEIOSPILOS KINGIAE L. Bolus (4628) Cuttings from 3.

PLEIOSPILOS LATIFOLIUS L. Bolus (4594) Cape Province, South Africa. Cuttings from 3.

PLEIOSPILOS PEERSII L. Bolus (4580) Cuttings from 3.

PLEIOSPILOS PRISMATICUS Schwant. (4281) Cuttings from 75.

PLEIOSPILOS SORORIUS Schwant.

(4272) Cuttings from 75.

PLEIOSTACHYA SPP.

242409 (5441) Marantaceae. Rhizomatous; 4-5' tall; culms hairy; leaves 8-10" long, reddish. Handsome foliage plant for stove house. Plant from 1.

PODALYRIA CANESCENS E. Mey.

242365 (5411) Leguminosae. Evergreen shrub 4-6' tall; leaves obovate; mucronate, glaucous above, canescent below. South Africa. Cuttings from 1.

PODOCARPUS MANNII Hook. f.

238956 (3790) and 241869 (5092) Taxaceae. Evergreen tree. Island of São Thomé. Cuttings from 50.

PODOCARPUS NERIIFOLIA D. Don 'VARIEGATUS'
241923 (5108) Small evergreen tree, 20'
tall; leaves white-margined. Garden
origin. Described by Prof. Franco from
plants in the Park da Pena. Cuttings from
37.

PODRANEA BRYCEI (N.E. Br.) Sprague 241028 (4107) and 241385 (4988) Bignoniaceae. Vigorous scrambling vine; flowers pink, September. Rhodesia. Cuttings from 5.

PODRANEA RICASOLIANA (Tanfani) Sprag.
241335 (4961) Vigorous deciduous climber
with pink striped-red flowers. September.
South Africa. Handsome. Plants from 58.

PODRANEA RICASOLIANA (Tanfani) Sprag. COMTESSE ZARA

240742 (4071) Flowers soft rose. Originated at Sgaravatti Nurseries, Saonara - Padua, Italy about 1937. Cuttings from 40.

POLYGALA MICROPHYLLA L.

238712 (3705) Polygalaceae. Low, spreading perennial 6-8" tall, forming a rosette; flowers indigo blue, very showy. Rock garden. Open sunny slopes with <a href="Erica scoparia">Erica scoparia</a> and <a href="Ulex">Ulex</a>, near Luso, along the Rio Criz, road N. 234 near Mealhada, PORTUGAL.

March 27, 1957. Plants.
243878 (6048) Near the Rio Veiva, northern

243878 (6048) Near the Rio Veiva, northern Portugal. In pure sand along the river. Seeds communicated by 32.

POLYGALA NICAENSIS Risso

239370 (3842) Tufted perennial, the branches spreading, decumbent; flowers axure blue. Rock garden plant. Open rocky south-facing mountain slopes, alkaline soil, Col de Braus, alt. 3000'; 20 mi. from Menton, Alpes-Maritime, FRANCE. April 28, 1957. Plants.

241336 (4953) Seeds from same locality.

POLYGONUM EPHEDRIOIDES Hook. f.

239546 (3859) Polygonaceae. Low arching evergreen bush, 2' tall; stems green and naked, resembling <u>Ephedra</u>. New Zealand. Cuttings from 3.

POLYSTACHYA CULTRIFORMIS Lindl. 242758 (5673) and 242759 (5700) Orchidaceae. Epiphyte. Collected by L. Maurice Mason. Madagascar. Plants from 28.

POPULUS TREMULA L. 'PENDULA'
238034 (3610) Salicaceae. Small deciduous
tree 5' tall; branches pendulous. Best
used grafted on standard. Garden origin.
Cuttings from 2.

PORTULACARIA AFRA Jacq. 'VARIEGATA'

(4770) Portulacaceae. Garden origin.

Small deciduous tree to 10' tall, somewhat succulent-stemmed; flowers rose. Cuttings from 3.

POTENTILLA FRUTICOSA L.

Rosaceae. Shrub, extremely variable in habit, with two main vegetative types, either with the branches widely spreading or ascending; leaves vary from green to silvery pubescent; flowers extremely variable, from pure white to deep yellow, and from 1/4-1" in diameter. This species occurs throughout the boreal regions of the Northern Hemisphere. It is well-adapted to northern gardens and many fine cultivars are grown, the best of which have come from Chinese types.

242207' (5256) Much-branched, spreading shrub, 3-4' tall, dense-headed; leaves silvery gray below, lighter above; flowers deep yellow, about 1/2-3/4" wide. Cuttings from 1.

242208 (5259) Shrub to 3' tall, more or less open, sprawly; flowers 1 1/2" in diameter. Cuttings from 1.

242212 (5272) Much-branched shrub, 3' tall, dense round-headed; leaves green; flowers deep yellow, 1-1 1/4" across. Grown under Forrest 363. China. Cuttings from 1. 242213 (5263) Upright shrub, much-branched, not spreading, 2-4' tall; flowers white. Grown under Yu 7912. Yunnan, China. Cuttings from 1. 242214 (5261) Erect shrub, 4-5' tall, not spreading; leaves bright green; flowers bright yellow, 1/2-1" across. Grown under Yu 10956. Yunnan, China. Cuttings from 1. 242218 (5275) Upright shrub, 3-4' tall; leaves green; flowers white. Cuttings from 242242 (5297) Shrub 18-24" tall, muchbranched, round-headed; leaves green; flowers white. Cuttings from 1. 242243 (5283) Much-branched shrub, 2-3' tall, dense round-headed; leaves green; flowers deep yellow, 3/4-1" across. Grown under Forrest 10519. China. Cuttings from 1. 242244 (5281) Low shrub, 18-24" tall with spreading branches; leaves green; flowers deep yellow, 1" across. Grown under Yu 10657. China. Cuttings from 1. 242245 (5284) Erect shrub, the branches mostly ascending, 3-4' tall; leaves green, the stipules well-developed; flowers yellow, 3/4" across. Grown under Yu 14549. China. Cuttings from 1. 242209 (5269) 'ARBUSCULA' Much-branched shrub, 2-3' tall, densely branched, forming a round-headed bush; flowers 1-1 1/4" across, lemon yellow. Cuttings from 1. 242210 (5266) 'ARGENTEA NANA' Shrub, 18-24" tall, much-branched, dense roundheaded; leaves silvery gray; flowers yellow, 1" across. Garden origin. Cuttings from 1. 242211 (5258) 'BEESII' Shrub 2-2 1/2" tall, densely branched, round-headed; leaves silvery gray. Cuttings from 1. 244654 Plants from 80. 242893 (5810) 'BOWLES' Shrub 30" tall; leaves 1/2-3/4" long; flowers 1" across, deep yellow. Garden origin. Cuttings from var. 'FARRERI' Besant Much-branched, round-headed shrub, 2-3! tall; leaves green; flowers deep yellow, China. 242215 (5257) Cuttings from 1. 242216 (5268) Flowers larger than in 5257. Cuttings from 1. 242217 (5264) var. FORRESTII Densely branched, round-headed, 2-3' tall; leaves green; flowers 1-1 1/4" across. Very fine type. Yunnan, China. Cuttings from 1. 242219 (5265) 'GRANDIFLORA' Much-branched, coarse-stemmed shrub, 2-3' tall; stipules brown, well-developed, branches reclining; flowers 1 1/2" across. Cuttings from 1. 242220 (5271) var. MANDSCHURICA Maxim. Shrub, much-branched, 3-4' tall, roundheaded; leaves silvery gray; flowers

white. Manchuria. Cuttings from 1. 242298 (5340) 'OCHROLEUCA' Much-branched, erect shrub, 30" tall; leaves green; flowers creamy yellow. Garden origin. Cuttings 242221 (5270) and 242222 (5273) var. RIGIDA (Wall.) Wolf. Mostly upright, sparsely branched, 2-3' tall; leaves green; flowers deep yellow, 3/4 - 1" across. Himalayas. Cuttings from 1. 242246 (5282) var. VEITCHII (Wils.) Bean. Erect shrub, the branches mostly ascending, 3-4' tall; leaves green; flowers white, 1-14" across. Western China. Cuttings from 1. 242223 (5276) var. VIIMORINIANA Komar. Erect open-headed shrub, 3-4' tall; foliage silvery gray; flowers creamy yellow, 1/2-1" across. Striking and very floriferous. Allegedly the best of the white-flowered kinds. China. Cuttings from 1.

POTHOS SCANDENS L.

242366 (5415) Araceae. Rampant scrambler, rooting at the nodes, the petioles flattened and leaf-like, the leaf blade ovate to elliptic. Malaya. This form may represent only the juvenile foliage. A fine plant for baskets or wall. E. India. Cuttings from 1.

PRIONIUM PALMITA E. Mey.

240315 (3993) Juncaceae. Arborescent rush with stems 4-5" in diameter; leaves stiff and pineapple-like, tufted at the tope 15-20" long; flowers Juncus-like. A curious subaquatic. Used in basketry and for thatching. South Africa. Seeds from 7.

PRUNUS ARMENIACA L. (type) 238643 (3628) Rosaceae. Wild Apricot. Small deciduous tree; flowers pinkish white; fruit of good quality, size of walnut. An introduction originally from Ar-

menia. Scions for grafting from 35.

PRUNUS CERASIFERA Ehrh.

238035 (3594) Myrobalan Plum. Small deciduous tree; flowers white. W. Asia. Cuttings from 2.

PRUNUS CERASIFERA Ehrh. 'ATROPURPUREA' 241400 (5008) Leaves very dark purple-red in midsummer. Fine form. Cuttings from 23.

PRUNUS LAUROCERASUS 'KITAEBELII' 242867 (5769) Low evergreen shrub, old plants seldom more than 2' tall, spreading; leaves 2-4" long, 3/4-1" wide, narrowly

elliptic, acuminate. Garden origin. Cuttings from 36.

PRUNUS LUSITANICA L. var. AZORICA Nichols. 243107 (5940) Evergreen; stems red; leaves larger, thicker, and more coarsely serrate than the type. Azores. Cuttings from 74.

PRUNUS MUME Sieb. & Zucc. 'ALPHANDII' 238036 (3622) Small deciduous tree; flowers double, pink. Garden origin. Grafting wood from 35.

PRUNUS PROSTRATA Labill.

241945 (5081) Forms a dense mat and creeps so as to follow the contours of the adjacent rocks or the plants sometimes erect, densely branched. Barranco Moreno above Competa, Prov. Malaga, SPAIN. August 5, 1957. Seeds.

242041 (5073) Leaves 1/4 - 1/2" long; fruit small 1/4" across, red turning black. With the aspect of a prostrate cotoneaster. Should be tried north, possibly hardy; along the Granada-Vasares de Veleta road to the Sierra Nevada Mts., alt. 3000'. SPAIN. August 1, 1957. Seeds.

PRUNUS SUBHIRTELIA Miq. 'PENDULA' 238037 (3600) Higan Cherry. Small deciduous tree with pendulous branches; flowers single, pink. Japan. Grafting wood from 2.

PSEUDOESPOSTOA MELANOSTELE var. INERMIS Backbg.

(4292) Cactaceae. Peru. Plants from 75.

PSEUDOLOBIVIA KERMESINA Krainz

(4663) Cactaceae. Argentina. Cuttings

PSEUDOPANAX CRASSIFOLIUM C. Koch 241259 (4800) Araliaceae. Evergreen, strong growing shrub to small tree; leaves extremely variable, from entire to digitately 3-to 5-parted. A fine foliage plant. New Zealand. Cuttings from 3.

PSILOCAULON SPP.

(4670a) Aizoaceae. Desert succulent. South Africa. Cuttings from 3.

PTEROCELTIS TATARINOWII Maxim. 237830 (3586) and 242024 (5167) Ulmaceae. Small deciduous tree, 20-25' tall. N. China, Mongolia. Cuttings from 10.

PTEROSPERMUM SUBERIFOLIUM Lam. 240595 (4025) Sterculiaceae. Evergreen rusty tomentose tree; leaves sinuately cut, more or less oblique. East Indies. Cuttings from 17.

PUTORIA CALABRICA (L.) Pers.

241949 (5079) Rubiaceae. Prostrate, suffrutescent subshrub, creeping over rocks; flowers white, tubular, fragrant; fruit berrylike, juicy, small, red. Good rockgarden plant for arid regions. Barranco Moreno, near Competa, alt. 900', Prov. Malaga, SPAIN. August 5, 1957. Seeds.

PYGMAEOLOBIVIA CONOIDEA

(4315a) Cactaceae. Cuttings from 75.

PYGMAEOLOBIVIA PILIFERA Fric

(4314) Mexico. Cuttings from 75.

× PYRACOMELES VIIMORINII Rehd. ex Guillaum. 237921 (3585) and 242025 (5168) Rosaceae. Low bush about 3' tall. A bigeneric hybrid of Osteomeles subrotunda x Pyracantha crenato-serrata. Garden origin. Cuttings from 10.

PYRROSIA LINGUA (Thunb.) Farwell 'CORYMBIFERUS' 240502 (4036) Polypodiaceae. Rhizomatous, long-creeping; fronds simple, 6-8" long, 1-2" wide, light green above, white cottony to rusty beneath, the tips much divided and crested. A cool house fern. Handsome. Japan. Plants from 17.

# Q

QUERCUS ALNIFOLIA Poech

242930 (5833) Fagaceae. Small evergreen tree; leaves broadly ovate to nearly orbicular, serrate-dentate, 2-3" long, deep lustrous green above, rusty tomentose beneath. Handsome. Cyprus. Cuttings from 67.

QUERCUS HISPANICA var. DENTATA (Wats.) Rehd. (Q. lucombeana var. fulhamensis) 243215 (5828) Deciduous tree, 50' tall; leaves mostly oblong, regularly serratedentate, 3-4" long; cupule bristly, the acorns deep brown, oblong, 12" long, Fine round-headed oak. Acorns from 14.

QUERCUS PYRENAICA Willd.

238713 (3686) Small deciduous tree on open heather-covered mountain slopes, alt. 3000', Serra do Marão between São Goncalo and Vila Real, PORTUGAL. March 23, 1957.

QUILLAJA BRASILIENSIS (St. Hil. & Tul.) Mart. 242042 (5101) Rosaceae. Tree, 30' tall; flowers white, fragrant. Brazil. Seeds from 63.

### R

REBUTIA Cactaceae.

South American cacti, mostly of low habit. Plants solitary or in clumps, round, ribless; flowers red or orange. Several of the species are very showy and are ideal for pot culture, since they flower when quite young.

REBUTIA BERYLLIOIDES

(4321) Plants from 75.

REBUTIA CALLIANTHA Bewerunge (4490) Plants from 3.

REBUTIA KRAINZIANA Kesselring

(4488) Bolivia. Cuttings from 3.

RETUTIA MARSONERI Werd. Argentina.

(4313) Cuttings from 75. (4487) Cuttings from 3.

REBUTIA OCULATA Werd.

(4486) N. Argentina. Cuttings from 3.

REBUTIA SAROTHROIDES Werd.

(4485) Argentina. Cuttings from 3.

REBUTIA SENILIS Backbg. 'KESSELRINGIANA'

(4260) Cuttings from 75. (4489) Cuttings from 3.

REBUTIA SENILIS Backbg. 'VIOLACIFLORA' (4315) Cuttings from 75.

REBUTIA WESSNERIANA Bewerunge

(4322) and (4484) Plants from 3.

REEVESIA SPP. Sterculiaceae.

243277 (5961) Evergreen, much-branched tree, 30' tall; flowers white. Cuttings from 11.

REEVESTA PUBESCENS Mast.

242434 (5473) Large evergreen shrub, 8-10' tall; leaves elliptic, 2-3" long; flowers white. China. Cuttings from 1.

REHDERODENDRON MACROCARPUM Hu

243278 (5967) Styracaceae. Deciduous small tree, 25' tall; leaves with reddish petioles; flowers small, white; fine foliage. Central China. Cuttings from 11.

REICHEOCACTUS PSEUDOREICHEANUS Backbg. (4257) Cactaceae. Cuttings from 75.

RESTIO SUBVERTICILLATUS Masters 242410 (5444) Restionaceae. Stout rhizomatous perennial, forming dense clumps; culms 5-6' tall, bright green with reddish papery bracts at the nodes; foliage lax; inflorescence wandlike; plant of unusual aspect, the fine deep green thread-like foliage is attractive. Deserves to be better known. South Africa. Plants from 1. RHAGODIA NUTANS R. Br.

241472 (5045) Chenopodiaceae. Prostrate, creeping perennial, the stems somewhat suffrutescent; fruit orange with exposed black seeds. Interesting showy fruit; reported to be a fine forage and very drought resistent plant in South Australia where it is native. Seeds from 44.

RHAMNUS ALATERNUS L.

Rhamnaceae. Evergreen shrub, 4-6' tall; leaves 1-2" long; fruit berrylike, juicy, black; makes a dense plant suitable for hedges. Mediterranean. 237831 (3582) Cuttings from 51. 241910 (5132) Pine woods along the Rio

Mondego, 3 mi. east of Coimbra, PORTUGAL. August 13, 1957. Seeds. RHODODENDRON SPP. (Javanese hybrid) 242917 (5827) Ericeceae. Close to R.

javanicum itself but probably a hybrid. Cuttings from 14.

RHODODENDRON ALBESCENS X R. CILIICALYX 242435 (5452) Extremely floriferous; flowers white to pinkish. Tender. Cuttings from 1.

RHODODENDRON ARAIOPHYLLUM Balf. & W. W. Sm. 242436 (5454) Evergreen shrub to 16' tall; flowers white, flushed rose or lavender, with a basal crimson blotch and crimson dots. Grown under Farrer 811. First class species. China. Cuttings from 1.

RHODODENDRON ARBOREUM J. E. Sm.

Small tree 20' tall. Himalayas. Cuttings from 1.

242437 (5461) Grown under Cooper 3593. Flowers red.

242438 (5476) Wallich form. Allegedly a plant grown from Nathaniel Wallich seed sent to England about 1840. Flowers blood

RHODODENDRON ARGYROPHYLLUM var. NANKINGENSE 242439 (5494) Evergreen shrub, 4-6' tall; leaves elliptic, 4-5" long, 1 1/2" wide, lustrous green above, silvery tomentose

below; flowers red. China. Introduction from the type plant of variety. Cuttings from 1.

RHODODENDRON ASSAMICUM X R. BURMANICUM 242441 (5485) Leaves 2-3" long; flowers 2-3" across, white, spotted red. Tender. Garden origin. Cuttings from 1.

RHODODENDRON BULLATUM (3) x R. 'LADY ALICE FITZWILLIAM' (2)

243318 (6039) Erect evergreen shrub, 4' tall; flowers white to pink, 3" across, fragrant. Tender. Cuttings from 45. RHODODENDRON BUREAVII Franch.

242440 (5496) Evergreen shrub to 6' tall; leaves densely rusty tomentose beneath, deep green above; flowers red. Extremely fine foliage. Grown under Forrest 15809.

RHODODENDRON CARNEUM Hutch.

242442 (5448) Flowers dark pink. (Maddenii Series). Tender. Upper Burma. Cuttings from 1.

RHODODENDRON CHRYSEUM Balf. & Ward 242444 (5498) Evergreen shrub, 1-2' tall; leaves 1/2-1" long; flowers yellow, 2" across. Grown under Rock 4b. NW. Yunnan, China, alt. 14000'. Cuttings from 1.

RHODODENDRON CHRYSODORON Tagg 'GOLDEN GIFT' 242443 (5453) Flowers yellow, red-spotted. Tender. Grown under Forrest 25448 from hills east of Wei-Hsi, NW. Yunnan. China. alt. 10000'. Cuttings from 1.

RHODODENDRON CILIICALYX Franch. (Maddenii Series)

242445 (5456) Evergreen shrub to 10' tall; flowers pure white, tinged with pink, fragrant. First class species. Tender. Grown under Forrest 6764. China. Cuttings from 1.

RHODODENDRON × 'CLARINDA' 243996 (6174) Javanese hybrid. Greenhouse rhododendron. For best flowering grow potbound. Cuttings from 14.

RHODODENDRON CONCATENANS Hutch.

242446 (5501) Evergreen shrub, 3-4' tall; leaves broadly ovate, glaucous above, white below; flowers red. Grown under Kingdon-Ward 5874. Fine form. W. China. Cuttings from 1.

RHODODENDRON CRASSUM Franch.

(Maddenii Series) Evergreen shrub, 8-10' tall; leaves oblanceolate or elliptic, 4-7" long, lustrous above, glaucous and brown punctate below; flowers 2-3" across, white, fragrant. Cuttings from 1. 242411 (5432) Grown under Yu 21031. China.

242447 (5447) The last form of the species to flower at Edinburgh (September). Typically this species flowers in spring. 242448 (5480) The best from at Edinburgh. April flowering.

242449 (5504) Grown under Yu 21031. Hardy at Edinburgh.

RHODODENDRON CUBITTII Hutch.

242450 (5488) Evergreen shrub, 6-8' tall;

flowers rose. Tender. Upper Burma. Cuttings from 1.

RHODODENDRON DALHOUSIAE Hook. f. 242451 (5483) (Maddenii Series). Rather sprawly evergreen shrub, 8-10' tall; flowers 3-3 1/2" across, white, fragrant. Tender. Himalayas. Cuttings from 1.

RHODODENDRON DELAVAYI Franch. (Typical form) 242452 (5462) The Chinese R. arboreum.

China. Cuttings from 1.

RHODODENDRON DIAPREPES Balf. & W. W. Sm. 242453 (5474) Large shrub to small tree, 20' tall; flowers white, 3-4" across. Blooms in September at Edinburgh. Very fine. Tender. China. Cuttings from 1.

RHODODENDRON EDGWORTHII Hook. f. 242454 (5502) (Maddenii Series). Evergreen shrub, 2-4' tall, somewhat sprawly; leaves lustrous-green above, brownish woolly-tomentose beneath; flowers white, fragrant, 2-3" across. Tender. Himalayas. Cuttings from 1.

RHODODENDRON EXIMIUM Nutt.

242455 (5446) Large-leaved sort, related to R. falconeri. Form with extremely rufous leaves. Bhutan. Cuttings from 1.

RHODODENDRON FACETUM Balf. & Ward
Large evergreen shrub, 15' tall; leaves
6-7" long; flowers coral red, 2-3" long,
3" wide, bell-shaped. Tender. A magnificant very variable species, flowering in
late summer. Upper Burma. Cuttings from 1.
242456 (5464) Grown under Forrest 27105
and 27468.

242457 (5449) Grown under Forrest 13508, from Tali Range, alt. 10,000', Yunnan, China.

242458 (5465) Grown under <u>Kingdon-Ward</u> 0051.

242459 (5467) Grown under Farrer 1444. 242460 (5471) Another plant.

RHODODENDRON FERRUGINEUM L.

241337 (4939) Evergreen shrub, 3-4' tall; flowers deep pink to rose-purple. North slopes, alt. 6000', above Turini, Alpes-Maritime, FRANCE. July 7, 1957. Seeds.

RHODODENDRON GRIERSONIANUM Balf. & Forr.
242461 (5477) Large evergreen shrub, 15'
tall; flowers orange-vermilion; one of the
most striking species. Tender. Grown
under Forrest 15815, Yunnan, China.
Cuttings from 1.

RHODODENDRON GRIFFITHIANUM Wight 'ROSEUM'
242462 (5470) Large evergreen shrub, 15'
tall; flowers 3-4" long, 4-5" wide, pinktinged; floriferous and elegant. Himalayas. Cuttings from 1.

RHODODENDRON HARDINGII Forr.

242463 (5450) Reputably a first rate

species. Tender. Yunnan, China. Cuttings from 1.

RHODODENDRON HODGSONII Hook. f. 242299 (5314) and 242464 (5506) Evergreen shrub to small tree, 10-25' tall; leaves 10-12" long, 3-4" wide, leathery with a metallic sheen; flowers purplish crimson. A magnificant species. Himalayas. Cuttings from 1.

RHODODENDRON INSIGNE Hemsl. & Wils. 242465 (5505) Evergreen shrub, 4-7' tall; leaves elliptic, 4-6" long, 2-3" wide, lustrous green above, silvery below; flowers red. China. Cuttings from 1.

RHODODENDRON ITEOPHYLLUM Hutch.
242466 (5469) Small-leaved shrub, 3-4'
tall; flowers white 2-3" across. Assam.
cuttings from 1.

242467 (5472) Another form with longer leaves than in P. I. 242466. Cuttings from 1.

RHODODENDRON JASMINIFLORUM Hook. 242915 (5826) Evergreen shrub, 2-3' tall; flowers white, bell-shaped. Tender. One of the parents of the Javanese hybrids. Malaya. Cuttings from 14.

RHODODENDRON JOHNSTONEANUM Watt
242468 (5460) Evergreen shrub to 6' tall;
leaves 2-4" long, 1 1/2" wide; flowers 2"
across, white to yellow spotted, fragrant;
very showy. Tender. Manipur. Cuttings from
1.

RHODODENDRON × 'LADY ALICE FITZWILLIAM'
243319 (6041) (Maddenii hybrid). Erect
evergreen shrub, 4-5' tall of rather compact habit; flowers white, fragrant.
Tender. Cuttings from 45.

RHODODENDRON LINDLEYI T. Moore (Maddenii Series)
242469 (5457) Evergreen shrub, often

epiphytic in the wild; leaves 2-6" long; flowers white, fragrant, 3 1/2" long. Himalayas. Grown under <u>Kingdon-Ward</u> 8546. Cuttings from 1.

RHODODENDRON LOCHAE F. Muell.

242470 (5466) Evergreen shrub to 20' tall, often epiphytic in the wild; leaves
2-3" long, leathery, glossy green above; flowers few in a truss, 1-2" across, scarlet. Showy but tender. The only known Australian rhododendron from 5000' alt. in Queensland. Cuttings from 1.

RHODODENDRON LUKIAGENSE Franch. (Irroratum Series)

242471 (5463) Evergreen shrub. China. Cuttings from 1.

RHODODENDRON MACABEANUM Watt
242300 (5323) Large evergreen shrub;
leaves 8-10" long, dark green, white
tomentose below; flowers creamy yellow to
yellow. Grown under Kingdon-Ward 7724.
Fine form. Manipur. Cuttings from 1.

RHODODENDRON MADDENII Hook. f. (Maddenii Series)

242472 (5481) Evergreen shrub, 6-8' tall; flowers pure white, 3-3 1/2" across, fragrant. Tender. Himalayas. Cuttings from 1.

RHODODENDRON MANIPURENSE Balf. & Watt 242473 (5484) (Maddenii Series). Evergreen shrub, 6-8' tall; flowers white-spotted, tinged pink. very fine. Tender. Manipur. Grown under Kingdon-Ward 8400. Cuttings from 1.

RHODODENDRON MEGACALYX Balf. & Ward (Maddenii Series) 242474 (5475) Evergreen shrub; flowers 4-5" long, 2" across, pure white, strongly fragrant; very fine. Upper Burma. Tender.
Cuttings from 1.
RHODODENDRON MOUPINENSE Franch.

242475 (5479) Evergreen shrub, 6' tall; leaves 1-12" long, lustrous above; flowers white, tinged pink, 2-3" long. Tender. Western China. Cuttings from 1.

RHODODENDRON NUTTALLII × R. VEITCHIANUM (Maddenii Series) 242476 (5455) Evergreen shrub; flowers white, 4-5" long, very fine. Garden origin. Cuttings from 1.

RHODODENDRON OLDHAMII Maxim. 242477 (5487) Evergreen shrub, 3-4' tall; leaves 1-2" long, brownish hairy; flowers orange red. Formosa. Cuttings from 1.

RHODODENDRON × 'PINK DELIGHT' 242916 (5829) Javanese hybrid. Evergreen, 4-5' tall; leaves 2-4" long, oblong; flowers clear pink in a loose truss. Tender. Garden origin. Cuttings from 14.

RHODODENDRON PONTICUM L. 238715 (3704) Large evergreen shrub to 10' tall. Along the Rio Merugo 5 mi. east of São João da Madira on road N. 227 20 mi. south of Oporto, PORTUGAL. Probably introduced. March 27, 1957. Cuttings. 238780 (3782) Along a stream, Serra do Caramulo, alt. 900', near Vouzela, PORTUGAL. April 6, 1957. Cuttings.

RHODODENDRON × 'PRINCESS ALEXANDRIA' (R. jasminiflorum X R. 'Princess Royal')
243997 (6173) Flowers white. Cuttings from 14. (cf. Hortus Veitchii by James H. Veitch, 1906, for history of the Javanese hybrid rhododendrons).

RHODODENDRON 'RED PRINCE' 243998 (6171) Javanese hybrid. Cuttings from 14.

RHODODENDRON RETUSUM Benn. 242918 5828) Evergreen shrub, 2-3' tall; flowers red. Java Sumatra. Tender. Cuttings

RHODODENDRON SCABRUM Don 242478 (5458) Evergreen shrub, 3-6' tall; flowers red. Tender. Very fine. Liukiu Islands. Cuttings from 1.

RHODODENDRON SINONUTTALLII Balf. f. & Forr. (Maddenii Series) 242479 (5468) Sprawly large shrub, 10-15' tall; flowers white, 5-6" long. Tender. Yunnan, China. Grown under Kingdon-Ward 9466. Cuttings from 1. 244000 (6132) Evergreen shrub, 4-5' tall; flowers white, trumpet-shaped, 3-4" long, fragrant. In England this form has flowered in 3 years from seed. Introduced by Ludlow & Sherrif from Tibet. Seedlings from 71.

RHODODENDRON SUPRANUBIUM Hutch. 242480 (5451) (Maddenii Series). Evergreen shrub. Elegant plant. Tender. China. Cuttings from 1.

RHODODENDRON TAGGIANUM Hutch. 242482 (5482) Flowers 31" across, white. Grown under Forrest 25865, alt. 9-1000, NW. Yunnan, China. Tender. First rate species. Cuttings from 1.

RHODODENDRON × 'TAYLORI' (R. brookeanum R. × 'Princess Alexandra') 243999 (6172) A third generation Javanese hybrid with pink flowers. Tender. Cuttings from 14.

RHODODENDRON THOMSONII Hook. f. 242481 (5503) Evergreen shrub or small tree, 10-20' tall; leaves broadly ovate to suborbicular, 3-4" long, leathery, lustrous above, silvery below; flowers bright coral red. Spectacular in flower. Himalayas. Cuttings from 1.

RHODODENDRON VALENTINIANUM Forr. 242483 (5495) (Maddenii Series). Low evergreen shrub, 2-3' tall; leaves obovate, slightly serrate-ciliate; flowers white, borne in great profusion fragrant. Tender Grown under Rock 22302. Yunnan, China. Cuttings from 1.

RHODODENDRON VIETCHIANUM Hook. 242484 (5486) (Maddenii Series). Shrub to small tree; leaves 2-3" long; flowers pink, 2-3" across. Tender. Burma. Cuttings from 1.

RHODODENDRON X VICTORIANUM (R. dalhousiae × nuttallii 242485 (5478) Maddenii Series. Evergreen shrub 10' tall; flowers white, fragrant, 4" long. Tender. Garden origin. Cuttings from 1.

RHODODENDRON ZEYLANICUM Loud. 242486 (5459) Large shrub, 20' tall; flowers blood-red. Tender. Ceylon. Cuttings from 1.

RHUS UNDULATA Jacq. 240118 (3970) Anacardiaceae. Evergreen tree to 20' tall, with divided leaves. South Africa. Cuttings from 7.

RHYTIDOPHYLLUM TOMENTOSUM (L.) Mart. 240620 (4047) Gesneriaceae. Shrubby, 3-5' tall; leaves 5-9" long; flowers greenish yellow. West Indies. Cuttings from 22.

RIBES LAURIFOLIUM Jancz. Saxifragaceae. 242301 (5320) (pistillate) Evergreen shrub, unarmed; leaves elliptic to ovate, the veins strongly impressed above; flowers greenish white. China. Grown under Wilson 817. Cuttings from 1.

RIBES SANGUINEUM Pursh 'ALBIDUM' 238038 (3620) Flowers white, pink tinged. Garden origin. Cuttings from 35.

RICHEA SCOPARIA Hook. f. 242302 (5309) Epacridaceae. Low spreading evergreen shrub, 2-3' tall; leaves spirally arranged, narrowly linear-acuminate, sharply spine-tipped, deep green. Tasmania. Cuttings from 1.

ROBINIA × HOLDTII Beissn.

237832 (3580) Leguminosae. Small deciduous tree. Carden origin. Cutting from 10.

ROCHEA ANGUSTIFOLIA

(4532) Crassulaceae. Cuttings from 3.

ROCHEA HYBRID

(4250) Cuttings from 75.

RODGERSIA AESCULIFOLIA Batal. 242931 (5845) Saxifragaceae. Robust rhizomatous perennial; petioles 4' long. Fine woodland plant. Rhizomes from 67.

ROGIERA ELEGANS Planch.

240045 (3942) Rubiaceae. Small tree; leaves 3-4" ling, 2" wide; Guatemala.

Cuttings from 7.

ROMULEA BULBOCODIUM (L.) Sebast. & Mauri 238508 (3665) Iridaceae. Leaves grasslike, 4-5" long; flowers lavender, scapose. Material originally from Prov. Villa de Conde, PORTUGAL. Bulbs from 24.

RONDELETIA AMOENA (Planch.) Hemsl.

240380 (3978) Rubiaceae. Large evergreen shrub; flowers pink and white, fragrant Mexico. Cuttings from 7.

RONDELETIA ODORATA Jacq.

242367 (5398) Evergreen shrub 8-10' tall; leaves broadly ovate, obtuse, deep green above; flowers red-orange, showy and desirable. Cuba, Mexico. Cuttings from 1. ROSA 'BALLERINA'

244844 Rosaceae. (Floribunda). Flowers an inch across, deep to light pink Plants from 77.

ROSA × 'BELLE OF PORTUGAL' (R. odorata var. gigantea x Tea Rose 241911 (5129) Climber; flowers blush pink, in spring. Cuttings from 13. ROSA 'OPHELLA' (true)

241029 (4091) A tea-rose hybrid of much use as a seed parent for breeding greenhouse roses. Bush 5-6' tall with pink flowers. Garden origin. Seeds from 41.

ROSA STELLATA var. MIRIFICA (Greene) Cockerell 242224 (5262) Shrub with arching branches, the prickles white, the canes coarsely scabrous; flowers deep pink, 1-12" across. Unusual. New Mexico. Cuttings from 1.

ROSA XANTHINA forma NORMALIS Rehd. & Wils. 242225 (5254) Large deciduous shrub, 6-8' tall with arching branches; leaves pinnately divided, the spines and canes red; leaf rachis red; flowers 2" in diameter, lemon-yellow; fruit blackviolet; a very fine shrub rose. Grown under Hers 2716. China. Cuttings from 1. 242226 (5255) Seeds of P. I. 242225.

ROSACEAE (undetermined)

242892 (5813) Large evergreen shrub; leaves obovate, 2-3" long, mucronate, finely serrate; petioles and twigs reddish. Cuttings from 14.

ROSMARINUS OFFICINALIS L.

238714 (3701) Labiatae. Suffruticose perennial to 3' tall; flowers pale lavender. Planted for hedges along

roadside near Oliveira do Hospital and Lagares, alt. 1400', PORTUGAL. March 27. 1957. Cuttings.

ROSMARINUS OFFICINALIS L. 'ALBIFLORUS' 242996 (5895) Evergreen shrub; flowers white. Garden origin. Cuttings from 68.

ROSMARINUS OFFICINALIS 'CORSICA'

241338 (4963) Semi-erect evergreen shrub with pendulous branches; flowers very dark blue. Corsica. Cuttings from 58.

ROSMARINUS OFFICINALIS L. 'JESSUP'S UPRIGHT' 244001 (6129) Evergreen shrub, 3-4' tall; branches all ascending. Fastigiate from of the species; an excellent hedge plant. Garden origin. Cuttings from 71.

ROSMARINUS OFFICINALIS L. 'PROSTRATUS'. 240802 (4100) Evergreen narrow-leaved prostrate shrub. Excellent for walls. Mediterranean. Cuttings from 5. 241097 (4643) Cuttings from 27.

ROYENA LUCIDA L.

239933 (3912) Ebenaceae. Large evergreen shrub; leaves 1-2" long, ovate; flowers yellowish to white. South Africa. Cuttings from 46.

RUBIA SIKKIMENSIS Kurz

242368 (5372) Rubiaceae. Evergreen lax-stemmed perennial; leaves verticillate. 1-2" long. Interesting foliage plant for a basket, with the appearance of a giant bed-straw. Himalayas. Cool house. Cuttings from 1.

RUBUS MOLUCANUS L.

242369 (5402) Rosaceae. Scrambling vine, essentially spineless; juvenile leaves variously dentate or lobed, velvet green above, sometimes darker along the midvein; mature leaves nearly oval-cordate. The juvenile plant very decorative. 500-600 F. suits it best. Malaya. Cuttings from 1.

RUBUS TRICOLOR Focke

243279 (5972) Scrambling evergreen vine; leaves ovate-cordate, somewhat lobed, lustrous green above, glaucous below; fruit crimson; very handsome foliage. China. Cuttings from 9.

RUELLIA CILIATIFLORA Hook.

242043 (5099) Perennial 2-21 tall; leaves lustrous above; flowers dark purple. Showy. Argentina. Seeds from 63.

RUELLIA MACRANTHA Mart.

242615 (5526) Robust perennial, 4-6' tall: leaves 3-5" long, green above, covered with calcium oxalate crystals below; flowers fuschia pink, 2-3" long, and as wide as the tip of the petals. Flowers handsome but the plant leggy. Brazil. Cuttings from 28.

RUELLIA SQUARROSA (Fenzl) Cuf. 241870 (5036) Acanthaceae. Rhizomatous perennial, 6-8" tall, pubescent; flowers blue. Good bedding plant with the aspect of Achimenes. Known only in gardens. Seeds from 26.

RUSCHIA CORALLINUM
(4777) Aizoaceae. South Africa. Cuttings

RUSCHIA MAXIMA (Haw.) L. Bolus

(4187) South Africa. Cuttings from 75.

RUSCUS ACULEATUS L. 'ANGUSTIFOLIUS'
238218 (3630) Liliaceae. Butcher's
Broom. The cladodes narrower than in
the typical form of the species. France.
Plants from 35.

RUTA GRAVEOLENS L. 'JACKMAN'
Rutaceae. Rue. Low evergreen shrub,
12" tall with dark blue foliage. A very
outstanding blue-leaved form Garden
origin.
242539 (5607) Cuttings from 28.
244002 (6131) Cuttings from 71.

5

SAINTPAULIA GROTEI Engl.
242370 (5368) Gesneriaceae. Rhizomatous
perennial; leaves 6-8" long, long-petiolate, the blade nearly oval, serrate-dentate, dull green above; flowers blue. East
Tropical Africa. Cuttings from 1.

SALIX BOCKII Seem. (pistillate)
242247 (5277) Salicaceae. Deciduous shrub,
3-4' tall; leaves 1/2-1" long, elliptic,
shiny above, dull beneath; catkins appearing with the leaves in autumn. North
China. Cuttings from 1.

SALIX BOYDII E. F. Linton
242248 (5289) Dwarf erect shrub, 3-4' tall;
leaves 1/2-1" long, nearly oval, lustrous
green above, whitish below. Scotland.
Found only once in the wild. Cuttings from
1.

SALIX CAPREA L. 'PENDULA'
242487 (5489) Kilmarnook Willow. Large
deciduous shrub or tree; leaves elliptic
wavy-margined, the branches pendulous.
Should be grafted on a standard for best
results. Garden origin. Cuttings from 1.
244026 Cuttings from 79.

SALIX FARGESII Burkill
242488 (5493) Deciduous shrub, 4-5' tall;
leaves 4-6" long, 2-3" wide, thickish,
serrate, the veins prominent. The reddish
buds and twigs showy. China. Cuttings
from 1.

SALIX × GRAHAMII Borrer (S. herbacea × S. phylicifolia). Deciduous shrub, more or less decumbent, 1-3' tall; leaves ovate, 1½" long, lustrous green above.

Natural hybrid. Scotland. Cuttings from 14.

SALIX LANATA L.

Deciduous shrub 2½-3' tall; leaves
elliptic to broadly ovate, strongly veined
above. Dwarf willow suitable for rock
garden. Mountains of Europe. Cuttings
from 1.

242249 (5278) Pistillate. 242250 (5279) Staminate.

SALIX LAPPONUM var. STUARTIANUM (S. lanata var. stuartii)

242251(5287) Deciduous shrub, 24-30" tall, the branches spreading; leaves broadly ovate. N. Europe. Cuttings from 1.

SALIX MOUPINENSIS Franch.
242412 (5438) Deciduous shrub; leaves
elliptic, serrate, shiny green above, dull
below. The shiny red buds striking. China.
Cuttings from 1.

SALIX REPENS L. (pistillate)
242252 (5288) Deciduous shrub, 24" tall,
much-branched; leaves 1/2-3/4" long, green
above, silvery beneath. Alpine. Europe,
N. Asia. Cuttings from 1.

SALIX RETICULATA L.

Prostrate creeping shrub, much-branched;
leaves broadly ovate to nearly oval,
strongly reticulate-veined above and below,
lustrous green above. N. Europe to Asia.
Cuttings from 1.
242253 (5285) Sex unknown.
242254 (5293) Pistillate.

SALMEA SCANDENS (L.) DC. 240077 (3959) Compositae. Scrambling twining vine, evergreen; flowers all discoid. West Indies. Cuttings from 7.

SALVIA CANDELABRUM Boiss.
241946 (5080) Labiatae. Coarse perennial
to 4' tall, much-branched; flowers longpedicellate, blue and white. Aromatic.
Open rocky slopes near edge of olive
grove, road from Competa to Barranco
Morena, Prov. Malaga, SPAIN. August 5,
1957. Seeds.

SALVIA COCCINEA Jacq.
241159 (4861) Rhizomatous perennial;
flowers scarlet. Showy. Mexico. Cuttings
from 3.

SALVIA LEONUROIDES Gloxin
240046 (3941) Shrub to 4' tall, muchbranched; foliage aromatic; flowers red.
Peru. Cuttings from 7.

SAMBUCUS NIGRA L. ALBO-VARIEGATA'
242540 (5583) Caprifoliaceae. Deciduous
shrub, 6-8' tall; leaves streaked white.
Handsome foliage giving the suggestion of
a shrub in full flower. Garden origin.
Cuttings from 28.

SAMBUCUS RACEMOSA L. 'LACINIATA'
242303 (5332) Deciduous shrub with weak
pendulous branches; leaves finely dissected and divided, with a fernlike aspect. Very effective when grafted on a
standard. Garden origin. Cuttings from 1.

SANSEVIERIA METALLICA Gerome & Labroy 242679 (5603) Liliaceae. Stout, rhizomatous perennial; leaves 3' long, very stiff and undulate on the margin; inflorescence more or less capitate, the scapes a foot tall; flowers long tubular, 3-4" long, white. Garden origin. Handsome in flower. Received an Award of Merit, Royal Horti-

cultural Society, London. Plants from 28. SAPINDUS MARGINATUS Willd.

240647 (3974) Sapindaceae. Tree, 40' tall. Seeds from 7.

SARCOCOCCA CONFUSA Sealy 242895 (5803) Buxaceae.

242895 (5803) Buxaceae. Evergreen low shrub, 2-3' tall; leaves 1-2" long, acuminate, 3/4-1" wide, lustrous green above. Forming a dense thicket or bush. Cuttings from 14.

SARCOCOCCA CONFUSA Sealy (Palmer's form) 243108 (5937) Evergreen shrub, 2-3' tall. Cuttings from 74.

SARCOCOCCA HOOKERIANA var. DIGYNA Franch.
237833 (3583) Evergreen shrub, 4' tall,
dense, much-branched. Yunnan, China. Cuttings from 10.
243840 (6082) Cuttings from 14.

SARCOCOCCA HOOKERIANA var. HUMILIS Rehd. & Wils. (Palmer's form)

243109 (5927) China. Cuttings from 74.

SARCOCOCCA RUSCIFOLIA Stapf

239359 (3828) Evergreen shrub to 5' tall; leaves dark lustrous green, 1-2" long; flowers small, whitish, inconspicuous; fruit currantlike, dark shiny red, fleshy; excellent broad-leaved evergreen. China. Cuttings from 33.

239378 (3828) Seeds from 33.

SARCOCOCCA RUSCIFOLIA var. CHINENSIS (Franch.)
Rehd. & Wils.
242896 (5804) Evergreen shrub, the branches
mostly ascending, 2-3' tall; leaves ovate,
acuminate, 1½-2" long, lustrous above.
China. Cuttings from 14.

SARCOCOCCA SALIGNA (D.Don) Muell. Arg. 239335 (3827) Evergreen shrub to 4' tall, with lanceolate-oblong, acuminate leaves. Himalaya. Cuttings from 33.

SARCOSTEMMA SPP.

(4631) Asclepiadaceae. Cuttings from 3.

SARGENTODOXA CUNEATA (Oliv.) Rehd. & Wils.
242413 (5421) Sargentodoxaceae. Deciduous twining woody vine, 25' or more long;
leaves trifoliate; flowers male or female, bell-shaped, greenish yellow. E. and Cent. China. Very rare in cultivation. Cuttings from 1.

SAROTHAMNUS INGRAMII

242304 (5316) Leguminosae. Large shrub, 15' tall; leaves 1/2" long, ovate; flowers yellow. Northern Spain. Cuttings from 1.

SAROTHAMNUS WELWITSCHII Boiss. & Reut. (Cytisus)

242629 (5161) Much-branched, green-stemmed shrub to 8' tall; flowers yellow; pods white-villous. Open dry rocky granitic slopes. Guarda, PORTUGAL. August 18, 1957. Seeds.

SAURAUJA NAPAULENSIS DC.

242414 (5431) Dilleniaceae. Evergreen tree 20' tall, much-branched; leaves oblanceo-late or elliptic, 6-8" long, 3-4" wide, serrate; flowers pink with a red eye. Fast

growing. Grown under Forrest 25084, Upper Burma, Alt. 6-7000'. Cuttings from 1.

SAURAUJA PUNDUANA Wall. 239483 (3864) Evergreen tree, 30' tall;

leaves 1' long and 6" wide; flowers small, in clusters, pink. Handsome. Himalayas. Cuttings from 3.

SAURAUJA SERRATA DC.

240765 (4080) Small evergreen tree; leaves 8-10" long, serrate, green above, tomentose beneath. Mexico. Cuttings from 20.

SAXIFRAGA LINGULATA var. LANTOSCANA Boiss.
239360 (3845) Saxifragaceae. Densely tufted rhizomatous perennial, forming a rosette; flowers white. Cliffs and rock ledges along the River Vésubie, at Le Suquet, 3 mi. from Lantosque, the type locality of the variety, Alpes-Maritime, FRANCE. April 28, 1957. Plants.

SCABIOSA CRETICA L.

240316 (3994) Dipsacaceae. Shrub to 3' tall tall, much-branched; flowers blue. Seeds from 7.

240381 (3987) Rock cliffs above Borghetto near Portinico, 12 mi. SW. Palermo, SICILY. May 19, 1957. Showy. Cuttings and seeds.

241871 (5037) Seeds from 23.

SCHEFFLERA SPP. (Heptapleurum)

241239 (4794) Araliaceae. Cuttings from 3.

SCHEFFLERA DELAVAYI (Franch.) Harms
239379 (3852) and 241260 (4787) Large
shrub to small tree, 20' tall; leaves digitately divided, tomentose. China. Cuttings
from 3.

SCHEFFLERA DIGITATA Forst.
240682 (4065) Evergreen shrub with digitately divided leaves. New Zealand. Cuttings from 6.

SCHEFFLERA HORSFIELDII Harms
240683 (4062) Evergreen shrub; leaves
digitately divided. Java. Cuttings from 6.

SCHEFFLERA VENULOSA (Wight & Arn.) Harms
238883 (3753) Large, evergreen shrub,
with handsome lustrous leaves. India. Cuttings from 13.

SCHISANDRA GRANDIFLORA (Wall.) Hook. f. 242932 (5835) Schizandraceae. Scrambling evergreen climber; leaves oblong, 4-6" long, acuminate, finely serrate, lustrous green above; petioles pinkish. Himalayas. Cuttings from 67.

SCHIZOCAPSA PLANTAGINEA Hance
242933 (5832) Taccaceae. Acaulescent perennial; leaves 6-8" long, resembling those
of Plantago major; flowers from the base
in a loose umbel. Canton, China. Seeds
from 14.

SCHIZOSTYLIS COCCINEA Backh. & Harv.
Iridaceae. Iris-like, about 3' tall; flowers scattered on the scape, sessile in a spathe, opening flat. South Africa. September-October. Corms from 76.
244938 'LADY BYNG'

Flowers pink. 244939 'MRS. HEGARTY Flowers salmon-pink.

SCHWANTESIA TRIEBNERI L. Bolus

(4175) Aizoaceae. South Africa. Cuttings from 75.

SCIADOPHYLLUM SPP.

240540 (4042) Araliaceae. Small evergreen tree with digitately compound leaves, lustrous above. Cuttings from 17.

SCILLA ITALICA L.

239361 (3844) Flowers light blue. Woods under Ostrya carpinifolia, Col St. Jean, alt. 3000', above Menton, Alpes-Maritime, FRANCE. April 28, 1957. Bulbs.

SCILLA HISPANICA Mill.

238781 (3754) 6-8" tall; flowers blue, occasionally white. Rock crevices in pockets of humus. Serra do Sico, alt. 1200', near Ramalhaes, east of Pombal which is on the main Lisbon road south of Coimbra, PORTUGAL. April 5, 1957. Bulbs.

SCILLA LILIO-HYACINTHUS Koch

238039 (3638) Liliaceae. Leaves 6-8" long, an inch wide; flowers azure blue, scapose; sandy soil, along a rivulet in pine woods between Irun and San Sebastian, Prov. Guipuzcoa, SPAIN. March 14, 1957. Bulbs.

SCILLA MONOPHYLLA Link

238716 (3674) Bulbs with single basal leaf; scapes 4-5" tall; flowers light blue. Well-drained pine-clad slopes in granitic soil, dry in summer, Serra de Marão, between São Goncaio and Vila Real, PORTUGAL. March 22, 1957. Bulbs.

SCILLA PAUCIFOLIA Bak.

241160 (4846) Leaves pale green and spotted; flowers greenish. Nice foliage. South Africa. Bulbs from 3.

SCILLA SOCIALIS Bak. 'GLESNEVIUS' 241261 (4822) Bulbs from 3.

SCILLA VIOLACEA Hutch.

241161 (4812) South Africa. Bulbs from 3. SCINDAPSIS HEDERACEUS Schott

242372 (5370) Araceae. Evergreen climber with aerial roots; leaves 8-10" long, 1-3" wide, green above, glaucous below; stems more or less flattened and angled. Malaya. Cuttings from 1.

SCIRPUS CERNUUS Vahl

241980 (5150) Cyperaceae. Densely tufted perennial with threadlike drooping leaves. Europe. Plants from 30.

SCIRPUS INUNDATUS Poir.

243881 Plants from 72.

SCIRPUS TABERNAEMONTANI L. 'ZEBRINUS'
243882 Culms transversely banded with
white and green; very handsome. Garden
origin. Aquatic. Japan. Plants from 72.

SCROPHULARIA NODOSA L. 'VARIEGATA'
242415 (5422) Scrophulariaceae. Perennial
2-3' tall; leaves ovate, serrate-dentate
with whitish margins. Showy foliage plant
for perennial border. Garden origin. Cuttings from 1.
244027 Plants from 79.

SEDUM SPP.

238509 (3668) Crassulaceae. Cuttings from 24.

240382 (3988) On limestone walls of Greek amphitheater at Segesta, near Calatalfini, SICILY. May 19, 1957. Plants.

SEDUM BELLUM Rose

Perennial with mealy, glaucous stems, 3-6" long; flowers white. Mexico.

(4357) Cuttings from 75. (4735) Cuttings from 3.

SEDUM CHONTALENSE Alexander

(4725) Oaxaca, Mexico. Cuttings from 3.

SEDUM COMPACTUM Rose

Mat-forming perennial; flowers white, elder-scented. Mexico.

(4358) Cuttings from 75. (4706) Cuttings from 3.

SEDUM COMPRESSUM Rose

(4734) Flowers orange. Mexico. Cuttings from 3.

SEDUM GRISEUM Praeg.

Subshrub to about a foot tall, of compact growth, glaucous. Mexico. (4359) Cuttings from 75.

(4727) Cuttings from 3.

SEDUM HUMIFUSUM Rose

(4360) Mat-forming perennial; leaves fleshy, ciliate; flowers yellow. Cuttings from 75.

SEDUM LANCEROTTENSE R. P. Murray

(4736) Straggling perennial; leaves somewhat glaucous, very small; flowers greenish yellow. Canary Islands. Cuttings from 3.

SEDUM MELANANTHERUM DC.

(4723) and (4773) Spain, N. Africa. Cuttings from 3.

SEDUM MORGANIANUM F. Walth.

(4370) Stems drooping by the weight of the many, fleshy glaucous leaves. An extremely handsome species. Mexico. Cuttings from 75.

SEDUM NUSSBAUMERIANUM Bitter

(4769) Mexico. Cuttings from 3.

SEDUM OAXACANUM Rose

(4728) Prostrate, much-branched perennial, about 6" long; flowers yellow. Oaxaca, Mexico. Cuttings from 3.

SEDUM PRAEALTUM DC. 'CRISTATUM'

(4766) Shrubby perennial, 1-2" tall, with cristate branches. Garden origin. Cuttings from 3.

SEDUM PURPUSII Rose

(4771) Mexico. Cuttings from 3.

SEDUM REFLEXUM × S. RUBRUM

(4726) Garden origin. Cuttings from 3.

SEDUM RUBROTINCTUM R. T. Clausen

(4733) Mexico. Cuttings from 3.

SEDUM WRIGHTII A. Gray

(4724) and (4772) Texas. Cuttings from 3.

SELAGINELLA BIFORMIS A. Br.

243846 (6112) Selaginellaceae. Rhizomatous creeper. Propagate by layering. China. Cuttings from 14.

SELAGINELLA COMMUTATA v. A. & v. R. 243847 (6108) Erect, 5-6" tall; fibrous-rooted. Propagate by stem cuttings. Malaya. Cuttings from 14.

SELAGINELLA ERYTHROPUS (Mart.) Spring. 243849 (6109) Rhizomatous creeper. Propagate by layering. West Indies. Cuttings from 14.

SELAGINELLA HAEMATODES (Kunze) Spring. 243850 (6105) Rhizomatous creeper; Propagate by layering. Panama to Bolivia. Cuttings from 14.

SELAGINELLA MARTENSII Spring.
243851 (6113) Fibrous-rooted; erect. Propagate by stem cuttings. Cent. America.

Cuttings from 14.

SELAGINEILA MARTENSII f. ALBO-LINEATA (Moore)
Alston
243860 (6104) Fibrous-rooted; erect. Propagate by stem cuttings. Garden origin.
Cuttings from 14.

SELAGINELIA MICRODENDRON Bak. (S. millspaughii) 243852 (6101) Rhizomatous creeper. Propagate by layering. Yucatan. Cuttings from

14.

SELAGINELLA MYOSURUS (Sw.) Alston 243853 (6100) Rhizomatous creeper. Propagate by layering. Ghana. Cuttings from 14.

SELAGINELLA PALLESCENS f. AUREA (J. Hill)
Alston
2/38/8 (6111) Phigomatous greener Proj

243848 (6111) Rhizomatous creeper. Propagate by layering. Brazil. Cuttings from 14.

SELAGINELLA PLANA (Desv.) Hieron. 243854 (6103) Fibrous-rooted; erect. Propagate by stem cuttings. Java. Cuttings from 14.

SELAGINELLA PULCHERRIMA Liebm.
243855 (6107) Rhizomatous creeper. Propagate by layering. Mexico. Cuttings from 14.

SELAGINELLA 'STANSFIELDII'
243856 (6110) Fibrous-rooted; erect. Propagate by stem cuttings. Garden origin.
Cuttings from 14.

SELAGINELLA UMBROSA Heiron. 243857 (6099) Rhizomatou

243857 (6099) Rhizomatous creeper. Propagate by layering. Tropical America. Cuttings from 14.

SELAGINELLA UNCINATA (Desv.) Spring.
242373 (5395) Much-branched creeper;
leaves greenish iridescent; highly atractive when grown under high humidity in subdued light. China. Cuttings from 1.

SELAGINELLA VERSICOLOR Spring.
243858 (6098) Rhizomatous creeper. Propagate by layering. Ghana. Cuttings from 14.

SELAGINELLA WALLICHII (Hook. & Grev.) Spring. 243859 (6102) Rhizomatous creeper. Propagate by layering. Burma. Cuttings from 14.

SEMPERVIVELLA ALBA Stapf (4259) and (4390) Crassulaceae. Forming rosettes 1-2" across; leaves fleshy, flat, tinged rose or red; flowers white. Himalayas. Cuttings from 75.

SENECIO SPP.

240825 (4101) Compositae. Perennial 12"
high; leaves serrate-dentate, long-petiolate; ray flowers yellow. A spreading plant
for edging. Cuttings from 5.

241092 (4116) Seeds from 3 and 241359 (4983) Seeds from 4. A much-branched, spreading perennial, 12" tall; leaves 1-2" long, serrate-dentate; ray flowers yellow. An attractive species for edging or cascading over a wall.

SENECIO ACAULIS (L.f.) Sch. Bip.

(4747) South Africa. Cuttings from 3. SENECIO AMANIENSIS (Engl.) Jacobs.

(4527) Tanganyika. Cuttings from 3. SENECIO ANTEUPHORBIUM (L.) Sch. Bip.

(4365) Succulent shrub, 3-4' tall; leaves about 1" long; flower-heads yellow. Cape Province, South Africa. Cuttings from 75.

SENECIO BOJERI DC.

(4441) Madagascar. Cuttings from 3.

SENECIO COCCINEUS (Oliv. & Hiern.) Jacobs. (4361) Kenya. Cuttings from 75.

SENECIO CUNEATUS Sch. Bip.

South Africa.

(4362) Cuttings from 75. (4752) Cuttings from 3.

SENECIO CYLINDRICUS (Bgr.) Jacobs. (4764) Cape Province, South Africa. Cut-

tings from 75.
SENECIO CYLINDRICA (Bgr.) Jacobs. 'SPICULOSA'
(4528) Cuttings from 3.

SENECIO DIVERSIFOLIUS Phil.

(4753) Chile. Cuttings from 3.

SENECIO GLASTIFOLIUS L. f.

241091 (4114) Perennial, 4-5' tall; inflorescence much-branded more or less flat-topped; rays lavender to white.

Spring. Showy. South Africa. Seeds from 3.

Spring. Showy. South Africa. Seeds from SENECIO GRANTII (Hook. f.) Sch. Bip.

(4369) Tanganyika. Cuttings from 75.

SENECIO GREGORI F. Muell.

(4526) Australia. Cuttings from 3.

SENECIO HAWORTHII (Haw.) Sch. Bip. (4367) Succulent subshrub, about 1' tall, white-woolly; leaves cylindrical, 1-2" long; flower-heads orange-yellow. Cape Province, South Africa. Cuttings from 75.

SENECIO HERREIANUS Dtr.

(4531) SW. Africa. Cuttings from 3.

SENECIO × HINTERMANII Gattef. & Maire (4524) and (4715) Garden origin. Cuttings from 3.

SENECIO HOERLEINIANUS

(4754) Cuttings from 3.

SENECIO HUMBERTII (Guill.) Jacobs.

(4755) Madagascar. Cuttings from 3.

SENECIO JUNCEUS Harv.

(4525) and (4765) Cape Province, South Africa. Cuttings from 3.

SENECIO LONGIFLORUS var. VIOLACEUS (Bgr.) E. A. Bruce & Hutch.

(4363) Ethiopia. Cuttings from 75.

SENECIO MACROGLOSSUS DC.

(4756) Cape Ivy. Evergreen climber; leaves resembling those of <u>Hedera</u>, dark, lustrous green; flower heads yellow; excellent greenhouse climber; winter flowering South Africa. Cuttings from 3.

SENECIO MADAGASCARIENSIS (Humb.) Jacobs.

(4364) Madagascar. Cuttings from 75.

SENECIO OXYRIAEFOLIUS DC.

gated with red-purple. W. Tropical
Africa. Showy. Cuttings from 1.
SIDEROXYLON INERME L.

SENECIO OXYRIAEFOLIUS DC.

(4442) Cape Province, South Africa. Cuttings from 3.

SENECIO PETRAEUS (R. E. Fries) Jacobs.

(4529) Kenya, Tanganyika. Cuttings from 3. SENECIO PUSILLUS Dtr.

(4223) and (4393) SW. Africa. Cuttings from 75.

SENECIO PYRAMIDATUS DC.

(4206) Succulent shrub, 2' tall; leaves densely arranged, 3-4" long, glaucous or cobwebby; flower-heads 2" across, yellow. Very handsome. Cape Province, South Africa. Cuttings from 75.

SENECIO RADICANS (L. f.) Sch. Bip. (4530) and (4748) Cape Province. South Africa. Cuttings from 3.

SENECIO ROTUNDIFOLIUS Hook. f. 243332 (6018) Evergreen shrub, 6-8' tall; leaves 3-4" long, leathery, whitish beneath. Handsome foliage shrub. New Zealand. Cuttings from 9.

SENECIO SCAPOSUS DC. (4207) Shrubby, fleshy, 12" tall; leaves 2-3" long, crowded at tips of shoots, cobwebby at first; flower-heads yellow. Cape Province, South Africa. Cuttings from 75.

SENECIO SCAPOSUS var. CAULESCENS Haw. (4217) Cape Province, South Africa.
Cuttings from 75.

SENECIO STAPELIAEFORMIS Phillips (4284) Cape Province, South Africa. Cuttings from 75.

SENECIO TOURNEFORTII Lapeyr. 241839 (5067) Densely tufted, stout, rhizomatous perennial 20-30" tall; leaves thick and somewhat glaucous; ray-flowers yellow. Open rocky slopes, alt. 6900', along Granada-Vasares de Veleta road, Sierra Nevada Mts., SPAIN. August 1, 1957. Plants.

SENECIO TSITENDROINA (4732) Cuttings from 3.

SEQUOIA SEMPERVIRENS (Lamb.) Endl. 'CANTAB' 242680 (5632) A sport of the normal form with much denser foliage and of prostrate habit. Origin Cambridge Botanic Garden. Cuttings from 15.

SETICEREUS HUMBOLDTII (H. B. K.) Backbg. (4227) Cactaceae. Plants from 75. SETICEREUS ICOSAGONUS (H. B. K.) Backbg.

(4229) Cuttings from 75.

SEVERINIA BUXIFOLIA (Poir.) Ten. 240534 (4040) Rutaceae. Evergreen, spiny small tree with boxwoodlike leaves. China. Cuttings from 17.

SHERBOURNIA FOLIOSA D. Don (Amaralia sherbourniae) 242312 (5408) Rubiaceae. Vigorous evergreen scrambler; leaves ovate or elliptic, 3-4" long; flowers white within, blood-red on the outside or orange varie-

240441 (4011) Sapotaceae. Small evergreen tree to 25' tall; leaves obovate, 4-5" long. Ethiopia. Cuttings from 17.

SIMETHIS PLANIFOLIA (L.) Gren. & Godr. 238782 (3776) Liliaceae. 6-8" tall; leaves 3-4" long, narrow; flowers white. Open pine woodland, 12 mi. north or Coimbra, PORTUGAL. April 6, 1957. Plants.

SINARUNDINARIA MURIELAE (Gamble) Nakai 244003 (6156) Gramineae (Bambusae) Culms 6-8' tall, naked the first year, becoming heavily leafy the second, wandlike and arching; very graceful. China. Plants from 14.

SINARUNDINARIA NITIDA (Mitf.) Nakai 244004 (6157) Culms to 10' tall, dark purple, leafless the first year, arching and becoming heavily leafy the second. China. Plants from 14.

SINOCRASSULA DENSIROSULATA (Praeg.) Bgr. (4466) and (4466a) Crassulaceae. Yunnan, China. Cuttings from 3.

SINOCRASSULA YUNNANENSIS (Franch.) Bgr. Yunnan, China.

(4386) Cuttings from 75. (4466) Cuttings from 3.

SINOJACKIA REHDERIANA Hu 242934 (5838) Styracaceae. Deciduous shrub, 4-5' tall; leaves ovate, 2-4" long, serrate. China. Cuttings from 67.

SKIMMIA REEVESIANA Fortune 'RUBELLA' (staminate) 242305 (5326) Rutaceae. Small evergreen shrub, 2-3' tall; leaves oblanceolate, 2-3" long, lustrous green; flowers white. In most respects smaller than S. japonica and hardier. China. Grown under Yu 8673.

Cuttings from 1. SOEHRENSIA GRANDIS (Rebutia)

(4228) Cataceae. Cuttings from 75.

SOLANUM BONARIENSE L. 240309 (4002) Solanaceae. Shrub to 6' tall; flowers white to violet. Floriferous. Argentina. Cuttings from 25.

SOLANUM RANTONNETII Carr. ex Lescuy 241401 (5005) Shrub 6-8' tall; flowers deep purple, 1" across. Paraguay. Cuttings from 33.

SONCHUS LEPTOCEPHALAS Cass. 241423 (5030) Compositae (Cichorieae). Perennial sub-shrub with filiform leaves. Canary Islands. Cuttings from 3.

SOPHORA JAPONICA L. 'DOT' 241473 (5046) Leguminosae. Deciduous tree with pendulous, tortuous branches and crispate leaves. An unusual form originally from a seedling grown at the nursery of Simon Dot, near Barcelona about 1920; apparently not known outside Spain. Illustrated and originally described in the Dot Nursery catalogue no. 28. Cuttings from 49. SOPHORA JAPONICA L. 'PENDULA'
238884 (3741) The branches pendulous;
very handsome when grafted on a standard.
Garden origin. Scions from 38.

SORBUS HUPEHENSIS C. Schneid. 242919 (5822) Rosaceae. Small deciduous tree with white berries. Excellent. Hupeh, China. Seeds from 66.

SORBUS VILMORINII C. Schneid. 242920 (5823) Small deciduous tree with pinkish berries in drooping clusters; very fine. China. Seeds from 66.

SPATHICARPA SAGGITIFOLIA Schott 241263 (4828) Araceae. Brazil. Plant from 3.

STAPELIA NUDIFLORA Pill.
(4401) Asclepiadaceae. Cape Province,
South Africa. Cuttings from 75.

STAPELIA PILLANSII N. E. Br. 'FONTINAL'
(4395) Flowers 5" across, purple-brown,
remarkable for the lobes which extend
into long tails. Cape Province, South
Africa. Cuttings from 75.

STAPELIA SORORIA Mass.

(4399) South Africa. Cuttings from 75. STAPELIA TRIFIDA Tod. (var. or hybrid of

S. mutabilis)

(4400) Cuttings from 75.

STAPELIANTHUS MADAGASCARIENSIS (Choux) Choux Asclepiadaceae. Madagascar. (4141) Cuttings from 75.

(4570) Cuttings from 3.

STAPELIANTHUS MONTAGNACI (Boit.) Boit. & Bertr.

(4569) Closely related to Stapelia. SW. Madagascar. Cuttings from 3.

STEWARTIA SPP. Theaceae.

241317 (4947) Deciduous tree 20' tall; flowers 1-2" across, white. Cuttings from 33.

STRANVAESIA DAVIDIANA var. UNDULATA (Decne.)
Rehd. & Wils. 'FRUCTU-LUTEO'
238219 (3631) Rosaceae. Half-evergreen
shrub with yellow fruits. Reproduces
true from seed. China. Seeds from 35.

STRANVAESIA NUSSIA (Buch.-Ham.) Decne. (S. glaucescens)

239666 (3905) Evergreen tree to 40' tall; leaves glossy green, about 4-5" long; flowers in terminal clusters, white. Himalayas. Cuttings from Villa Elena, Pallanza, Lake Maggiore, ITALY.

240541 (4044) Cuttings from 17. STREPTOCARPUS CAULESCENS Vatke

239318 (3736) Gesneriaceae. Perennial herb, 12" tall with thickish gouty stems; flowers small, deep blue. Fine floriferous pot plant for warm house. Tropical East Africa. Seeds from 13.

STROBILANTHES GLOMERATUS T. Anders.

241163 (4862) Acanthaceae. Perennial
3' tall; leaves soft pubescent on the
upper side, lighter below; flowers purple.
Himalayas, Burma. Cuttings from 3.

STROBILANTHES KUNTHIANUS Benth.
(5105) Densely branched, widely spreading

shrub, 3-4' tall; leaves coriacesous, lustrous, scabrous above, dull beneath; flowers bluish. Nilgiri Hills, S. India. Cuttings from 63.

STROBILANTHES LACTATUS Hook.

240766 (4079) Herb with ovate mottled leaves, green above, whitish below. Cuttings from 20.

STROPHANTHUS SPECIOSUS (Ward & Harv.) Reber Apocynaceae. Large evergreen shrub, with shiny lanceolate acuminate leaves; flowers chartreuse, the rim of cup orange; handsome shrub. South Africa. 240048 (3952) Cuttings from 7. 241264 (4809) Cuttings from 3.

SULCOREBUTIA STEINBACHII (Werd.) Backbg. Cactaceae.

(4316) Plants from 75. (4483) Plants from 3.

SYCOPSIS SINENSIS Oliv.

Hamamelidaceae.

238040 (3604) Small, spreading evergreen shrub with showy yellowish green stamens. Hupeh, China. Cuttings from 2.

242306 (5339) Cuttings from 1. SYMPLOCOS DRYOPHILA C. B. Clarke

243280 (6001) Symplocaceae. Small evergreen globose tree, 20' tall. Grown under Forrest 24052. Yunnan, China. Cuttings from 9.

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TAMARIX PENTANDRA Pall. (<u>T. aestivalis</u>)
238041 (3627) Tamaricaceae. Flowers pink,
early summer. SE. Europe. Cuttings
from 35 (from the type plant of <u>T.</u>
aestivalis).

TAPEINOCHEILOS PUNGENS Miq. (T. ananassae)
Zingiberaceae. Rhizomatous, 4-5' tall;
leaves broadly elliptic, 6-8" long;
inflorescence basal, conelike, terminal on
a scape, the bracts reddish, waxlike.
Very showy in flower and unusual. Malaya.
242416 (5400) Plant from 1.
242541 (5604) Plant from 28.

TARCHONANTHUS CAMPHORATUS L.

240078 (3957) Compositae. Large evergreen shrub with silvery tomentose leaves beneath, green above; flower heads purple. Tropical and South Africa. Cuttings from 7.

TAVARESIA ANGOLENSIS Welw.
Asclepiadaceae. Angola.
(4154) Cuttings from 75.
(4568) Cuttings from 3.

TECOMARIA CAPENSIS (Thunb.) Spach
241265 (4788) Bignoniaceae. Scrambling
shrub; flowers orange-scarlet. South
Africa. Cuttings from 3.

TELOPIA TRUNCATA R. Br. Proteaceae.

242935 (5837) Evergreen shrub 6-8' tall; leaves oblanceolate, 2-3" long, deep green above, glaucous below. Australia. Cuttings from 67.

242936 (5846) Seeds from 67.

TEPHROCACTUS (Opuntia) DACTYLIFORMIS (4335) Cactaceae. Cuttings from 75.

TEPHROCACTUS HAAGEANA

(4333) Cuttings from 75.

TETRAPANAX PAPYRIFERUS (Hook.) Koch 239362 (3829) Araliaceae. Large evergreen shrub with whitish felted leaves, a foot across; a source of rice-paper. Formosa. Cuttings from 33.

TETRASTIGMA HARMANDII Planch.

Vitaceae.

239548 (3856) Evergreen, rank-growing vine with tendrils; leaves lustrous; flowers greenish; handsome. Indo-China. Cuttings from 3.

240127 (3981) Cuttings from 7.

TETRASTIGMA VOINIERIANUM (Balt.) Pierre ex Pitard (pistillate) 241266 (4795) Woody evergreen strong climber to 30' long with tendrils; leaves leathery; handsome foliage. Siam. Cuttings from 3.

TEUCRIUM SPP.

239067 (3798) Labiatae. Stiff, erect shrub 14" tall, with dimorphic leaves, aromatic; dry rocky exposed south-facing slopes, 12 mi. SE. Seville, along road N. 334, Prov. Seville, SPAIN. April 13, 1957. Cuttings.

TEUCRIUM BETONICUM L'Herit.

238783 (3773) Evergreen shrub, 4-5' tall; flowers blue. Madeira. Cuttings from 13.

TEUCRIUM POLIUM L.

239070 (3801) Aromatic, densely tufted erect perennial, flowers small, white; steep rocky slopes along Mediterranean coast, 12 mi. east of Malaga, along road N. 340, Prov. Malaga, SPAIN. April 14, 1957. Cuttings.

TEUCRIUM POLIUM var. MONTANUM Boiss.
242044 (5060) Densely tufted perennial
6" tall with grayish to silvery white
leaves; flowers yellow, small. Forms
mats. Rock garden. Open sandy slopes,
alt. 4500' along road Granada-Vasares de
Veleta, Sierra Nevada Mts., SPAIN. August
1, 1957. Seeds.

TEUCRIUM SUBSPINOSUM Pourr. ex Willd. 245343 Low evergreen stiff shrub; leaves minute; flowers pink. Balearic Islands. Plants from 81.

THEOPHRASTA IMPERIALIS Lind.

Theophrastaceae. Evergreen tree, 30' tall; leaves thick-leathery, spine-tipped, 12-14" long; very handsome unusual tropical tree. West Indies.

240344 (3991a) Cuttings from 34. 240442 (4007) Cuttings from 17.

THRIXANTHOCEREUS BLOSSFELDIORUM (Werd.)
Backbg.

(4307) Cactaceae. Cuttings from 75.

THUJA OCCIDENTALIS L. 'RHEINGOLD' 244656 Pinaceae. Broadly pyramidal; leaves golden in summer, becoming bronze in autumn. Garden origin. Plant from 80.

THUJA ORIENTALIS L. 'HILLIERI'
244655 Compact, perfectly ovoid in shape;
leaves yellow-green, becoming green in
winter. Garden origin. Plant from 80.

THUJA ORIENTALIS L. 'JUNIPEROIDES'

244657 Garden origin. Plant from 80.

THUJA ORIENTALIS L. 'MELDENSIS'

244658 Leaves principally juvenile, bluish green in summer, and reddish purple in winter. Garden origin. Plant from 80.

THUJA PLICATA D. Don 'AUREO-VARIEGATA' ('Zebrina')

247787 Foliage yellowish variegated.

Garden origin. Plants from 70. THUJA PLICATA D. Don 'ROGERSII'

Very dwarf pyramidal form with golden and bronze-colored foliage. Garden origin. 244659 Plant from 80.

245344 Plant from 81.

THUNBERGIA ELEGANS Borzi Acanthaceae 240648 (3973) Garden origin. Seeds from 7.

THUNBERGIA ERECTA (Benth.) T. Anders. 242681 (5640) Erect shrub, 6' tall; flowers deep blue, excellent. Nigeria. Cuttings from 15.

THUNBERGIA FRAGRANS Roxb. (T. cordata) 241164 (4855) Flowers 3" across, indigo blue, very showy. Malaya. Cuttings from 3.

THUNBERGIA GIBSONII S. Moore
241872 (5003) Scrambling perennial 10'
long or more; leaves hairy; flowers deep
orange, 1-12" across; attractive, quick
growing. Mountains of East Africa. Seeds
from 23.

THUNBERGIA VOGELIANA Benth.
242374 (5377) Evergreen rampant scrambler; leaves elliptic, 6-8" long; flowers blue; very attractive. Nigeria. Cuttings from 1.

THYMUS CAESPITITIUS Brot.

238717 (3672) Labiatae. Densely tufted spreading perennial. Open pine woods, alt. 300'; near Amarante, PORTUGAL. March 22, 1957. Plants.

THYMUS CAPITATUS Hoffmgg. & Link (Coridothymus capitatus)

241947 (5089) Low shrub, 6-12" tall,
much-branched; flowers in capitate heads,
lavender; showy flowers, midsummer. For
dry mild climate; on the Roman ruins
called "Italica", 7 mi. NW. Seville,
Prov. Seville, SPAIN. August 7, 1957.
Seeds.

TILIA SPP.

238043 (3626) Tiliaceae. Deciduous tree, 30' tall; leaves and flowers very large for Tilia. Seed originally from China. Cuttings from 35.

TILIA MIQUELIANA Maxim.
237922 (3587) Deciduous tree, 30' tall.
Japan. Cuttings from 10.

TILIA TOMENTOSA Moench 'PENDULA'
238042 (3597) Deciduous tree with the
ends of the branches pendulous. Garden
origin. Cuttings from 2.

TOCOCA LATIFOLIA Naud.

242375 (5358) Malastomataceae. Perennial subshrub, 3-4' tall; leaves broadly ovate, 8-10" long, metallic green above, plaited, serrate, acuminate, the veins prominent below, the petioles and stems brownish, long-pubescent. One of the so-called ant plants. Colombia. Handsome. Cuttings from 1.

TOURNEFORTIA LAURIFOLIA Vent.
240596 (4021) Boraginaceae. Vigorous
evergreen climber; leaves lustrous above.
Tropical America. Cuttings from 17.

TRACHELOSPERMUM JASMINOIDES Lem. 'NANUS'
Apocynaceae.
241339 (4964) Low, somewhat spreading
erect evergreen shrub, 12-14" tall, never

climbing, and rarely flowering; should

make a useful border plant. Garden origin. Cuttings from 58.

241360 (4973) Cuttings from 4.

TRACHELOSPERMUM JASMINOIDES Lem. 'NANUS 'VARIEGATUS'

241402 (5010) Dwarf nonclimbing form with white variegated leaves. Garden origin. Cuttings from 33.

TRACHYSTEMON ORIENTALIS (L.) D. Don
239336 (3833) Boraginaceae. Rhizomatous
perennial; leaves all basal, cordate, 12"
wide. Good woodland groundcover. Asia
Minor. Plants from 33.

TRADESCANTIA FLUMINENSIS Vell.

243899 (6127) Commelinaceae. Leaves variously marked green, white-striped above, pink or vermilion below. Bizarre plant. Brazil. Cuttings from 47.

TRADESCANTIA FUSCATA Lodd.

241267 (4821) Stems brown-hairy; leaves 6-8" long; flowers blue, 1" across, crowded among the leaves. Brazil. Cuttings from 3.

TREVASIA PALMATA Vis.

241165 (4850) Araliaceae. Evergreen small tree with dimorphic leaves. The juvenile leaves digitately divided; fine foliage plant. Malaya. Cuttings from 3.

TRICHILIA SPP.

241927 (5115) Meliaceae. Tree, 30' tall; leaves pinnately divided, the leaflets about 5-6" long; seeds with a fleshy yellow aril. Seeds from 61.

TRICHOCAULON PEDICELLATUM Schinz (4144) Asclepiadaceae. SW. Africa. Cuttings from 75.

TRICHOCEREUS ANDALGALENSIS (A. Weber. ex K. Sch.) Hosseus

(4301) Cactaceae. Cuttings from 75.

TRICHOCEREUS AURICOLOR Backbg.

Argentina.

(4302) Cuttings from 75.

(4708) Cuttings from 3.

TRICHOCEREUS HUASCHA var. RUBRIFLORUS (Weber.)
Backbg. & Knuth
(4703) Cuttings from 3.

TRICHOCEREUS MANGUINII Backbg.

(4219) and (4300) Cuttings from 75.

TRICHOCEROS SPP.

242760 (5663) Orchidaceae. Epiphyte. Collected by Mr. Lancaster. Costa Rica. Plants from 28.

TRICHOCLADUS CRINITUS Pers.

240767 (4078) Hamamelidaceae. Evergreen rusty-tomentose shrub; leaves dark green above; flowers whitish. Interesting witch-hazel relative with handsome foliage. South Africa. Cuttings from 20.

TRIDACTYLE BICAUDATA (Lindl.) Schltr. 242761 (5655) Orchidaceae. Epiphyte. From Amani, Tanganyika. Plants from 28.

TRIPOGANDRA (Neodonnellia) GRANDIFLORA (D. Sm.) Woodson 243893 (6117) Commelinaceae. Sprawling perennial; stems wiry; leaves 1-2" long, lustrous green; flowers whitish. Basket

plant. Guatemala. Cuttings from 47.

TRIPTERYGIUM FORRESTII Loesn.

242417 (5430) Celastraceae. Shrub, muchbranched from the base, the new shoots long and lithe, brownish; leaves ovate, serrate, long acuminate. Grown under Farrer 1035. China. Cuttings from 1.

TULBAGHIA VIOLACEA Harv.
238722 (3713) Liliaceae. Bulbous; scapes
2-3' tall; flowers violet. South Africa.
Bulbs. From 52.

U

UNDETERMINED

240317 (3992) and 241925 (5097) Small evergreen tree, 20' tall; leaves 2-3" long, ovate, dark green lustrous above, much lighter beneath. Very attractive foliage plant. Cuttings from 7 and 60. 240684 (4066) Large evergreen shrub; leaves tomentose beneath, shiny green above. Cuttings from 6. 242542 (5606) Rhizomatous perennial with

narrow, iris-like leaves, 1" wide; notation on plant as collected says, "blue fruits of herb like Dianella."

Collected by L. Maurice Mason. Madagascar.

Plant from 28. 242543 (5610) and 242603 (5521) Possibly Gesneriaceae. Epiphyte; stems delicate, creeping; leaves 1/2-3/4" long, nearly

orbicular, fleshy; flowers allegedly red. Collected by L. Maurice Mason. Madagascar.

Cuttings from 28.

242582 (5630) Evergreen shrub. Collected by L. Maurice Mason, New Guinea. Cuttings from 28.

243332 (6018) Evergreen shrub, 6-8' tall. Attractive. Cuttings from 9.

(5104) Collected as Labium discolor but

this name evidently untenable. Muchbranched evergreen small shrub; leaves 1-2" long, white-tomentose below, lustrous above. Cuttings from 63.

URBINIA × CUTRA

(4547) Crassulaceae. Cuttings from 3.

## V

VACCINIUM DELAVAYI Franch.

242255 (5286) Evergreen much-branched shrub, 2-3' tall; leaves lustrous, 1" long. Fine, neat foliage plant. China. Cuttings from 1.

VACCINIUM NUMMULARIA Hook. f. & Thoms. 243283 (5994) Spreading evergreen shrub, 2-3' tall; flowers white; berries black. Probably a Forrest introduction. Cuttings from 9.

VACCINIUM URCEOLATUM Hemsl.

Evergreen shrub, 5' tall; berries black.
Handsome. China.

243281 (5991) Cuttings from 9.

243282 (5992) Seeds of P.I. 243281.

VALERIANA TUBEROSA L.

239371 (3839) Valerianaceae. Tuberousrooted perennial to 24" tall; flowers pinkish; shale slopes above the Vésubie river, near Lantosque, Alpes-Maritime, FRANCE. April 28, 1957. Plants.

VANZIJLIA ANGUSTIPETALA (L. Bolus) N.E. Br. (4778) Aizoaceae. Desert succulent. Cape Province. Cuttings from 3.

VELLOZIA ELEGANS Talbot
241606 (5050) Velloziaceae. Rhizomatous,
densely tufted herbaceous perennial; leaves
5-6" long, dark green, lustrous; flowers
white. South Africa. Plants from 12.

VERBENA TRIDENS Lagasca
242489 (5491) Verbenaceae. Evergreen shrub,
2-3' tall; leaves very abbreviated, on
wiry whitish branches. Uruguay. Cuttings
from 1.

VIBURNUM AWABUKI K. Koch
238044 (3614) Evergreen shrub. Japan.
Fine foliage. Cuttings from 35.

VIBURNUM FOETIDUM Wall. 243284 (5985) Caprifoliaceae. Evergreen shrub, 6' tall; fruit red. China. Probably a Forrest introduction. Cuttings from 9. 243285 (5986) Seeds from 9.

VIBURNUM JAPONICUM (Thunb.) Spreng.
241981 (5135) Evergreen shrub, 6-8' tall;
leaves deep green, lustrous; flowers white.
Japan. Cuttings from 32.
242635 (5136) Seeds of P.I. 241981.

VIBURNUM SUSPENSUM Lindl. 238784 (3758) Evergreen shrub, 4-6' tall; flowers white, fragrant. Cuttings from 13.

VINCA MAJOR L. 'PUBESCENS'
239252 (3820) Apocynaceae. Leaves narrower
than in the typical form of the species;
flowers rose-violet, the petals pointed.
South Europe. Cuttings from 33.

VIOLA CORNUTA L. 'SAN REMO'
241030 (4093) Violaceae. Vigorous form,
6-8" tall; flowers mostly blue, blotched
white, very floriferous and showy. Garden
selection. Seeds from 5.

VISNEA MOCANERA L. f.
Theaceae. Evergreen tree, 20-30' tall;
Canary Islands. Introductions from 7.
240119 (3963) Cuttings.
240120 (3963) Seeds.

VITEX GLABRATA R. Br.

240009 (3929) Verbenaceae. Large shrub, 6-8' tall; leaves digitately compound, lustrous. Handsome foliage. Australia. Cuttings from 7.

VITIS VINIFERA L. 'PURPUREA'
242868 (5770) Vitaceae. Deciduous; leaves
strongly purplish red from the beginning
and remaining so throughout the season,
fine ornamental sort. Garden origin. Cuttings from 36.

VOHEMARIA MESSERI Buchenau 240027 (3876) Asclepiadaceae. Greenstemmed, sprawling and scrambling. Madagascar. Cuttings from 3.

## W

WEINGARTIA CUMINGII (Hopffer) Backbg. (4203) Cactaceae. Desert succulent. Cuttings from 75.

WILKESIA GYMNOXIPHIUM A. Gray
239380 (3947) Compositae. Iliau. Arborescent, 12-20' tall, monocarpic; disk
flowers yellow. Unusual. Kauai, Hawaiian
Islands. Plant from 3.

WITHANIA ARISTATA Pauq. 240047 (3938a) Evergreen shrub; flowers green, small. Interesting, foliage. Canary Islands. Cuttings from 7.

WOODWARDIA RADICANS (L.) J.E. Sm. 241166 (4858) Polypodiaceae. Fronds 3-4' long, robust and leathery; viviparous buds formed on the fronds. South Europe, Asia. Plants from 3.

## XYZ

XEROSICYOS DANGUYI Humb.

Cucurbitaceae. Succulent shrub to 2' tall; leaves round, thick, succulent, about 1-2" across. Curious desert squash-vine relative. Madagascar.

(4398) Cuttings from 75. (4578) Cuttings from 3.

XEROSICYOS PERRIERI Humb.

(4566) Leaves succulent, smaller than X. danguyi and oval. Madagascar. Cuttings from 3.

ZINGIBERACEAE (undetermined)
242683 (5683) Rhizomatous. Grown under L.
Maurice Mason 36, New Guinea. Rhizomas
from 28.



